Journal of Animal & Natural Resource Law

Michigan State University
College of Law

May 2019

Volume XV

The Journal of Animal & Natural Resource Law is published annually by law students at Michigan State University College of Law.

The *Journal of Animal & Natural Resource Law* received generous support from the Animal Legal Defense Fund and the Michigan State University College of Law. Without their generous support, the Journal would not have been able to publish and host its annual symposium. The Journal also is funded by subscription revenues. Subscription requests and article submissions may be sent to: Professor David Favre, *Journal of Animal & Natural Resource Law*, Michigan State University College of Law, 368 Law College Building, East Lansing MI 48824, or by email to msujanrl@gmail.com.

Current yearly subscription rates are $27.00 in the U.S. and current yearly Internet subscription rates are $27.00. Subscriptions are renewed automatically unless a request for discontinuance is received.

Back issues may be obtained from: William S. Hein & Co., Inc., 1285 Main Street, Buffalo, NY 14209.

The *Journal of Animal & Natural Resource Law* welcomes the submission of articles, book reviews, and notes & comments. Each manuscript must be double spaced, in 12 point, Times New Roman; footnotes must be single spaced, 10 point, Times New Roman. Submissions should be sent to msujanrl@gmail.com using Microsoft Word or PDF format. Submissions should conform closely to the 19th edition of The Bluebook: A Uniform System of Citation.

Journal of Animal & Natural Resource Law

Vol. XV **2019**

Journal of Animal & Natural Resource Law

Vol. XV **2019**

Peer Review Committee
2018-2019

Journal of Animal & Natural Resource Law

Vol. XV **2019**

Peer Review Committee

Taimie L. Bryant is a Professor of Law at UCLA School of Law where she teaches Property and Nonprofit Organizations in addition to teaching different courses on animal law. Prior to receiving her J.D. from Harvard Law School, Professor Bryant earned a Ph.D. in anthropology from UCLA. Since 1995, she has turned her attention to animal rights, focusing both on the theoretical issues of conceptualizing such rights and on legislative and other legal regulations of human treatment of animals. Recent publications include *Similarity or Difference as a Basis for Justice: Must Animals be Like Humans to be Legally Protected from Humans?, False Conflicts between Animal Species,* and *Transgenic Bioart, Animals and the Law.*

David Cassuto is a Professor of Law at Pace University School of Law where he teaches Animal Law, Environmental Law, Property Law, and Professional Responsibility. Professor Cassuto has published and lectured widely on issues in legal and environmental studies, including animal law. He is also the Director of the Brazil-American Institute for Law & Environment. He holds a B.A. from Wesleyan University, an M.A. & Ph.D. from Indiana University, and a J.D. from the University of California, Berkeley, Boalt Hall School of Law.

David Favre is a Professor of Law at Michigan State University College of Law. He is Faculty Advisor to the *Journal of Animal & Natural Resource Law* and Chair of the Peer Review Committee of the Journal. As Editor-in-Chief of the *Animal Legal and Historical Web Center*, he has published several books on animal issues. Professor Favre teaches Animal Law, Wildlife Law, and International Environmental Law.

Peer Review Committee continued

Rebecca J. Huss is a Professor of Law at Valparaiso University School of Law in Valparaiso, Indiana. She has a LL.M. in International and Comparative Law from the University of Iowa School of Law and graduated magna cum laude from University of Richmond School of Law. Recent publications include *Companion Animals and Housing in Animal Law and the Courts: A Reader; Rescue Me: Legislating Cooperation between Animal Control Authorities and Rescue Organizations; Valuation in Veterinary Malpractice;* and *Separation, Custody, and Estate Planning Issues Relating to Companion Animals*. Professor Huss's primary focus in research and writing is on the changing nature of the relationship between humans and their companion animals and whether the law adequately reflects the importance of that relationship.

Peter Sankoff is an Associate Professor at the University of Western Ontario Faculty of Law who specializes in animal law, criminal law, and the law of evidence. He is the author or editor of five books, including *Animal Law in Australasia: A New Dialogue,* the first book ever published in the southern hemisphere to focus exclusively on animal law issues. Peter lectures and publishes on a variety of animal law topics. Professor Sankoff taught animal law at the University of Auckland from 2006-2010, and also as a Visiting Professor at Haifa University in Israel, and the University of Melbourne Australia. He has also taught an advanced animal law course entitled Comparative Concepts in Animal Protection Law at Lewis and Clark College of Law.

Steven M. Wise is President of the Center for the Expansion of Fundamental Rights, Inc. and author of *Rattling the Cage—Toward Legal Rights for Animals (2000), Drawing the Line—Science and The Case for Animal Rights (2002), Though the Heavens May Fall—The Landmark Trial That Led to the End of Human Slavery (2005),* as well as numerous law review articles. He has taught Animal Rights Law at Vermont Law School since 1990, and at Harvard Law School, John Marshall Law School, and will begin teaching at St. Thomas Law School. Mr. Wise has practiced animal protection law for over twenty-five years.

Journal of Animal & Natural Resource Law

Vol. XV **2019**

Table of Contents

ARTICLES

Table of Contents continued

Table of Contents continued

The Evolution of Dogs: Why Keeping Dogs as "Pets" is Consistent with an Animal Rights Paradigm

Marion C. Burke

I. Animal Rights

According to the Animal Rights perspective, animals should not be property.[1] If an animal has the same legal status as a piece of furniture, then it will always be vulnerable to the whims of human beings.[2] According to this viewpoint, it is nothing more than speciesism to claim humans have any superior rights.[3] While there are various differences that can be identified between humans and non-human animals, such differences do not indicate a difference in value.[4] The tacitly accepted difference in intelligence is often pointed to, however, any such difference,

> does not mean that the life of a human has greater moral value any more than it means that the life of a human who is "normal" has a greater moral value than does the life of a mentally disabled person or that the life of an intelligent person has greater moral value than does a "normal" but less intelligent one.[5]

According to the Animal Rights perspective, humans are not better than animals and are not entitled to exploit animals however they please.[6]

---

[1] *See* Gary L. Francione, *Animal Welfare and the Moral Value of Nonhuman Animals*, 6 Law Culture & Human. 24, 24 (2010) ("Although we do not treat all humans equally, we accord all humans the right not to be treated as property. We cannot justify not according this one right to all sentient nonhumans.").

[2] *See Id.* at 25 (discussing how easy it is for humans to choose to ignore the sentient nature and interests of nonhumans, therefore having no legal obligation to nonhuman animals).

[3] *See Id.* at 26 (the author compares considering the species of a being the same as considering the race of sex of a human.)

[4] *See Id.* (discussing how nonhumans and humans have their differences, but that does not justify according them different weights, just as differences between humans do not justify placing more value on one than another).

[5] *Id.* at 34.

[6] *See Id.* ("The rights position advocates that animals should have the right to not be treated as resources of humans and that animal exploitation should be abolished and not regulated.").

According to a leading scholar on Animal Rights, Gary L. Francione, humans exhibit a "moral schizophrenia" regarding animals in that "[a]lthough we claim to take animals rights seriously, and to regard them as having morally significant interests, we routinely ignore those interests for trivial reasons."[7] Francione argues that such treatment is due to animals' property status.[8] Francione asserts that as long as animals are considered property, their interests will always be subjugated:

> The property status of animals is a two-edged sword wielded against their interests. First, it acts as blinders that effectively block even our perception of their interests as similar to ours because "suffering" is understood as any detriment to property owners. Second, in those instances in which human animal interests are recognized as similar, animal interests will fail in the balancing because the property status of animals is always a good reason not to accord similar treatment unless to do so would benefit property owners.[9]

Although part of the justification for relegating animals to property status is the difference between humans and animals, the species are not as different as many humans would like to believe.[10] Science has progressed in a way that if someone likens an animal to a human in any way, they are dismissed: "[a]ccusations of anthropomorphism are about as big a spoiler in cognitive science as suggestions of doping are of athletic success."[11] This is a disservice to the field because "[i]n our haste to argue that animals are not people, we have forgotten that people are animals, too."[12]

The truth is that different species have different cognition and capabilities that cannot be captured in a linear fashion, but represent a wide array of abilities.[13] For instance, "Clark's nutcrackers (members of the crow family) recall the location of thousands of seeds that they have hidden half a year before."[14] Further, in 2002, a study at Oxford University proved that primates are not the only order to use tools:

---

[7] Gary L. Francione, *Animals—Property or Persons? in in* Animal Rights: CURRENT DEBATES AND NEW DIRECTIONS, 108 108 (Cass R. Sunstein & Martha C. Nussbaum eds., 2004).

[8] *Id.*

[9] *Id.* at 122.

[10] Frans de Waal, *What I Learned From Tickling Apes*, NY Times (April 8, 2016), http://www.nytimes.com/2016/04/10/opinion/sunday/what-i-learned-from-tickling-apes.html.

[11] *Id.*

[12] *Id.*

[13] *Id.*

[14] *Id.*

> [A] New Caledonian crow named Betty tried to pull a little bucket with a piece of meat out of a transparent vertical pipe. All she had to work with was a straight metal wire, which didn't do the trick. Undeterred, Betty used her beak to bend the straight wire into a hook to pull up the bucket. Since no one had taught Betty to do so, it was seen as an example of insight.[15]

Humans are almost desperate in their attempt to maintain their position at the top of Aristotle's Scala Naturae that indications of empathy, thinking or planning in non-human animals are often disregarded or mislabeled.[16] Some posit that humans tend to insist on differences because they feel there is a lot at stake if one accepts humans are not, in fact, superior:

> When our ancestors moved from hunting to farming, they lost respect for animals and began to look at themselves as the rulers of nature. In order to justify how they treated other species, they had to play down their intelligence and deny them a soul. It is impossible to reverse this trend without raising questions about human attitudes and practices. We can see this process underway in the halting of biomedical research on chimpanzees and the opposition to the use of killer whales for entertainment.[17]

We can move away from the idea that humans are better and smarter than non-human animals and, instead, marvel at the evolutionary processes that connect us.[18] In fact, "[c]ognitive ethologists and others have confirmed that animals, including mammals, birds, and even fish, have many of the cognitive characteristics once thought to be uniquely human."[19] In fact:

> The proposition that humans have mental characteristics wholly absent in animals is inconsistent with the theory of evolution. Darwin maintained that there are no uniquely human characteristics: "[T]he difference in mind between man and the higher animals, great as it is, is certainly one of degree and not of kind." Animals are able to think, and possess many of the same emotional responses as do humans: "[T]he senses and institutions,

---

[15] *Id.*
[16] *Id.*
[17] *Id.*
[18] *See id.*
[19] Francione, *supra* note 7 at 128.

> the various emotion and faculties, such as love, memory, attention, curiosity, imitation, reason…associated animals have a feeling of love for each other" and that animals "certainly sympathise with each other's distress or danger"[20]

It is undeniable that non-human animals have advanced in fascinating and complex ways, in many ways similarly to the evolution of humans.[21] For instance, some animals are highly intelligent and can "process information in sophisticated and complex ways."[22] Animals are able to communicate with other members of their species and with humans.[23] There is even evidence that nonhuman great apes use symbolic language to communicate.[24] Beyond language, scholars argue that animals are moral as well; including primatologist Frans de Waal, who stated: "honesty, guilt, and the weighing of ethical dilemmas are traceable to specific areas of the brain. It should not surprise us, therefore, to find animal parallels. The human brain is the product of evolution. Despite its larger volume and greater complexity, it is fundamentally similar to the central nervous system of other mammals."[25] Additionally, there is evidence that animals act in purely altruistic ways.[26] For example, there are over seventy recorded instances of humpback whales rescuing seals from killer whale attacks.[27] Other instances include dolphins saving humans, dogs, and other dolphins from sharks and fishing nets; and apes helping injured animals, including human children, who fall into their enclosures.[28] These acts cannot be explained by kin selection, whereby animals that live in groups help one another, in the instances where animals help members of other species.[29] Nor can they be explained by the biological theory of altruism, which is based on the idea of reciprocity, because, using the first example, a seal will never be able to help a humpback whale in the future.[30]

"[T]here is simply no reason to conclude that characteristics thought to be uniquely human have any value that allows us to use them

---

[20] *Id.* at 127.

[21] *Id.* at 129.

[22] *Id. at 128.*

[23] *Id.*

[24] *Id. at 128-9.*

[25] *Id. at 129.*

[26] *Id.*

[27] Kristin Brethel-Haurwitz & Abigail Marsh, *Animal Altruism? New research describes how humpback whales protect seals from harm*, Psychology Today (Oct. 18, 2016), https://www.psychologytoday.com/blog/goodness-sake/201610/animal-altruism.

[28] *Id.*

[29] *Id.*

[30] *Id.*

as a nonarbitrary justification for treating animals as property."[31] Further, "even if there are uniquely human characteristics, some humans will not possess those characteristics, but we would never think of using such humans as resources."[32] While there are certainly differences between humans and non-human animals:

> Even if, for instance, no animals other than humans can recognize themselves in mirrors or can communicate through symbolic language, no human is capable of flying, or breathing underwater, without assistance. What makes the ability to recognize oneself in a mirror or use symbolic language better in a moral sense than the ability to fly or breathe underwater. The answer, of course, is that *we* say so.[33]

Such a view supports the Animal Rights perspective because it puts into question practices that exploit animals for humans' benefit. In the United States, more than eight billion animals are used for food.[34] These animals are raised in conditions known as "factory farming," transported long distances in cramped, dirty conditions and finally killed among the chaos and squalor of the slaughterhouse.[35]

Considering factory farming, "[w]hile nonfarmed animals do have certain protections, albeit inadequate and poorly enforced…it is not unfair to say that, as a practical matter, farmed animals have no legal protection at all."[36] Further, farmed animals constitute nearly "ninety-eight percent of all animals (even including companion animals and animals in zoos and circuses) with whom humans interact in the United States."[37] Furthermore, as farming becomes more industrialized and less humane, "the farmed-animal industry has persuaded the majority of state legislatures to actually amend their criminal anticruelty statutes to simply exempt all 'accepted,' 'common,' 'customary,' or 'normal farming practices.'"[38] Generally, this means "a majority, or perhaps…a significant minority, of the animal industry follows it."[39] As such, the law allows factory farming "to create horrifyingly cruel farming practices

[31] Francione, *supra* note 7, at 123.

[32] *Id.* at 124.

[33] *Id.* at 123.

[34] *Id.* at 105.

[35] *Id.*

[36] David J. Wolfson & Mariann Sullivan, *Foxes in the Hen House: Animals, Agribusiness, and the Law: A Modern American Fable*, *in* Animal Rights: CURRENT DEBATES AND NEW DIRECTIONS, 191, 332 (Cass R. Sunstein & Martha C. Nussbaum eds., 2004).

[37] *Id.* at 192.

[38] *Id.* at 197.

[39] *Id.* at 213.

without limitation if it so chooses."[40] While most people would not treat animals cruelly themselves, most participate in a system that treats animals cruelly:

> [F]armed animals live out their short lives in a shadow world. The vast majority never experience sunshine, grass, trees, fresh air, unfettered movement, sex, or many other things that make up most of what we think of as the ordinary pattern of life on earth. They are castrated without anesthesia, on occasion deliberately starved, live in conditions of extreme and unrelieved crowding, and suffer physical deformities as a result of genetic manipulation. [41]

In the United States, hunters kill almost two-hundred million animals, not including the estimated fifty percent of animals that bow hunters shoot and injure without killing or retrieving.[42] Also, in the United States, millions of animals are used "annually for medical experiments, product testing and education."[43] In this type of exploitation:

> Animals are used to measure the effects of toxins, diseases, drugs, radiation, bullets, and all forms of physical and psychological deprivations. We burn, poison, irradiate, blind, starve, and electrocute them. They are purposely riddled with diseases such as cancer and infections such as pneumonia. We deprive them of sleep, keep them in solitary confinement, remove their limbs and eyes, addict them to drugs, force them to withdraw from drug addiction, and cage them for the duration of their lives. If they do no die during experimental procedures, we almost always kill them immediately afterward, or we recycle them for other…tests and then kill them.[44]

The United States, on the whole, lags far behind our European counterparts when it comes to animal welfare.[45] For example, in Switzerland, battery cages were banned in 1991.[46] In Sweden, drugs and hormones are only allowed to treat disease, and animal "slaughter[] must be as humane

---

[40] *Id.* at 216-17.
[41] *Id.* at 217.
[42] Francione, *supra* note 7, at 109.
[43] *Id.*
[44] *Id.* at 109-10.
[45] Wolfson & Sullivan, *supra* note 34, at 207.
[46] *Id.* at 222.

as possible."[47] The European Union has also made significant strides for animal rights.[48] It banned battery egg production starting in 2012 and gave detailed requirements for the proper housing of chickens—this includes 116 square inches of space per chicken as opposed to the forty-eight square inches normally used in the United States.[49] The European Union has also enacted laws on slaughter, applicable to all farm animals including poultry.[50]

In the United States, animal rights have historically been protected by the courts.[51] Some scholars argue that most people would not condone the "customary" practices used in factory farming, and accordingly, a decision to protect or not protect animals requires a conscious investigation of all available facts.[52] Because, as the law stands now, farmed animals are placed outside the jurisdiction of the courts and are solely at the discretion of the agriculture industry's determination of what is "customary."[53]

Animals are further exploited through their use in entertainment.[54] They are used in: film, television, zoos, carnivals, circuses, racetracks, dolphin exhibits, and rodeos.[55] Animals used for these purposes, "are often forced to endure lifelong incarceration and confinement, poor living conditions, extreme physical danger and hardship, and brutal treatment."[56] If the animals do not die from this treatment and are no longer useful for entertainment they are likely killed or possibly sold into research or sold to hunting preserves to be used as targets.[57] Lastly, animals are exploited through their use in the fashion industry, to the amount of eight to ten million in the United States—"trapped, snared, or raised in intensive confinement on fur farms, where they are electrocuted or gassed or have their necks broken." [58]

To scholars like Gary Francione, exploitation includes owning animals as pets.[59] "We should care for domestic animals presently

---

[47] *Id.*
[48] *Id.*
[49] *Id.*
[50] *Id.*
[51] *Id.* at 226.
[52] *Id.*
[53] *Id.*
[54] Francione, *supra* note 7 at 110.
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*
[59] *Believe in animal rights? Be prepared to go pet*-free, CBC News (Sept. 16, 2016), https://www.cbc.ca/radio/the180/facts-vs-values-in-canadian-health-care-forced-psychiatric-care-and-urban-indigenous-people-need-a-voice-1.3764173/believe-in-animal-rights-be-prepared-to-go-pet-free-1.3765424.

alive, but we should bring no more into existence."[60] Continuing the speciesism argument, just as we believe that each human has an inherent moral value, the same belief cannot be denied to sentient, non-human animals.[61] Animal Rights activists often point toward human slavery to make their point on speciesism.[62] "The institution of human slavery was structurally identical to the institution of animal ownership."[63] Like animals, "[b]ecause a human slave was regarded as property, the slave owner was able to disregard all of the slave's interests if it was economically beneficial to do so, and the law generally deferred to the slave owner's judgment as to the value of the slave."[64] Based on the specious argument that slaves are not "rational beings," they could be "sold, willed, insured, mortgaged, and seized in payment of the owner's debts."[65] The law even permitted slave owners to "inflict severe punishments on slaves for virtually any reason."[66] Today, we find the practice of slavery to be abhorrent and, while it still exists, every nation and every international law prohibits it.[67] Regardless of any differing individual characteristics, every human being has value and every human being has a right not to be owned by another.[68] As Francione concludes, "[w]e eventually recognized that if humans were to have any morally significant interests, they could not be the resources of others and that race was not a sufficient reason to treat certain humans as property."[69] Similarly, "the only difference between humans and animals is species, and species is not a justification for treating animals as property any more than is race a justification for human slavery."[70]

II. Dog Ownership

It is inaccurate to say that in order for an animal to be defined as a dog it has to be owned by a human or be a stray or lost dog that is in between human ownership for one reason or another.[71] There are two-hundred-fifty million pet dogs in the world; however, there are about one

[60] Francione, *supra* note 7 at 134.
[61] Francione, *supra* note 1 at 24, 34.
[62] Francione, *supra* note 7 at 122
[63] *Id.*
[64] *Id.*
[65] *Id.*
[66] *Id.*
[67] *Id.*
[68] *Id.*
[69] *Id.* at 123.
[70] *Id.* at 131.
[71] *See* James Gorman, *The World is Full of Dogs Without Collars*, NY Times, (Apr. 18, 2016), http://www.nytimes.com/2016/04/19/science/the-world-is-full-of-dogswithout-collars.html?emc=edit_th_20160419&nl=todaysheadlines&nlid=72865723&_r=2.

billion dogs on Earth.[72] Therefore, seven-hundred-fifty million dogs live in a world separate and apart from humans, at least in part.[73] Village dogs are a species of animals descended from wolves that expertly adapted to scavenging.[74] Lost dogs are able to join packs of village dogs, but these dogs are a breed of their own.[75] They are "much the same around the world, whether in Africa, Mongolia, China or the Americas."[76] They are usually about thirty pounds and sandy colored.[77] They are polygamous and produce many puppies that typically do not survive, very similar to wild animals.[78]

Of the two-hundred-fifty million pet dogs, the intense process of breeding was mainly undertaken by European and North American breeders.[79] Human-dog companionship is not confined to those regions, however.[80] While there are "village dogs" that are less domesticated and still resemble early forms of dogs,[81] humans naturally form bonds with dogs across cultures.[82] Though not necessarily, this is oftentimes in connection with utility, "[e]ven today, tribes in Nicaragua depend on dogs to detect prey. Moose hunters in the alpine region bring home 56 percent more prey when they are accompanied by dogs. In the Congo, hunters believe they would starve without their dogs."[83]

However, dogs are valued companions even in developing countries, even when allowed to roam free, with no distinct practical use.[84] World Vets described an experience of visiting the poor, rural town of Escamequita, Nicaragua.[85] Bringing their dogs in handbags, carts, and wheelbarrows, the residents lined up for veterinary treatment for their animals.[86] As the organization described pet ownership there, "[a]ll animals, including dogs, pigs, chickens and turkeys roam free, yet

---

[72] *Id.*

[73] *Id.*

[74] *Id.*

[75] *Id.*

[76] *Id.*

[77] *Id.*

[78] *Id.*

[79] Mark Derr, *The Wolf Who Stayed: A domestication that went both ways,* Bark (Nov. 2008) http://thebark.com/content/wolf-who-stayed.

[80] Katie Horn, *Fostering Animal Wellness in Rural Nicaragua*, World Vets (July 19, 2016), http://worldvets.org/tagged/responsible-pet-ownership/.

[81] Evan Ratliff, *How to Build a Dog*, Nat'l Geographic (Feb. 2012), http://ngm.nationalgeographic.com/2012/02/build-a-dog/ratliff-text.

[82] *See* Horn, *supra* note 78.

[83] Brian Hare & Vanessa Woods, *Opinion: We Didn't Domesticate Dogs. They Domesticated Us*, Nat'l Geographic (Mar. 3, 2013), http://news.nationalgeographic.com/news/2013/03/130302-dog-domestic-evolution-science-wolf-wolves-human/.

[84] *See* Horn, *supra* note 78.

[85] *Id.*

[86] *Id.*

everyone knows which house they belong to."[87] Though there is variation in the relationships, throughout history dogs often have had a prized position among human populations.[88] Ultimately, "people have been burying dogs and treating them with respect from the beginning, hardly the fate of scavengers."[89] There is a natural fondness and companionship between humans and dogs whether either or both parties offer a practical benefit or not.[90]

III. Who Domesticated Who?

How did dogs come to be as we know them today? Commonly referred to as "man's best friend," one common narrative is that dogs are the descendants of wolves that humans forcefully domesticated.[91] However, the scientific evidence against a theory of domestication by compulsion is growing. While it is indisputable that the dog is descended from the wolf,[92] there continues to be questions about the process of domestication. We may never know some of the specifics, but there is a growing trend away from the view that dogs are the wolves that humans conquered.[93] This trend is based on mounting evidence that suggests that wolves evolved into "man's best friend" based on mutual dependence.[94]

---

[87] *Id.*

[88] There is certainly variation. *See* Michael Roston & Dulce Ramos, *The Dogs That Don't Belong to Anyone*, NY Times, (Apr. 18, 2016), http://www.nytimes.com/interactive/2016/04/15/science/street-dogs-village-dogs-straydogs.html (describing different relationships humans have with village dogs)

[89] Derr, *supra* note 79.

[90] Dogs are often the fiercest companions of homeless individuals who oftentimes do not provide too many practical benefits to their canine friends. *See* Shirley Zindler, *Homeless People and Their Dogs*, The Bark: Dog is my Co-Pilot, (Feb. 25, 2014), http://thebark.com/content/homeless-peopleand-their-dogs.

[91] Hare & Woods, *supra* note 83.

[92] *Id*. At least it is agreed that the dog is descendent of some type of wolf. Some scientists argue that dogs are descendants of an ancient wolf that lived between 9,000 and 34,000 years ago. *See also* Jennifer Viegas, *Dogs Not as Close Kin to Wolves as Thought*, Seeker, (Jan. 16, 2014), https://www.seeker.com/dogsnot-as-close-kin-to-wolves-as-thought1768231128.html.

[93] *See How Dogs Evolved into 'Our Best Friends,' wbur, Boston's NPR News* Station, (Nov. 8, 2011), http://www.wbur.org/npr/142100653/how-dogs-evolved-into-our-best-friends.

[94] *See* Virginia Hughes, *People and Dogs: A Genetic Love Story*, Nat'l Geographic (Jan. 23, 2013), http://phenomena.nationalgeographic.com/2013/01/23/people-and-dogs-a-genetic-love-story/. This is not the only instance of inter-species friendships. *See generally* Jennifer S. Holland, Unlikely Friendships: Forty-Seven Remarkable Stories from the Animal Kingdom (2011), EBSCOhost AN 385655 ("One heartwarming tale after another of animals who, with nothing else in common, bond in the most unexpected ways. A cat and a bird. A mare and a fawn. An elephant and a sheep. A snake and a hamster.").

a. The Scavenger Theory

According to the "scavenger theory," certain wolves became camp followers and benefitted from the trash and scraps left behind by humans.[95] In this case, "survival of the fittest" did not require size, strength and aggression but rather a precocious disposition—bold enough to come near the humans but friendly enough not to be perceived as a threat.[96] Wolves that were too aggressive near the human sites would have been killed, but wolves that came near humans while remaining timid would be able to benefit from what the humans had to offer.[97] Under this theory, these early dogs would have changed in appearance quickly, as "[i]n only several generations, these friendly wolves would have become very distinctive from their more aggressive relatives."[98] These dog ancestors would have developed the "splotchy coats, floppy ears and wagging tails" that humans have come to expect in their canine companions as opposed to the sleeker, less friendly look of the wolves from which they descended.[99]

Early dogs would have developed psychologically as well under the scavenger theory, increasing their value to humans.[100] Dogs are unique in the animal world in the way they pay attention to humans.[101] This capability facilitates amazing communication between dogs and humans—dogs can understand hand gestures and even subtle cues such as a change in eye direction.[102] Not even our closest primate relatives are able to communicate with us in this way.[103] The psychological developments under the scavenger theory would have made early dogs more valuable to humans.[104] For example, they would be useful in helping obtain food, they could serve as a warning system protecting a community through barking, and they could act as defenders of humans when faced with threatening predators.[105] In this way, affection is not the only thing that would have developed between early dogs and humans—a mutual dependence for survival would have spawned as well.

---

[95] Hare & Woods, *supra* note 83.
[96] *Id.*
[97] *Id.*
[98] *Id.*
[99] *Id.*
[100] *Id.*
[101] *See id.*
[102] *Id.*
[103] *Id.*
[104] *See id.*
[105] *Id.*

b. The Hunter Theory

Based on fossil records, dogs existed alongside humans while humans were still hunters.[106] This undercuts the scavenger theory, premised on the assumption that humans lived in settled areas where friendly wolves would approach them.[107] Fossils found in China indicate that wolves and Homo erectus were in the same area as far back as 500,000 years ago, though there is no definitive proof of interaction.[108] More definitive proof of early inter-species interaction, however, can be found in France and England.[109] There are remains of wolves and Homo erectus found together in caves from 500,000 years ago in England and from 150,000 years ago in France.[110]

Wolves and humans were both large predators who very likely could have created a mutually beneficial hunting relationship.[111] Wolves followed herds of prey, shepherding them in effect.[112] This would have been valuable to humans by signaling the location of herds and by keeping the herds together in a way that made them easier to hunt.[113] Some scholars even believe that wolves taught humans to hunt because humans were able to observe wolves' instinctual behavior.[114] It was beneficial to wolves when humans hunted because they were able to kill a large number of the prey.[115] The wolves could then easily scavenge portions of the animals that humans would leave behind.[116] In this way, both wolves and humans would have benefitted from hunting together and the mutual dependence could have very well led to an inter-species bond.

Under the hunter theory, a morphological change would not have occurred until humans began to settle.[117] The early dog would have been indistinguishable from the wolf other than by its domesticated behavior.[118] Continuing relationships with humans once humans settled, or some other isolating event that would have separated these animals from wild wolves would have brought about a physical change.[119]

---

106 *See* Derr, *supra* note 79.
107 *See* Hare & Woods, *supra* note 83.
108 Derr, *supra* note 79.
109 *Id.*
110 *Id.*
111 *See id.*
112 *See id.*
113 *See id.*
114 *See id.*
115 *See id.*
116 *See id.*
117 *See id.*
118 *See id.*
119 *See id.*

Subsequent inter-breeding would have created an early dog that was distinguishable from a wolf.[120]

c. The Progression from Wolf to Dog

Archaeologists and evolutionary biologists rely on the physical differences in fossils when analyzing the evolution of wolves to dogs.[121] The basic physical difference is a smaller size as compared to sexual maturation.[122] The transition is a biological phenomenon known as "paedomorphosis."[123] Compared to wolves, not only do dogs have a smaller stature, they also have heads with more pronounced domes, and shorter and broader muzzles.[124] Some say the resultant animal resembles a wolf in a perpetually juvenile state.[125] This physical appearance does not indicate superiority of the wolf over the dog. Although dogs became smaller than wolves, dogs developed psychologically in more advanced ways.[126] For instance, dogs developed an ability to be able to follow the gaze of humans, respond to gestures and imitate human behavior.[127] As such, "[i]t is far better to look at the dog as a differently developed wolf than as a developmentally retarded wolf."[128] Lastly, dogs and humans co-evolved.[129] Dogs developed more digestion genes than wolves, which enable dogs to digest starch.[130] Humans went through the same evolution during the agricultural revolution.[131] The natural evolution from wolf to dog indicates a natural closeness between humans and early dogs.

In recent years, humans have forced an unnatural evolution on dogs.[132] Humans have accelerated the evolutionary progress of dogs by breeding distinctly different dogs and then breeding the offspring with the most distinct desired attributes.[133] Some breeding was for practical purposes and had the effect of greatly altering dogs' appearances and nature to enable them to do tasks for humans.[134] For instance, German hunters in the 1700s and 1800s combined hounds and terriers in order to create a dog with short legs and a rounded body that was able to

120 *See id.*
121 *See id.*
122 *Id.*
123 *Id.*
124 *Id.*
125 *Id.* (This is in behavior, to varying degrees, in addition to size.).
126 *See* Derr, *supra* note 79.
127 *See id.*
128 *Id.*
129 Hughes, *supra* note 94.
130 *Id.*
131 *Id.*
132 *See* Ratliff, *supra* note 81.
133 *Id.*
134 *See id.*

chase small animals into the mouths of their burrows.[135] Loose skin was a protective measure against the prey and a long, strong tail allowed the hunter to pull the dog out of a burrow with the prey in its mouth.[136] Today, this creature is known as a dachshund or "wiener dog;" and is still bred but is not typically used to hunt badgers anymore.[137] Humans created many other breeds of dogs for other practical purposes.

For example, Afghan Hounds were developed in Afghanistan, India and Pakistan to be guard dogs, which protected people and their livestock.[138] The breed was used to hunt a variety of animals, including gazelles and hares; they also serve as guardians of sheep.[139] The basset hound is a hunting dog designed to stand low to the ground for hunting small game like rabbits and pheasants in heavy groundcover through scent.[140] The Great Dane descends from the similar breed "boar hounds," which for hundreds of years served as a boar hunter, bull-baiter and general war dog for the Germans and the Celts.[141] Tosas were bred in Japan as the ultimate fighting dog, a country with roots in the pastime.[142] Traditionally, the dogs would be dressed in elaborate robes and paraded to the rings, barely controlled by their handlers.[143] The Yorkshire Terrier originally hails from the county of Yorkshire in northern England, a region known for coal miners and mill workers.[144] The dogs were used to keep vermin under control in the mines and mills.[145] Later, the dogs became popular in high society for their desirable disposition; breeders bred them smaller and smaller.[146]

Other dogs were bred less so for practical uses and more so for their general pleasantness to human owners.[147] Beginning in the late 1800s, dogs began to move into cities as pets.[148] At this time, breeders began to breed dogs with the goal of making dogs smaller and cuter, resembling perpetual puppies.[149] Part of the breeding process was isolating characteristics that softened and humanized the appearance

---

[135] *Id.*

[136] *Id.*

[137] *See id.*

[138] Dominique De Vito, Pocket Professional Guide: The Encyclopedia of Dog Breeds 23 (2011).

[139] *Id.*

[140] *Id.* at 58.

[141] *Id.* at 225. The breed is only called a "Great Dane" in English-speaking countries; in Germany, the dog is named the "Deutsche Dogge."

[142] *Id.* at 438.

[143] *See id.* at 438-39.

[144] *Id.* at 464.

[145] *Id.*

[146] *Id.* at 464-65.

[147] *See generally* Derr, *supra* note 79.

[148] *Id.*

[149] *Id.*

of certain breeds.[150] The isolation of these characteristics made a distinctly different dog in both looks and behavior.[151] The Bichon Frise, for example, originated in the Canary Islands and became popular with the visiting sailors and eventually found its way into the homes of 16th Century royals.[152] The Shih Tzu was highly prized by Chinese royalty for centuries, living lavish lives in the royal palace.[153] Still more breeds, especially more recently, have been created to be either more aesthetically pleasing or even hypo-allergenic.[154] The process of forced breeding by humans has led to three-hundred-fifty to four-hundred dog breeds in total.[155]

Breeders' quests to create the next new dog breed that humans will fall in love with has taken a tragic turn.[156] There are various breeds that some vets have considered banning because their acquired features are harmful to the animals.[157] The manipulation of genes to make dogs appear more human-like—flatter face and bigger eyes—leads to unhealthy dogs.[158] The flat face causes narrowed nostrils and windpipes that lead to respiratory problems.[159] It is difficult for dogs with this genetic trait to cool down in warm temperatures because it is laborious to pant.[160] These dogs often have teeth problems due to their small mouths not being large enough to accommodate their teeth.[161] They may also suffer from skin infections due to folds of their excessive skin.[162] Larger eyes, often times in shallow eye sockets, lead to problems as well; often, dogs with this trait cannot close their eyes properly.[163]

Unnaturally small dogs, along with unnaturally large dogs, tend to have medical problems.[164] Miniature breeds often suffer from

---

[150] *Id.*

[151] *Id.*

[152] De Vito, *supra* note 138, at 83.

[153] *Id.* at 397.

[154] *See generally, id.* (The Shih Tzu is an example of a type of dog that is bred to be aesthetically pleasing.)

[155] Ratliff, *supra* note 81.

[156] Jasper Copping, *Ban 'Unhealthy' Dog Breeds, Says Vet*, The Telegraph, (Dec. 10, 2013), http://www.telegraph.co.uk/news/health/pets-health/10508781/Ban-unhealthy-dog-breeds-say-vets.html.

[157] *Id.*

[158] *See id.*

[159] *See id.*

[160] *Id.*

[161] *Id.*

[162] *Id.*

[163] *Id.*

[164] Dogs That Changed the World, *Selective Breeding Problems*, PBS, (Sept. 16, 2010), http://www.pbs.org/wnet/nature/dogs-that-changed-the-world-selective-breeding-problems/1281/.

dislocated knees, heart problems, and an inability to stay warm.[165] Large dogs suffer from orthopedic problems, malignant bone tumors and overheating.[166] Purebred dogs of all types tend to have health problems because of their lack of genetic diversity.[167] This includes problems such as skin allergies, skin infections, immunodeficiency, blood disorders, neurological and behavioral problems, hereditary hearing loss, cataracts and other vision problems, heart disease, and more.[168] Demonstrating that this forced breeding has gone too far, bulldogs cannot even give birth without the assistance of humans.[169] Their large heads and narrow hips require caesarean sections so that a mother can birth its puppies.[170] Breeding has gone too far; human intervention has caused considerable problems for these beloved species.

d. Keeping Dogs as "Pets" and Animal Rights

According to the Animal Rights theory, there is no reason to deny the right not to be owned to animals, including "man's best friend."[171] Regardless of how well some people treat their pets, and certainly some people treat their pets better than most humans are treated, there are more people who treat their pets poorly.[172] A pet's very nature as property means, "[t]he interests of animals as property will almost always count for less than do the interests of their owners."[173] Thus, animal ownership is not consistent with an Animal Rights perspective.

According to Francione, we should take care of the dogs and other pets currently in existence but, at the same time, we should take steps to facilitate the extinction of the species.[174] This would require spaying and neutering dogs and ending the practice of breeding.[175] This position, however, assumes that dogs had no part in their domesticated status. It assumes that dogs were wolves that were forced to become domesticated to be tools for humans. It also assumes dogs are completely dependent on humans for survival.[176] As discussed above, however,

---

[165] *Id.*

[166] *Id.*

[167] *Id.*

[168] *Id.*

[169] *Id.*

[170] *Id.*

[171] *See* Dogs That Changed the World*, supra* note 164.; *see also* Gary L. Francione, *Animals—Property or Persons?*, 1 (Rutgers Law School (Newark) Faculty Papers, Working Paper No. 21, 2004).

[172] Francione, *supra* note 171, at 1.

[173] *Id.* at 29.

[174] *See id.*

[175] *See generally, id.*

[176] *See* Gary L. Francione, *"Pets": The Inherent Problems of Domestication*, Animals Rights: The Abolitionist Approach…and abolition means veganism!, (July

there is a strong case that this paradigm is inaccurate. In contrast, there is mounting evidence that ancestors of today's dogs chose to become companions with humans and naturally evolved in a different way than their wolf cousins. Humans and early wolves depended on one another and formed a bond that created the domesticated dog. While breeding trends have gone too far from this natural process of self-selecting and certain models of dog ownership are not compatible with an Animal Rights theory, human-dog companionship is not necessarily inconsistent with an Animal Rights theory.

e. Going Forward

Shifting the human-dog companionship model from an ownership system would be a radical change that would need extensive thought and planning. First, it seems clear that the breeding system we currently have would need to be eliminated under an Animal Rights model. There are many stray dogs around the world as it is and there are significant problems that have come about from overbreeding. The practice of forced breeding should come to an end.

Despite Francione's stance on spaying and neutering dogs to bring about their eventual extinction, spaying and neutering to bring about the extinction of a species seems distinctly contrary to an Animal Rights viewpoint. It is speciesism to claim that humans may decide another species should no longer exist. Dogs should be free to mate as they please. In this way, the natural process of evolution can continue for dogs from where it was interrupted by humans, albeit with certain significant changes due to centuries of forced breeding by humans.

In 2008, approximately 3.7 million animals were euthanized.[177] The causes of euthanization include overcrowding, illness, injury or aggression and could be lessened if people were to adopt from shelters rather than purchase dogs from breeders.[178] Consumers may even find purebreds at shelters because it is estimated that about a quarter of dogs at the shelters are purebreds.[179] Furthermore, local shelters ensure that the animals have received their shots and were checked by a

31, 2012), http://www.abolitionistapproach.com/pets-the-inherent-problems-of-domestication/#. (considering the issue of "pets" if they were given a similar legal status to human children and concluding, even then, such a relationship would be wrong because while most children mature to a point of independence, pets are always dependent on their human owners).

[177] American Humane, *Animal Shelter Euthanasia*, http://www.americanhumane.org/fact-sheet/animal-shelter-euthanasia-2/ (Aug. 25, 2016); *see also* Anita Hamilton, *Curbing the Puppy Trade; Dog Lovers are Divided over New Efforts to Ensure that All Breeders Treat their Pooches Humanely*, Time, Dec. 4, 2005, at 62.

[178] American Humane, *supra* note 177.

[179] Anita Hamilton, *supra* note 177, at 62.

veterinarian.[180] Dogs from shelters are generally cheaper and the mixed breeds that individuals usually get from shelters tend to have fewer health problems.[181]

Without forced breeding, dogs should be free to choose humans just as humans choose their dogs. If a dog and human choose one another as companions, each species should be able to act in a mutually beneficial way. Companionship does not mean ownership. Leashes should not be allowed and every residence that houses a dog should be required to have a "doggy-door" that allows the free ingress and egress of the "pet." It would require a major paradigm shift but leashes and keeping dogs trapped in a home, or anywhere for that matter, should no longer be the norm.

IV. Conclusion

Dogs are just as different as people are so there is probably not a one-size-fits-all fix but under the Animal Rights paradigm, the natural dog-human companionship could continue. Dogs self-selected to come into being. Humans do not have any right to bring about the extinction of their species. While dog ownership is not compatible with an Animals Rights perspective, dog companionship is. Dogs should be allowed to continue living and breeding naturally and be able to choose human companionship. In this way, dogs can continue being "man's best friend" as they have been for thousands of years.

[180] *Id.*

[181] David Colker, *An Outpouring from Readers over Tales of Puppy Problems*, LA Times, April 20, 2008, at C-3.

Passenger Pigeons: The De-Extinction and Reintroduction of a Bird

Taylor Waters[1]

I. Introduction

Currently, there exists no bird that can blot out the sky; few people remember that one did.[2] Humans caused the extinction of a species[3] that once numbered in the billions with flocks of a million or more.[4] Passenger pigeons were known to exist in most of the Eastern states,[5] and were of such a number that their selection force on other species was immense, particularly for disturbance-oriented trees.[6] As the billions of birds traversed the skies of the Mid-Western and Eastern states, they exerted a force of nature upon every species they encountered. The passenger pigeon's role as a selection force would be immense not only for the oak forests, but for the birds of prey which relied on hunting passenger pigeons.[7] During the day, vultures and cooper hawks would snack on passenger pigeons regularly.[8] Passenger pigeons were an ecological necessity for all the things they ate and all the species that ate them.[9] The precipitous decline and extinction of the most numerous bird known to have ever existed caused a grave ecological hole.[10]

---

[1] Taylor is a practicing Animal Law and Real Estate attorney in Columbus, Ohio. Taylor is a board member for the Alliance for Animals Justice Fund which promotes justice for nonhumans through the legal system. She is the 2018 Wanda Nash Award recipient for her work in animal law as well as the 2018 Ohio State Bar Association's Environmental Law Award. Taylor lives with her husband, daughter, and menagerie of dogs and cats.

[2] Joel Greenberg, A Feathered River Across the Sky 51 (Bloomsbury USA 1st ed. 2014).

[3] *See id.* at 193.

[4] *See id.* at 6-7, 51.

[5] Chih-Ming Hung et al., *Drastic Population Fluctuations Explain the Rapid Extinction of the Passenger Pigeon* 111 Proc. Nat'l Acad. Sci. U.S. Am. 10636, 10639 (2014) (discussing original range of passenger pigeons).

[6] *See* Ben Jacob Novak, Dissertation, *Deciphering the Ecological Impact of the Passenger Pigeon: A Synthesis of Paleogenetics, Paleoecology, Morphology, and Physiology*, UC Santa Cruz Elec. Theses and Dissertations 4-5 (2016).

[7] *See* Greenberg *supra* note 1, at 23-24.

[8] *Id.* at 23.

[9] *See id.* at 23-30 (discussing how passenger pigeons affected a variety of animals in the ecosystem).

[10] *See* Novak, *supra* note 3, at 6.

Humans drove passenger pigeons to extinction by exceptional devastation and exploitation.[11] One viewer remarked that "[f]or every pigeon that was shot and recorded during the last part of the nineteenth century, probably 100, perhaps [1000] were shot and eaten. Who was to record them?"[12] No one could keep up with the numbers, and there exists no reliable figure of the total amount killed in the last half of the nineteenth century.[13] Whatever the numbers, between 1871 and 1878, the passenger pigeon's fate was sealed.[14] In 1871, the largest known nesting site occurred in Wisconsin; seven years later was the last known attempt by the birds to breed in large numbers.[15] Four years later, there were likely not enough numbers for the birds to breed successfully and the exposure to greater exploitation at nesting sites made reproduction "futile."[16] The last passenger pigeon died in captivity in 1914.[17]

The revival of the passenger pigeon is already underway.[18] Revive & Restore, an organization led by a group of scientists, is actively working to bring back several species of extinct animals.[19] Revive & Restore's passenger pigeon plan sets 2022 as the earliest year for captive breeding of a new passenger pigeon.[20] The passenger pigeon species that Revive & Restore is working on will be presented as a hybrid of the band-tailed pigeon and passenger pigeon. Essentially, a band-tailed pigeon's DNA will be edited for phenotypes which will present as a passenger pigeon, with passenger pigeon DNA as part of the mix.[21]

Many critics of late have questioned the de-extinction of species as devoting resources to a species that already lost its war with humans when there are thousands of other species on the cusp that are still fighting.[22] Such a view is myopic. The researchers who are trying to bring

---

[11] *See* Jerome A. Jackson & Bette J.S. Jackson, *Extinction: The Passenger Pigeon, Last Hopes, Letting Go*, 119 Wilson J. Ornithology 767, 767 (2007) (describing the extinction of the passenger pigeon). *See also* Christopher Cokinos, Hope is the Thing with Feathers 211-18 (Jeremy O. Tarcher ed., Penguin Putnam 2000) (describing the methods of human exploitation).

[12] Greenberg, *supra* note 1, at 156.

[13] *See* Greenberg, *supra* note 1, at 154.

[14] *Id.*

[15] *Id.*

[16] *Id.*

[17] *See* Hung, *supra* note 4, at 10636.

[18] *See* Novak, *supra* note 5, at 2.

[19] Revive & Restore, *What We Do*, http://reviverestore.org/what-we-do/ (last visited Apr. 16, 2017).

[20] Revive & Restore, *The Great Passenger Pigeon Comeback, Roadmap*, http://reviverestore.org/passenger-pigeon-de-extinction-roadmap/ (last visited Apr. 16, 2017) [hereinafter Roadmap].

[21] Telephone Interview with Ben J. Novak, Lead Researcher, Revive & Restore (Apr. 6, 2017) [hereinafter Conversation].

[22] Steph Yin, *We Might Soon Resurrect Species, Is it Worth the Cost?*, NY

species back from extinction are not the conservationists trying to save the Indian elephants. Further, an ecosystem is the healthiest when species fill every niche and position.[23] Many species are endangered because the ecosystem is missing a link, and thus the whole chain suffers.[24] The genetic resurrection and reintroduction of species to stabilize an at-risk ecosystem will aid in the recovery of other species as well.[25] Like the lessons learned from Yellowstone's fire and reintroduction of wolves, the ecosystem is healthier when the ecosystem can function as close to whole as possible.[26]

No law currently protects the possibility of genetically resurrected species. Indeed, only one state has a law which protects passenger pigeons at all. New Jersey has a statute that makes it illegal to

> capture, kill, injure or have in possession, living or dead, or attempt to capture, kill or injure, a wild or passenger pigeon, or destroy or interfere in any manner with the nest or eggs of a wild or passenger pigeon, under a penalty of two hundred and fifty dollars ($250.00) for each offense.[27]

The New Jersey statute is current through the 2017 legislative session and has remained on the books long past the last passenger's demise. Nominal as the $250 may be, the passenger pigeon and other candidates for scientific resurrection will need meaningful protection at the national level if they are to have any hope of survival.

A national-level legal framework for the protection of extinct species and species subject to de-extinction is necessary for the successful reintroduction of species and protection of "Lazarus" species.[28] The Endangered Species Act's ("ESA") purpose is to recover

---

Times (Mar. 20, 2017), https://mobile.nytimes.com/2017/03/20/science/revive-restore-extinct-species-dna-mammoth-passengerpigeon.html.

[23] Conversation, *supra* note 20.

[24] Yin, *supra* note 21.

[25] Conversation, *supra* note 20.

[26] Sharon Levy, *A Top Dog Takes Over*, National Wildlife 22-29 (World Ed., Oct. 2003), (examining the effects on biodiversity in Yellowstone due to the reintroduction of wolves); *See also* Matt V. Talluto & Craig W. Benkman, *Landscape-Scale Eco-Evolutionary Dynamics: Selection by Seed Predators and Fire Determine a Major Reproductive Strategy*, 94 Ecology 1307, 1307-16 (2013) (describing the evolutionary forces of fire and seed predation, particularly in Yellowstone).

[27] N.J. Stat. Ann. § 23:4-53 (West 2018).

[28] E. Meijaard & V. Nijman, *Secrecy Considerations for Conserving Lazarus Species*, 175 Biological Conservation 21 (2014) (defining a Lazarus species as a species thought to be extinct, but then resurfaces).

species at risk of extinction.[29] However, the ESA's affirmative mandate requiring conservation efforts extinguishes when the recovery efforts are no longer necessary, such as sufficient recovery or extinction.[30] Ironic as it is, the ESA categorizes and lists species on the basis of the probability of extinction.[31] An animal that has been extinct for a hundred years like the passenger pigeon *had* a natural range and habitat, but the gap between have and had may mean the difference between protection and no protection. A species considered extinct since before the ESA would never have been listed with its critical habitat, and thus the question of whether or not it could be listed at all comes into question. The ESA does not protect the de-extinction of species which are scientifically resurrected.[32]

An "extinction list" should be added to the ESA to protect animals which are scientifically resurrected but not yet able to fully thrive on their own without scientific intervention. This list will also serve to protect endangered animals after a finding of "extinct," until a conclusion of extinct can be determined. Ideally, a species scientifically resurrected will be listed as extinct and given all the protections of an extinct-listed species until they meet the "up listing" criteria. A Lazarus species will be listed as extinct until a final finding of extinction can be determined, at which point it will be "de-listed." This new list and set of criteria for delisting a species and immediately protecting a newly resurrected species will provide a cushion for an animal to sink or swim.

An example of criteria for up-listing from extinct to endangered may include: the (1) ability to exercise traditional breeding and life-cycle processes, (2) sufficient population to be self-sustaining, and (3) full reintroduction into the natural habitat with no further constant scientific meddling. All these factors are explored in greater detail to follow.

---

[29] Endangered Species Act of 1973, 16 U.S.C. §§ 1533-44 (2006) ("The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, [and] to provide a program for the conservation of such endangered species and threatened species."); *See also* 16 U.S.C. § 1531(b); *See also* 16 U.S.C. § 1536(a)(1).

[30] 16 U.S.C. § 1532(3) (In 1988, Congress linked recovery to conservation in requiring the Secretary to "implement a system…to monitor…the status of all species which have recovered to the point at which the measures provided pursuant to this Act are no longer necessary" and which have therefore been delisted.); Endangered Species Amendments of 1988, Pub. L. No. 100-478, § 1004, 102 Stat. 2306, 2307 (codified at 16 U.S.C. § 1533(g)); *See also* 50 C.F.R. § 424.11(d)(2) (2009) (providing that a species can be delisted as recovered when "the evidence shows that it is no longer [e]ndangered or [t]hreatened.").

[31] Dale D. Goble, *The Endangered Species Act: What We Talk About When We Talk About Recovery*, 49 Nat. Res. J. 1, 7 (2009) ("The standards are set out in the Act's interlocking definitions of 'endangered' (i.e., 'in danger of extinction') and 'threatened' (i.e., 'likely to become…endangered…within the foreseeable future')").

[32] *Id.* at 44.

II. The Passenger Pigeon

a. Passenger Pigeons were Legion; they Darkened the Sky and Sounded of Thunder.

One flock of passenger pigeons could stretch around the earth's equatorial circumference 22.6 times if flying single file.[33] Numbers estimated a single flock at 2.2 billion birds.[34] They could fly up to 60 mph and still, "in spite of their speed, took three days to pass."[35] A witness to a large flock flying overhead described it as: "Flocks of millions roared like thunder, like trains, like tornadoes. Flocks descending to the ground even looked like funnels."[36] If someone wanted to get an idea of the sound, they could do so "by turning the stereo to static, and gradually turning the volume up until the walls shake."[37]

Humans used passenger pigeons for everything from sport[38] to cooking.[39] The pigeons were the original target shooting bird, maimed and exploited in contests between 1825 and 1880.[40] Plentiful as they were, passenger pigeons were cheap food for the poor and slaves.[41] In 1831, a housekeeper's manual advised anyone planning on cooking them to bear in mind that "no other bird requires so much washing."[42] A quintessential American bird, passenger pigeons were often sent overseas as Europeans were amazed that there was such a bird that could cause the "dark of an eclipse."[43]

As mind-bogglingly numerous as they were, the passenger pigeon disappeared precipitously.[44] There is no accurate graph or chart for the rate of decline either.[45] Some Ornithologists have put their numbers between 3 and 5 billion, but that is quite a margin.[46] In 1927,

---

[33] Cokinos, *supra* note 10, at 197.

[34] *Id*. (Accurate population counts of the birds are impossible to come by. "As well try, some said, to poll the sky, to call the roll of the stars and rain: how tell untold profusion?" It was impossible to get an accurate count.),; *See also* John B. Sanford, *A River of the Air*, in The Winters of that Country: Tales of the Man Made Seasons 244 ("Still, they did try, and when numeration failed them, they spoke of thickened clowdes [sic]…but no whit better did words reckon the birds in their multitudes.").

[35] Cokinos, *supra* note 10, at 198-99.

[36] *Id*. at 199.

[37] *Id.*

[38] Greenberg, *supra* note 1, at 109.

[39] *Id.* at 68.

[40] Cokinos, *supra* note 10, at 215.

[41] *See* Greenberg *supra* note 1, at 70.

[42] Cokinos, *supra* note 10, at 211.

[43] *Id*. at 198.

[44] *See* Hung, *supra* note 7, at 1636-37.

[45] *See* Jackson, *supra* note 10, at 770.

[46] Jon M. Conrad, *Open Access and Extinction of the Passenger Pigeon in*

a man by the name of Edward Howe Forbush recalled that, out of One hundred hunted birds that were recorded, "perhaps a thousand were shot and eaten."[47] Between 1871 and 1878 the species was doomed.[48] The largest nesting on record occurred in 1871, and four years after, in 1878, the last nesting attempts of any great size occurred.[49] At that point, any passenger pigeon attempts to reproduce and thrive "became virtually futile."[50]

b. The Extinction of Passenger Pigeons was Quick and without Ceremony.

In 1857 an Ohio legislative committee was quoted as saying that passenger pigeons are "wonderfully prolific" and that "no ordinary destruction can lessen them or be missed from the myriads that are yearly produced."[51] Ordinary destruction was not rained down upon the passenger pigeon, but rather the extraordinary effort of humans coupled with the belief that our actions can have no meaningful effect. In 1838, twenty years before the Ohio legislative committee met, passenger pigeons had already ceased to nest in Ohio; the birds had stopped nesting in Ohio due to human settlement, mass hunting, or both.[52] Within fifty years of that statement, wild passenger pigeons would be extinct,[53] in six more years and the last captive one would be gone as well.[54] For being so plentiful and needing only extraordinary destruction to harm their numbers, passenger pigeons did an astonishing disappearing act.

Wisconsin erected a monument to the passenger pigeon in 1947, one of the last states in which the bird existed.[55] Though long since gone by the time this last bird was awarded a statue, the dedication reads, "To the last Wisconsin passenger pigeon, shot at Babcock, Sept. 1899. This Species became extinct through the avarice and thoughtlessness of man."[56] The man who killed the last wild passenger pigeon had never witnessed a flock that darkened the sky, for "by the time he was born the numbers of passenger pigeons migrating back and forth had dwindled to a trickle."[57]

North America, 18 Nat. Res. Modeling 501 (1964).

[47] *See* Greenberg, *supra* note 1, at 156.

[48] *See id.* at 154.

[49] *See id.*

[50] *See id.*

[51] *See id.* at 208.

[52] *See id.*

[53] *See* Cokinos, *supra* note 10 at 228.

[54] *Id.* at 266.

[55] Aldo Leopold, *On a Monument to the Pigeon*, in A Sand County Almanac (Later Edition 1989).

[56] *Id.*

[57] John O'Brian, *Another Report in the Age of Extinction*, 38 Canadian Rev.

Many states did enact "protection" laws beginning in 1848.[58] New York started the first protective law by protecting nestings, saying no gun should be fired within a mile of the nesting site.[59] In 1867, the distance was changed to quarter of a mile.[60] Michigan followed in 1869 by prohibiting the disturbance of pigeons within half a mile of nestings, and in 1875 this was amended to within 2 miles.[61] In 1877 Wisconsin enacted a similar law, and in 1887 the eggs were also to be protected.[62] Ohio and Pennsylvania were next in 1876 and 1878, and Massachusetts in 1870 enacted a "closed" season law.[63]

However, the laws were designed to permit continued destruction and enforcement was rare.[64] For example, most of the laws only protected the birds from being shot, which is why the only people fighting the laws were the people that shoot at the passenger pigeons.[65] Netters benefitted from the laws and faced reduced competition because they could continue the slaughter without competing with hunters.[66] There was little to no enforcement by local authorities, because townsfolk did not support the new laws.[67] Even with clear evidence of violations, no jury would convict.[68] The only law giving the pigeons complete protection was in Michigan in 1897 after the birds were already doomed.[69] The species would be extinct in the wild within ten years of that law.[70] But that is not the end of the story. In the next two decades the world may be introduced to a new passenger pigeon; unlike the original, it will be born in a lab and of the genes of a band-tailed pigeon. Before that bird takes flight, a legislative framework must exist for the new passengers to have any hope for sustained wild survival. The Endangered Species Act as it stands currently falls short.

OF AM. STUD. 191, 196 (2008).

[58] ARLIE WILLIAM SCHORGER, THE PASSENGER PIGEON, ITS NATURAL HISTORY AND EXTINCTION 225 (1955) (Michigan's first law, indeed the first law to protect passenger pigeons, was more directed to property and land rights. New York created the first protection law for nesting sites in 1862.).

[59] *Id.*

[60] *Id.* at 226.

[61] *Id.*

[62] *Id.*

[63] *Id.* at 226-27.

[64] *Id.* at 227.

[65] *Id.* at 228.

[66] *Id.*

[67] *Id.*

[68] *Id.*

[69] *Id.* at 229 (Interestingly, the same state which refused to convict violations in 1878).

[70] *See* COKINOS, *supra* note 10, at 228.

III. The Endangered Species Act is the Best Existing Legislative Framework to Modify to Protect Newly Scientifically Resurrected Species

a. The Endangered Species Act was Created to Bring Species back from the Brink of Extinction.

The Endangered Species Act is the most comprehensive federal environmental protection legislation.[71] More to the point, it specifically deals with bringing species back from the brink of extinction.[72] Biodiversity and habitat preservation law stem from the ESA.[73] The ESA is powerful; it can stop commercial projects and even infringe on the ever-sacred landowner. [74] Created with science as the forefront of decision making and kicking economics to the back-burner, the ESA sent the message to landowners and business people that the earth matters, habitat matters, and the preservation of species matters. An act with such a lofty purpose as bringing animals back from the brink of extinction needs to be amended to conform to the scientific future of bringing back animals which had already tipped over the edge. [75] A new list—an extinction list—would solve this dilemma.

The listing process of the ESA is designed to protect the animals nearest to extinction. If a species is determined to be threatened it means the species is likely to become endangered within a significant portion

---

[71] *See* David A. Paulson, *No Endangered Species Left Behind: Correcting the Inequity in Critical Habitat Designation for Pre-1978-Amendment Listed Species*, 25 U. Haw. L. Rev. 525 (2003) (explaining it is not without criticisms for being ineffective, slow to work, bad for landowners, and provide too much discretion to the Secretary); Frederico Cheever, *The Road to Recovery: A New Way of Thinking About the Endangered Species Act*, 23 Ecology L.Q. 1, 10 (1996); Francesca Ortiz, *Article: Candidate Conservation Agreements as a Devolutionary Response to Extinction*, 33 Ga. L. Rev. 413, 422 (1999).

[72] Cheever, *supra* note 69, at 15.

[73] *See* Jason M. Patlis, *Biodiversity, Ecosystems and Species: Where Does the Endangered Species Act Fit In?*, 8 Tul. Envtl. L.J. 33 (1994) (Even though the ESA does not protect the full breadth of species by only protecting those already at risk of extinction, it does protect biodiversity by preventing holes in ecosystems, preventing healthy species from falling into an at-risk category. In other words, by protecting the critical habitats, healthy animals in those critical habitats protects biodiversity in general.).

[74] Cheever, *supra* note 69, at 15, fn. 8.

[75] 16 U.S.C. § 1531 (b) ("Purposes[.] The purposes of this chapter are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in subsection (a) of this section").

of its range within the foreseeable future.[76] If a species is determined to be endangered, it means the species is at risk of extinction throughout all or most of its range.[77]

Either the Secretary of the Interior or Commerce initiates the determination of status for a species after a status review or a petition filed by an interested person.[78] The Secretary must consider (1) the destruction, modification, or curtailment of the species habitat, (2) overuse of the species for commercial, scientific, or recreational reasons, (3) medical causes, (4) failure of other regulatory schemes, and (5) other factors such as they exist. [79] Science and commercial data are the only adequate bases on which the Secretary may make decisions; economic factors are irrelevant.[80] The Secretary must decide to list a species or not within a year, lest he or she feel the need to request more information. [81] The Secretary must follow the same requirements as listing a species.[82] To be delisted the species must have either recovered or gone extinct.[83] A failure of the original data may also lead to delisting. [84]

Endangered Species Act protections should not end at extinction, but rather an initial finding of extinction should trigger a new phase of protections and down-listing into an "extinction list," not delisting altogether. As it stands right now, the ESA's protections end when a species is declared extinct.[85] If a species is declared extinct too early, it may be driven to extinction by a sudden drop-off in protections or may arise later as a Lazarus species.[86]

---

[76] 16 U.S.C. § 1532(20).

[77] 16 U.S.C. § 1532(6).

[78] 4 Robert L. Glickman & Kristina Alexander, Environmental Law Practice Guide § 24.03, LEXIS (database updated June 2018).

[79] *Id.*

[80] *See* H.R. Rep. No. 97-835, at 20 (1982), *as reprinted in* 1982 U.S.C.C.A.N. 2807, 2861; 50 C.F.R. § 424.11(b).

[81] 16 U.S.C. § 1533(b)(6) (2012). *See also* Or. Nat. Res. Council, Inc. v. Kantor, 99 F.3d 334 (9th Cir. 1996).

[82] 16 U.S.C. § 1533(c)(2) (2012) ("The Secretary shall— (A) conduct, at least once every five years, a review of all species included in a list which is published pursuant to paragraph (1) and which is in effect at the time of such review; and (B) determine on the basis of such review whether any such species should— (i) be removed from such list; (ii) be changed in status from an endangered species to a threatened species; or(iii) be changed in status from a threatened species to an endangered species.").

[83] *See generally Delisted Species*, U.S. Fish and Wildlife Serv., https://ecos.fws.gov/ecp0/reports/delisting-report (last visited Oct. 1, 2018) (showing the reasons many species have been delisted) [hereinafter Report].

[84] *See generally Id.* (showing that sometimes a species is delisted because of a data error).

[85] *See* 16 U.S.C. § 1533 (b)(1)(B) (2012); *see also Delisting a Species: Section 4 of the Endangered Species Act,* U.S. Fish and Wildlife Serv. (2002), https://nctc.fws.gov/Pubs9/delisting.pdf.

[86] Admittedly, animals are only rarely listed due to extinction. Due to

It is difficult to determine when a species is extinct. To begin, the estimates for how often species go extinct are hardly conclusive. One estimate might say one or two species go extinct every day, while another says one every four minutes.[87] Even when a species is declared extinct, it might not be. Every year, a few species once thought to have gone extinct reappear and "offer a glimmer of hope in a glum conservation world."[88] The rediscovery of species once thought to have gone extinct spurs new interest in protecting them, lest we "lose" them again. Often the rediscovered species was brought to extinction due to human exploitation—and thus many conservationists seek to keep rediscoveries quiet—like when the Sumatran rhinoceros was rediscovered in 2013.[89] The attention some species get at being rediscovered is what can push the species over the edge into extinction, alerting hunters that the prize is still out there.[90] With species like a large pachyderm being erroneously declared extinct, declaring and delisting a species as extinct is an uncertain and risky endeavor.

It is no wonder species are wrongfully declared extinct; the science of extinction is not clear and difficult to determine. Over one-third of the mammals thought to have gone extinct were later rediscovered.[91] The current standard for declaring an animal extinct is when there is "no reasonable doubt that the last individual has died."[92] But various species have a variety of population densities, range sizes, or a species might be particularly adept at avoiding humans.[93] Such a range of behavior makes mathematical models of the probability of extinction based on sighting records troublesome.[94] However, sighting records might not be available and even if they are, just because humans have not viewed an animal and had that viewing recorded does not mean the animal is extinct.[95] In any event, quantitative methods to determine when a species is extinct are still evolving. [96]

---

budgeting and priorities it is difficult to get the Secretary to list a species, let alone delist. Meijaard, *supra* note 27, at 22.

[87] Ortiz, *supra* note 69, at 413.

[88] Meijaard, *supra* note 27, at 22.

[89] *Id*.

[90] *See Id.* The author questions whether publicizing the rediscovery of the Sumatran rhinos put the animal into the limelight, maybe even for professional rhino hunters. *Id.*

[91] Tamsin E. Lee, et al., *Extinct or still out there? Disentangling influences on extinction and rediscovery helps to clarify the fate of species on the edge*, 23 Global Change Biology 621, 621 (2017).

[92] *Id.*

[93] *See generally Id.* at 621-23 (for a discussion of the varying traits in animal species that may influence their detectability).

[94] *See Id.* at 622. "Mathematical models have been developed to assess the probability of species extinction based on dated sighting records . . .. However, often sighting records are not available." *Id.*

[95] *Id.*

[96] *See generally Id.* at 633-34 (showing the evolution of the current

Extinction is not what it used to be. Right now, several private sector organizations are actively working on bringing back several extinct species, with a possible passenger pigeon taking flight as early as 2025.[97] However, a comprehensive national legal framework for de-extinction has not yet been seriously suggested or adopted.[98] A national legal framework for the de-extinction of species is necessary to protect future resurrected species from falling back into extinction.

b. Expanding the Endangered Species Act to deal with the science is a logical progression of the Act's mandate.

The ESA fails to protect scientifically resurrected species and Lazarus species. Currently, there are two ways to get delisted from the endangered species list: recover sufficiently or go extinct.[99] Delisting is a succeed or fail proposition, where both result in decreased protections. However, as discussed above, declaring an animal extinct is not so simple.[100] Simply because an individual of a species has not been seen definitively for an extended period does not necessarily mean a species has gone extinct.[101] Rather than delisting upon a finding of "extinct," protections should continue and even expand, for many years after an "extinction" finding.

An "Extinction Species List" part of the ESA would save animals that appear to be extinct and provide protections for animals resurrected by science. Lazarus species and scientifically resurrected species have unique challenges with the ESA,[102] and both challenges could be addressed by a single solution: expansion of protections after a finding of extinction. Lazarus species would benefit from increased protection after an initial finding of "extinct" by not being delisted and

---

quantitative methods).

[97] *Progress to Date,* Revive and Restore, https://reviverestore.org/projects/the-great-passenger-pigeon-comeback/progress-to-date/ (last visited Oct. 1, 2018).

[98] *See* Erin Okuno*, Frankenstein's Mammoth: Anticipating the Global Legal Framework for De-Extinction*, 43 Ecology L.Q. 581, 584 (2016) (Previous authors have suggested international legal frameworks for handling the de-extinction of animals and considerations of the intellectual property implications abound).

[99] Report, *supra* note 76.

[100] Tamsin, *supra* note 82, at 621.

[101] *Id.*

[102] Louis Jacobson, *Only 1 Percent of Endangered Species List Have Been Taken off List, says Cynthia Lummis*, Politifact: Truth-O-Meter (Sep. 3, 2013), http://www.politifact.com/truth-o-meter/statements/2013/sep/03/cynthia-lummis/endangered-species-act-percent-taken-off-list/ (Classically extinct species like the passenger pigeon and the heath hen do not currently have a "critical habitat" because they do not have a habitat, and thus cannot fit the criteria necessary for ESA protection, nevertheless they are good candidates for de-extinction because they did have critical habitat and would benefit that habitat by reintroduction).

thus left unprotected. Scientifically resurrected species would benefit by getting protections and a chance to fly or fumble.

An "extinction list" would call for the continued protection of habitats for extinction species, deep-habitat studies to determine if the animal is indeed extinct, and a grace period before final delisting due to being extinct; additionally, only animals which benefit the ecosystem should get the benefit of enhanced protection. If an animal is delisted as extinct when it is not extinct, and the protections afforded to its habitat are removed, then any surviving individuals may have their fate sealed. By continuing to protect the critical habitat of animals initially found to be extinct, while population studies are undertaken, a better scientific conclusion of "extinct" can be made.

To that end, scientists should conduct deep-habitat population studies and habitat studies to determine whether or not the species is extinct,[103] if it has a sufficient population able to recover, and what further protections might be necessary for the species to recover.[104] Each species facing extinction is subject to unique external and internal pressures; to adequately pull Lazarus species back from the brink, scientific findings need to identify those strains and determine the protections that are necessary to lift the burdens off the species.[105] Through these studies, scientists should be able to determine if the species meets the suggested criteria detailed below for the up-listing of a species from extinct to endangered.

Lastly, a grace period between down-listed to extinct and delisted as extinct is necessary. Habitat studies take time, population studies take time, and animals are astonishingly good at staying away from humans. By delisting species after a finding of extinct, any unknown yet enduring individuals are not given leeway to rebound. After an initial finding of extinction, a grace period of more than 25 years for study and research before a conclusion of extinct can be determined. In other words, if an animal is initially found to be extinct and downlisted from "endangered" to "extinct" an agency or organization seeking to delist the animal would have to wait for all the delisting steps to be completed, including populations and habitat studies and the grace period, before a final finding of "extinct," and accompanying delisting, can be determined.

Only scientifically resurrected species which benefit the stability of the ecosystem should be given enhanced protection.[106] Such

---

[103] *See* Tamsin, *supra* note 82, at 625 (describing a method of scientifically studying populations to determine true extinction rates and likelihood of resurfacing).

[104] Philip J. Seddon et al., *Reintroducing resurrected species: Selecting DeExtinction Candidates*, 29 Trends in Ecology and Evolution 140, 140-47 (2014).

[105] *Id.*

[106] *Id.* at 141.

a requirement would exclude animals which cannot be reintroduced due to habitat destruction, animals which are invasive, and animals that would destabilize the ecosystem by pushing out animals that have filled the niche of the proposed species for reintroduction.[107] In essence, Aldo Leopold's land ethic should be a guiding principle: If a thing is right for the biotic community, it should be done. If it would harm the biotic community, it should be avoided.[108] Reintroducing only animals which will stabilize a biotic community will serve two functions: 1. pre-existing section factors will once again have force on the ecosystem and 2. other animals at risk of extinction will benefit from the restored and stabilized ecosystem and perhaps be pulled back from the brink.[109]

c. "Extinct Listed" animals will need criteria to be up-listed to the endangered list.

If the ESA were expanded to protect extinct species, Lazarus species, and de-extinct species, then a mechanism and criteria must exist to move animals off the "extinct" list to the "endangered" list. As part of the scientific research mentioned above to determine a final finding of "extinct," scientists would use the criteria below to determine if the species is extinct or if the species can be up-listed back to endangered.

After a population has been reintroduced, the species must be able to thrive in a scientifically sound manner, free of scientific meddling. Criteria to up-list from "extinct" to "endangered" may include the (1) ability to exercise normal breeding and life-cycle processes, (2) sufficient population to flourish, and (3) full reintroduction into the natural habitat with no further constant scientific meddling.[110]

A species should be able to engage in normal life cycle behaviors to up-list from extinct to endangered. This requirement would be particularly important for migratory species and species which have had their natural life cycle processes, like nesting sites, be a target for human poaching and hunting.[111] In theory, an "extinct" list would protect important life cycle spots like migratory nesting sites or breeding cycles. In order to up-list a species from extinct to endangered, the species should be able to continue their life cycle processes unfettered by human encroachment. For example, a population of night parrots

[107] *Id.* at 143.

[108] Leopold, *supra* note 53, at 201.

[109] Seddon, *supra* note 102, at 141.

[110] IUCN—SSC Species Conservation Planning Sub-Committee, *Guidelines for Species Conservation Planning* 15-18 (2017) https://portals.iucn.org/library/sites/library/files/documents/2017-065.pdf.

[111] For example, one nesting of passenger pigeons in 1878 resulted in a massacre of an estimated 1 billion birds being killed or wasted. Cokinos, *supra* note 10, at 221.

was found in Western Australia.[112] Night parrots were thought to be extinct for around 100 years, about as long as passenger pigeons.[113] If there was an extinct list, the night parrots would be on it and subject to greater protections. For the parrot to move from the "extinct" list up to the "endangered" list, and thus have slightly less stringent protections, the moving organization would have to prove that the parrots would be able to continue to exercise their normal life cycle behaviors if up-listed to the endangered species list.

The species should have a sufficient population to be able to flourish. An animal resurrected by science or a Lazarus species should be able to have enough genetic diversity in the population to be free of dangerous inbreeding and genetic bottlenecking. To up-list a species from extinct to endangered without a sufficient population to avoid dangerous inbreeding and bottlenecking sets the species up for failure, and arguably cannot complete normal life cycle behaviors as inbreeding is not usually a typical life cycle behavior. A species should be in a position to flourish beyond a small family group. Without genetic diversity, the population may as well continue to be thought of as extinct.

The reintroduced species must be one which has an actual chance at survival without constant scientific meddling; otherwise, the species will not be a force of stabilization in the habitat. If an animal is to be "reintroduced" it must be able to sustain itself off of the environment it was created to stabilize.[114] If an animal needs constant reproduction intervention, medical help, and food provided to it, it cannot be truly "reintroduced." Further, if an animal is fulfilling the niche it was created to fill, it would survive within that niche.[115]

If the scientists who resurrected a species or found a Lazarus species must continue to meddle with the species to ensure its survival, the species cannot properly be up-listed from extinct to endangered. A self-sufficiency requirement is necessary because a species which cannot support itself and would be extinct but for the intervention of scientists cannot truly be "un-extinct." If the moment caretakers cease ensuring the animal's survival would result in the animal lurking back into nonexistence, an animal should not be up-listed from an "extinct" list to "endangered."

---

[112] Calla Wahlquist, *Night parrot sighting confirmed in Western Australia for first time in 100 years*, The Guardian (Mar. 23, 2017, 01.46 PM), https://www.theguardian.com/environment/2017/mar/23/night-parrot-sighting-confirmed-in-western-australia-for-first-time-in-100-years.

[113] *Id.*

[114] Seddon, *supra* note 102, at 143.

[115] *Id.*

For scientifically resurrected species, the "extinct list" would serve as a sort of species testing ground. The list would allow a test-drive of the species against the wild selection factors, and in order to be considered "not extinct," but "endangered," the species would need to have proven itself viable. Only after the animal *has* been scientifically resurrected, *has* been reintroduced into the habitat, and is subject to the selection factors in the habitat, away from the safety of the lab, can it be available for uplisting to "endangered."

IV. The Reintroduction of the Passenger Pigeon

a. Passenger pigeons are making a comeback, at least superficially.

Revive & Restore is actively working toward bringing passenger pigeons back, with a possible wild introduction as early as 2032.[116] However, the passenger pigeon currently being created is not quite the passenger pigeon that existed prior to 1914.[117] The team at Revive & Restore is using a genetic base of a band-tailed pigeon and recreating the phenotypes of passenger pigeons.[118] The new bird will have passenger pigeon DNA, but its genome will resemble that of a band-tailed pigeon.[119] Editing the phenotypes of band-tailed pigeons may only take a few hundred mutations to appear as a passenger pigeon, but the life histories of these two birds are vastly different.[120]

Band-tailed pigeons are not as social as passenger pigeons were.[121] Passenger pigeons thrived in vast flocks numbering in the millions;[122] whereas band-tailed pigeons are largely independent.[123] Band-tailed pigeons nest in small, loose colonies; passenger pigeons nested by the millions.[124] Unlike the migratory wandering passengers pigeons, band-tailed pigeons are not particularly nomadic.[125] Both feed

---

[116] Roadmap, *supra* note 19.

[117] Conversation, *supra* note 16.

[118] *Id.*

[119] *Id.*

[120] *Id.*

[121] *Id.*

[122] Errol Fuller, The Passenger Pigeon 56 (2015) (noting the variety of estimates and glaring inadequacies). Suffice to say, the bird was vast enough in a flock to blot out the sky and sound like thunder. A single flock likely contained several million birds, but no one knew or will know for certain.

[123] Conversation, *supra* note 16.

[124] *Band-tailed Pigeon*, Audubon, http://www.audubon.org/field-guide/bird/band-tailed-pigeon (last visited Apr. 24, 2017) [hereinafter *Band-tailed*]; Fuller, *supra* note 108, at 38.

[125] *Id.*

primarily on tree nuts, seeds, and berries.[126] Both act as disturbance selection forces and both are rather large species of pigeons.[127] For every similarity there is an important difference, and the differences tend toward the importance of passenger pigeons and why they went extinct. It was the number of individuals in the flocks and nesting sites that made the passenger pigeon an easy target for hunters.[128] Perhaps the sheer vastness of passengers is the reason why they no longer grace the sky of the east, but anyone can stumble onto a band-tailed pigeon in the west.

In any event, the bird Revive & Restore is creating is not a passenger pigeon. Revive & Restore is working toward creating a bird that is identical in physical appearance to a passenger pigeon.[129] On the genetic level, the new passenger will be a hybrid. Currently, hybrid species are not protected by the Endangered Species Act.[130] Therefore, if Revive & Restore does successfully reintroduce a bird which looks and functions like a passenger pigeon, but will be genetically a hybrid of a passenger pigeon and a band-tailed pigeon, its legal status will not be clear.[131] Further, if most or all species which are scientifically resurrected are genetic hybrids, then the ESA must accommodate the problem of mixed genetics.[132] One possibility, which is the easiest to implement and aligns with the policy of the Endangered Species Act, is to grant the hybrid the most endangered status of the two "parent" species.[133]

Such an approach would mean that the new passenger pigeons would get either the common status of band-tailed pigeons or the extinct status of passenger pigeons. If no hybrid protection scheme were implemented along with an Extinction List suggested above, passenger pigeons as a hybrid would receive no protection as a common band-tailed pigeon, an extinct passenger pigeon, or a hybrid of the two. The

---

[126] Band-tailed, *supra* note 110; Fuller, *supra* note 108, at 33-34.

[127] Novak, *supra* note 3, at 37-38.

[128] Fuller, *supra* note 108, at 52.

[129] Conversation, *supra* note 16.

[130] Robert K. Wayne & H. Bradley Shaffer, *Hybridization and endangered species protection in the molecular era*, 25 Molecular Ecology 2680 (2016).

[131] *Id.*

[132] *See* Stuart Wolpert, *Should the Gray Wolf Keep its Endangered Species Protection?*, UCLA Newsroom, (Jul. 27, 2016) http://newsroom.ucla.edu/releases/should-the-gray-wolf-keep-its-endangered-species-protection (The problem of hybrids is currently being fought in a war over various wolf species and how to list the minor differences of speciation in wolves.); Wayne *supra* note 115, at 2690.

[133] IUCN, IUCN SSC Guiding Principles on Creating Proxies of Extinct Species for Conservation Benefit (May 18, 2016), https://portals.iucn.org/library/sites/library/files/documents/Rep-2016-009.pdf (The IUCN has a policy and scientific scheme for determining the scientific and legal ramifications of reintroduction. Though no clear answers are presented for the legal problems, the policy statement highlights the legal holes for scientifically resurrected species.).

new passenger pigeon would be born into an uncertain world of legal speciation and murky protection.

The passenger pigeon, as an extinct species, has no home range and thus no critical habitat for Endangered Species Act protection. One of the biggest difficulties in protecting a scientifically resurrected species is classifying its critical habitat. Passengers have been extinct in the wild for well over a hundred years, and any new passenger would not, in a literal sense, have an indigenous range.[134] The listing of a species to the endangered and threatened species list requires the establishment of that species' critical habitat for protection.[135] A solution to the critical habitat problem might be to protect the species on the basis of risks of extinction throughout its historical natural range until a stabilized reintroduction range can be determined. Passengers had a natural range that included most of the Eastern North American continent, for practicalities sake the guidelines would have to designate a portion of the native range for a successful reintroduction.

The legal status of a new passenger pigeon is unclear in every way. The new bird might be unprotected as common, extinct, or hybrid; it might be considered invasive and thus illegal to release in many states; [136] it will not have a natural home range, lest it is granted its historical range or at least a portion of it. One thing is clear, the legal status of scientifically resurrected species will need to be fleshed out, and amendments to the Endangered Species Act, such as the introduction of an "Extinct List", will be necessary to clearly define the status of these new species.

b. Passenger pigeons are the prime example of the need for a scientifically up-to-date Endangered Species Act.

Because an effort to create a new passenger pigeon species is well underway, new passengers may be the first species to be bred

[134] *Id*. Reintroducing an extinct species into its original home-range might raise concerns about invasive species and whether or not the reintroduction amounts to letting loose common starlings. This concern is easily countered with the proposed extinct list only listing species for protection which will benefit the ecosystem and provide greater stability. Nevertheless, the ethical considerations about whether a scientifically resurrected species is an invasive species is a legitimate concern and should be examined closely by the scientific community

[135] Cheever, *supra* note 65, at 6 ("The recovery planning section of the Endangered Species Act is fundamentally different from the better known sections of the Act: section 7, which prohibits the federal government from funding, authorizing, or carrying out any action that might jeopardize the continued existence of any endangered or threatened species, or destroying or adversely modifying designated critical habitat.").

[136] Some states do not allow the release of non-native species; whether or not the scientifically resurrected species will fit this title is unclear.

into an unclear legal status with vague protections.[137] With captive breeding estimated to begin by 2022, and a restoration possible as early as 2028,[138] the law will be confronted with the latest in genetic and ecological science. If the law fails to devise a system for protecting de-extinct animals and defining a legal status for them, the species will likely slip back into oblivion. Further, because passenger pigeons were a selection factor on the Eastern North American continent, the re-filling of the ecological hole they left is vital for the purpose of the Endangered Species Act: protect critical habitats and keep species from going extinct. The twin posts of scientific inevitability and ecological stability require the legal system to adapt.

Passenger pigeons will deserve protection under a new legal status with accompanied legal protections because they will be a positive ecological selection force. Reintroduction of the passenger pigeon will, in time, exert a major selection factor throughout the Midwest and Eastern states that has been missing for 100 years. Passenger pigeons were necessary to the Holocene migration of nut trees.[139] During the abundance of passenger pigeons, disturbance regimes of tree reproduction were heavily favored.[140] Indeed, native species of disturbance-dependent plants and animals dominated the North American landscape. [141] Further, and most importantly, the cascading ecological benefits to post-disturbance ecosystems support biodiversity and stability of other birds, reptiles, amphibians, and other mammals. [142] The reintroduction of passengers would stabilize the gaping ecological hole that they left in the wake of their extinction.

The hardest criteria for passenger pigeons to meet is the ability to thrive in their natural habitat. The numbers required for a self-sufficient breeding population are not known due to the population crash and instability and safety of their nesting sites as they tumbled into extinction.[143] An animal that thrived best in flocks of millions of individuals will likely need a very substantial population to be successfully reintroduced, and the data does not exist to support what the stable population would need to be. However, the habitat is still available for the birds. Large swaths of the Midwest and the Eastern

---

[137] *The Great Passenger Pigeon Comeback,* Revive and Restore, http://reviverestore.org/projects/the-great-passenger-pigeon-comeback/ (last visited Apr. 24, 2017).

[138] Roadmap, *supra* note 19.

[139] Sara L. Webb, *Potential Role of Passenger Pigeons and Other Vertebrates in the Rapid Holocene Migrations of Nut Trees*, 26 Quarternary Research 367, 367-69 (1986).

[140] Novak, *supra* note 3, at 34.

[141] *Id.*

[142] *Id.* at 35.

[143] Conversation, *supra* note 20.

United States are still suitable for passenger pigeons to live. Their habitat is not destroyed. Thus it is possible and practicable to reintroduce test populations in what could be designated, for Endangered Species Act purposes, as critical habitat.

Further, passenger pigeons are more likely to succeed in reintroduction than other more "cultural" animals. A good test species would be one which does not entirely rely on being taught by parents on "how to be." For example, elephants, orcas, and other large-brained cultural animals, if genetically reengineered and reintroduced are not necessarily likely to behave as their original "natural" counterparts. A smaller and arguably simpler animal like a passenger pigeon may rely more on instinct and natural imperatives than relevant social cues and generations of cultural development as seen in larger mammals. While, again, the wild behavior of a genetically reengineered pigeon is not certain to be any more a passenger pigeon than a bigger more acorn-centric band-tailed pigeon, the odds of success are greater, and this unknowable will be known by the time of up-listing.

If the purpose of the Endangered Species Act is to protect animals from extinction, animals are currently well on their way to becoming de-extinct via science, and animals will stabilize the ecosystems, then the Endangered Species Act must be amended to legally recognize these new species and protect them until they meet the criteria of "endangered" or "threatened." The framework proposed here is by no means the only option, but it is an opening to the conversation that needs to happen. Passenger pigeons are the illustrative example because their extinction was the first massive extinction which solidified the fact that humans can exert an enormous extinction level event. Scientists are actively working toward a new passenger pigeon species and they will exert a stabilizing force on their natural habitat. Passenger pigeons are an ideal test candidate for a new legal status and system of protections.

V. Hoping For Things With Feathers

After passenger pigeons became extinct, many people hypothesized that they had not gone extinct in the wild due to the avarice of man, but had perhaps departed westward or south.[144] Conjecture about the wild passenger pigeon continued for years.[145] The strange hope that somewhere there is a long-lost animal is as real then as it is now. Recently, the rarest species of wild dog was found after over fifty years of no documented sightings.[146] Additionally, the night parrots recently

[144] Greenberg, *supra* note 1, at 190.

[145] *Id.* at 190-91.

[146] Alexandra E. Petri, *'Extinct' Mountain Dogs Rediscovered in the Wild*, National Geographic (Mar.31, 2017), http://news.nationalgeographic.com/2017/03/

rediscovered were thought to be extinct for over a hundred years.[147] There is something hopeful to the thought that a few escaped the brutal hands of man. Human beings are considered by some to be the sixth mass extinction, destroying biodiversity every bit as drastically as the past five massive extinction events.[148] As we continue to be a punishing selective factor, driving species to extinction, we must commit to aggressive measures to stabilize the ecosystems we are straining.

The hope for a wild passenger pigeon as they once existed is a fantasy. The likelihood of a wild passenger pigeon still living somewhere beyond our reach, maybe deep in the woods of Northern Michigan or Southern Canada is beyond infinitesimal. The hope for the future of feathered things lies not in the thought that one day—maybe—if we look up we will see a passenger pigeon, but maybe we can make one that will benefit the earth as much. Passenger pigeons are not wooly mammoths. Large charismatic and oft cartooned mammals capture imagination and fondness of the public more than a small bird of no great beauty nor personality. It is a hard sell to protect the mundane in the name of helping stabilize the environment.[149] But, no species lives in isolation. Protecting the mundane sustains ecosystems and pulls the entire biotic community back from the brink.[150]

The hope for the future of feathered things lies in science and the law. Science is the poetry in operation that is bringing species back from extinction, and law is a restraint on humans to protect us from ourselves. The uncertain legal status and legal protections for species, which are scientifically resurrected, must be addressed before the first passenger pigeon takes flight, lest we once again find ourselves grieving for the passenger.

---

new-guinea-dogs-found-extinct-pictures-animals/.

147 Wahlquist, *supra* note 109.

148 Telmo Pievani, *The sixth mass extinction: Anthropocene and the human impact on biodiversity*, 25 Rendiconti Lincei 85, 90 (2014).

149 E.A. MacDonald et al., *Conservation Inequality and the Charismatic Cat: Felis Felicis*, 3 Global Ecology and Conservation 851, 851-52 (2015).

150 *See generally* Zoe Glas, *Uninteresting, Strange, or Ugly: Protecting non-charismatic species*, Purdue Extension: Forestry and Natural Resources: Got Nature? Blog (Aug. 4, 2016), https://www.purdue.edu/fnr/extension/blog/2016/08/04/uninteresting-strange-or-ugly-protecting-non-charismatic-species/.

What Airlines Won't Tell You, What Animals Can't Tell You: The Welfare and Legislation of Air Transport of Pets

Nianet Carrasquillo Mejias

I. Introduction

Before the era of airplanes in the late thirties, the transportation of animals was possible only by road, rail, or sea.[1] At the time, most animals being transported were farm animals.[2] Animals considered as pets were mainly kept at home and would seldom experience transportation.[3] However, the transportation of pets changed as airplanes became more common and the airlines' acceptance of pets made possible a new method of transport.

The number of pets transported by air has increased over time and is expected to continue to rise as the number of people traveling grows.[4] The relatively affordable price of air travel has also contributed to this growth. Moreover, the recent emergence of pet-friendly establishments and locales might also be a contributing factor to this growth.[5] This new concept has made it possible to include our pets in our daily outings. The idea quickly expanded to the global hotel industry, providing pet owners an opportunity to bring pets on vacation.[6] Consequently, pets went from being kept in the yard to becoming part of their owners' leisurely trips.

The continuing increase in the air transport of pets makes it crucial to assess the effects of this method of transport on the health and well-being of the animals. Few investigations concerning the welfare of companion animals during air transport have been conducted. Most of the information available on the welfare of animals during transport is focused on road transportation of farm animals. Many of the investigations into the welfare of farm animals during transport

[1] Gerald Hanneman, *Factors Related to the Welfare of Animals During Transport by Commercial Aircraft*, Fed. Aviation Admin., Okla. City (May 1981), https://www.faa.gov/data_research/research/med_humanfacs/oamtechreports/1980s/media/AM81-11.pdf.

[2] Michael C. Appleby et al., Long Distance Transport and Welfare of Farm Animals 69 (CABI ed., 2008) [hereinafter Farm Animals].

[3] Froma Walsh, *Human-Animal Bonds I: The Relational Significance of Companion Animals*, Family Process 462, 462 (2009).

[4] D. B. Adams, *Transportation of animals and welfare*, 13(1) Rev. Sci. Tech. Off. Int. Epizootics 153, 153 (1994).

[5] *The Rise (and Rise!) of Pet Friendly Venues*, All Four Paws (2017), https://www.allfourpaws.co.uk/dog/rise-rise-pet-friendly-venues/.

[6] *Id*.

indicate that transport negatively impacts the health and well-being of the animals. However, little is known about the short and long-term consequences of air transport of our companion animals. This paper employs a widely-used welfare assessment method, commonly used to investigate the transportation of farm animals, known as the five freedoms, and will apply it to companion animals to show what they endure during air transport. This assessment will show how air transport affects the welfare of companion animals and why their safety is at risk.

Despite media coverage of pet fatalities during air transport, it seems society remains indifferent to the possible outcomes resulting from air transport. Since many owners are unable to observe the conditions in which their pets are being transported, they cannot properly determine how air transport impacts their pets. To better understand the implications of air transport on an animal, this paper exposes the unsafe conditions in which most pets are transported in commercial airplanes.

The next part of this paper will focus entirely on the legal implications of air transport and how it has failed to improve conditions of air transport and the welfare of companion animals. To begin, this part will explain the laws that govern the air transport of pets in the United States of America and Europe, and will follow with a comparison of each countries' welfare standards for the air transport of pets. Several lawsuits against airlines in the United States and abroad will be discussed to understand the legal status of animals and its impact on the air transport of pets. Lastly, the paper discusses several policies established by U.S. carriers and non-U.S. carriers, and how these policies neglect to consider the welfare of the animal.

II. Conditions of Transport

Many misconceptions exist about the conditions in which animals are carried inside an airplane. To this day, commercial airplanes do not provide suitable conditions that ensure the safety of every animal transported. This section of the paper will depict the ambient conditions inside the cargo compartment of commercial airplanes.

The conditions in the cargo compartment of commercial airplanes are not constant; they vary depending on three factors: 1) outside temperature; 2) humidity; and 3) carbon dioxide concentration.[7] An extreme variation on any of these factors can cause conditions to escalate to a point in which the welfare and safety of the animal is compromised.[8] However, other factors can also influence the ambient conditions in the cargo compartment, such as the type and number of

[7] Le Luong, *Safe Transport of Live Animal Cargo*, AERO 17 (2012).

[8] *Id.*

animals being transported.[9] When so many factors play a role in the conditions of the cargo compartments, it is nearly impossible to provide a steady and safe environment for the different animals that are being transported. These variable conditions inside the cargo compartment are unable to satisfy the needs of animals with different physiology, since the optimal environmental conditions vary by animal species.[10] While some animals can tolerate higher levels of humidity, others cannot.[11] Overweight animals, or animals with short noses, may need better ventilation than animals without these characteristics.[12] Each individual animal differs in their tolerance levels for certain temperatures and humidity percentages.[13] A long-haired animal would be more easily affected by high temperatures than short or hairless animals.[14] Therefore, appropriate environmental conditions are imperative to prevent harmful consequences to the animals.

a. Types of Commercial Airplanes

Companion animals are transported in three different ways inside an airplane.[15] First, the animal can be transported inside the main cabin with the rest of the passengers, usually stowed under the owner's seat.[16] Second, the animal can be transported as a "checked bag" in the cargo compartment among other luggage, but still inside the same airplane as the owner and other passengers.[17] Third, the animal can be transported inside an all-cargo airplane, which is a completely separate flight from the owner.[18]

Airlines use different types of airplanes to transport animals: regional jets, single-aisle jets, small-medium twin aisle jets, and large twin aisle jets.[19] The main difference between these airplanes is their passenger and cargo compartment capacity.[20] Regional jets are small

---

[9] *Id.* at 18, 20.

[10] *Id.* at 18.

[11] *Id.*

[12] Carey Hemmelgarn & Kristi Gannon, *Heatstroke: Thermoregulation, Pathophysiology, and Predisposing Factors*, 37 Compendium E1-E6 (July 2013).

[13] Le Luong, *supra* note 7.

[14] *Id.*

[15] *International Travel with Your Pet*, Ctr. for Disease Control (Jul. 19, 2017), https://www.cdc.gov/features/travelwithpets/index.html.

[16] *Id.*

[17] *Id.*

[18] *Id.*

[19] Greg Pittelkow, *Air Transport*, Nat'l Aeronautical Charting Office 4-7 (2014), http://nas-sites.org/ilar-roundtable/files/2014/09/PITTELKOW-ILAR-Transport-2014.pdf.

[20] *Id.* at 4-7.

planes with small cargo compartments, so their ability to transport animals is often impossible or extremely limited.[21] The single-aisle jets are known as the workhorses of most airlines, and can accept small shipments of animals.[22] The small-medium twin aisle jets and large twin aisle jets are bigger planes that can accept small-medium sized shipments of animals under certain limited conditions.[23] Some airlines have chosen to cease the transport of animals in select aircrafts.[24] For example, Delta Airlines has stated that animals will not be accepted as checked baggage or cargo on any Delta-operated 767 aircraft, nor will Delta accept animals as checked baggage on any Airbus 330.14.[25]

A single aircraft can possess both pressurized and unpressurized compartments.[26] While some airplanes have multiple compartments, not every compartment is able to transport animals.[27] Compartments that transport animals are typically pressurized.[28] However, precaution must be taken when loading animals into aircrafts with multiple compartments to ensure they are placed in the correct compartment. Animals have fallen ill after being placed in the wrong compartment by ground handlers.[29] Because the conditions of animals traveling inside the passenger cabin are known, a detailed discussion of the conditions in the cargo compartments will follow.

b. Cargo Compartments

An aircraft's cargo compartment determines its ability to transport animals.[30] There are two types of cargo compartments that can transport animals: class C compartments and class D compartments.[31] Most animals travel inside the class D cargo compartment.[32] Conditions on each airplane's compartments are different and can vary between aircrafts.[33] Imperative in understanding the layout of these compartments is the fact that they were designed based on fire safety concerns—or in

[21] *Id.* at 4.

[22] *Id.* at 5.

[23] *Id.* at 6-7.

[24] *Pet Travel Requirements & Restrictions*, Delta Airlines, https://www.delta.com/content/www/en_US/traveling-with-us/special-travel-needs/pets/pet-requirements-restrictions.html (last visited Feb. 5, 2018).

[25] *Id.*

[26] Pittelkow, *supra* note 19, at 16.

[27] Hanneman, *supra* note 1.

[28] Pittelkow, *supra* note 19, at 16.

[29] Where is Jack?, Inc., Inventory-Redacted Pet Incident Reports Issued May 2005—November 2016 4 (2016).

[30] Pittelkow, *supra* note 19.

[31] Hanneman, *supra* note 1.

[32] *Id.* at 5.

[33] *Id.* at 6.

other words, constructed to prevent the spread of fire to the rest of the plane.[34] For this reason, ventilation and the amount of oxygen in these compartments is very limited.[35] Class C compartments have a built-in fire-extinguishing system controllable from the pilot cabin, and is accessible by the crew during flight.[36] Meanwhile, class D compartments do not contain a fire-extinguishing system and are not accessible by the crew during flight.[37] Due to the lack of any fire-extinguishing system in class D compartments, a fire would likely cause the animals inside to succumb to smoke or flames. Class C compartments are only found in large, wide-bodied aircrafts, while class D compartments are in every airplane.[38]

c. Ventilation

Ventilation and air conditioning systems in cargo compartments vary dramatically; in fact, some cargo compartments have no air conditioning or ventilation, while other cargo compartments have elaborate systems capable of maintaining specific temperatures.[39] Ventilation and air conditioning systems are powered by the plane's engines.[40] Therefore, these systems are not running while the aircraft is stationary on the ground.[41] The ventilation in these compartments depends on the air flow leaking out from other compartments when the other compartments are pressurized.[42] Both class C and class D compartments are pressurized before take-off, but their pressure depends on the air flowing from other compartments with positive pressure.[43] While ventilation in these compartments is kept to a minimum due to fire safety concerns, the available air flow could be reduced even more by the volume of animals and inanimate cargo carried inside.[44] The more animals inside the compartment, the more carbon dioxide is being produced and more oxygen is being needed.[45] Therefore, the size of the compartment should determine the amount of animals allowed in it to

[34] *Id.* at 4.
[35] *Id.* at 5.
[36] *Class C and D Cargo Compartment Regulations*, Fed. Aviation Admin., http://lessonslearned.faa.gov/ValuJetDC9/ClassC-Dregulations.pdf (last visited Feb. 5, 2018).
[37] *Id.*
[38] Pittelkow, *supra* note 19, at 22.
[39] *Id.* at 17.
[40] *Id.* at 20.
[41] Hanneman, *supra* note 1, at 5.
[42] *Id.*
[43] *Id.*
[44] Le Luong, *supra* note 7, at 20.
[45] *Id.* at 21.

properly preserve the air volume.[46] Additionally, the arrangement of the animals' crates can affect the air availability in the compartment.[47] To maximize the air flow, distribution of the cargo load should be precisely distributed to allot for enough space between the crates.[48] A typical arrangement is one where inanimate luggage is placed in between the animal crates so the load of animal creates is spread evenly between the forward and furthest area of the plane.[49]

d. Temperature

Just as with ventilation, the number of animals affects the temperature inside the compartment. The more animals in the compartment, the more heat that is produced. All cargo compartments are minimally heated to prevent freezing of luggage and cargo.[50] Temperatures inside both cargo compartments can vary from near freezing to 130°F, depending on the time of year.[51] In 1981, an investigation performed by the Federal Aviation Administration (FAA) on factors related to the welfare of animals during transport by commercial aircraft found that heat was, at that time, the most common environmental factor causing death to animals.[52] The report included the story of a dog who was shipped on a hot, humid day and was confined in a near air-tight compartment with added heat from non-animal cargo.[53] Animals subjected to this type of heat stress are unable to maintain their normal body temperature by panting.[54] Therefore, the result may be death by heat exhaustion. Temperature inside cargo compartments is not regulated or controlled, and is strictly dependent on the ambient air temperature and the inanimate cargo.[55] If inanimate cargo sits in the sun before being loaded onto the aircraft, the temperature inside the cargo compartment increases.[56] Extreme temperatures inside cargo compartments have caused the deaths of animals due to heat stroke and hypothermia.[57] According to an airplane manufacturer's technical data, in-flight temperature ranges from 35°F-100°F in most class D cargo compartments.[58]

---

[46] *Id.* at 20.
[47] *Id.* at 23.
[48] *Id.* at 22.
[49] *Id.*
[50] Pittelkow, *supra* note 19, at 17.
[51] Hanneman, *supra* note 1, at 5.
[52] *Id.*
[53] *Id.*
[54] *Id.*
[55] *Id.*
[56] *Id.*
[57] *Id.*
[58] *Id.*

e. Pressure, Noise, and Light

The cargo compartments on all jet aircrafts are pressurized.[59] However, airplanes have other compartments, besides the cargo compartments, which are not pressurized.[60] If an animal is placed in such a compartment, it can be potentially fatal.[61] Noise in the cargo compartment is produced by the aircraft engines, and the noise level is highest during take-off.[62] The noise level of cargo compartments ranges between 87dB and 105dB.[63] Most cargo compartments are not equipped with a lighting system; however, those that have a lighting system are controlled by the crew.[64] Therefore, most animals travel in a dark environment. The conditions animals travel in affect their welfare, but the conditions of flight are not the only reasons the health and well-being of the animals is compromised.

III. Animal Welfare

Every time companion animals are transported inside a commercial plane, their welfare is being negatively impacted. The extent of the impact on their well-being depends on the environmental conditions in which the animal is being transported in, the requirements established by air carriers, and the various steps involved in the process of transport. Transport is not a single stressor; it involves changes to the whole environment of the animal and is characterized by exerting many restrictions on the animal.[65]

Animal welfare is most commonly defined as the actual state of an animal in its attempts to cope with its environment.[66] Animal welfare involves several elements, such as animal health (body), animal feeling (mind), and behavior (nature) of the animal.[67] The welfare of an animal can range from poor to good.[68] Today, scientists are developing new ways to assess the welfare of animals.[69] To better understand how air transport affects the welfare of an animal, the process of transport from the perspective of an animal provides great insight.

---

[59] Pittelkow, *supra* note 19, at 16.

[60] *Id.*

[61] John Levinson, *Flying High Unpressurized*, Plane and Pilot (2016), http://www.planeandpilotmag.com/article/flying-high-unpressurized/#.WrnQ8sPwbIU.

[62] Hanneman, *supra* note 1, at 6.

[63] *Id.*

[64] *Id.*

[65] Farm Animals, *supra* note 2, at 69.

[66] D. M. Broom & A. F. Fraser, Domestic Animal Behaviour and Welfare 14 (CABI ed., 5th ed., 2011).

[67] *Id.*

[68] *Id.*

[69] *Id.*

In the sixties, an assessment known as the five freedoms was created to help farm producers improve welfare practices.[70] This concept became recognized as the first animal welfare assessment[71] and this paper will apply the five freedoms to companion animals that experience air transport. The five freedoms are: 1) freedom from hunger and thirst; 2) freedom from fear and distress; 3) freedom from discomfort; 4) freedom from pain, injury, and disease; and 5) freedom to express normal behavior.[72] An animal that is able to express normal behavior, is in good health, and is not suffering is considered to have a good animal welfare.[73] A detailed discussion of how each of the five freedoms affect animals in transport will follow.

a. Freedom from Hunger and Thirst

One of the many things restricted during air transport of animals is food intake.[74] Many globally-renowned animal protection organizations, such as the American Veterinary Medical Association, American Humane Association, Humane Society of the United States, and the American Society for the Prevention of Cruelty to Animals, recommend that pets fly with an empty or nearly empty stomach.[75] These groups allege the purpose of food restriction is to decrease the possibilities of nausea or motion sickness, but there is insufficient scientific evidence to prove this.[76] Additionally, studies have shown that animals will not eat or drink while being transported, primarily as a response to stress.[77] Consequently, most pets traveling will do so in a fasting state.[78]

The effects of food and water deprivation during transport have been researched in many farm animals.[79] Caloric and water requirements vary between species, and multiple factors such as age, weight, behavior, and ambient conditions can adversely affect the physiological needs of each species.[80] These factors can worsen during the duration of transport,

---

[70] Farm Animals, *supra* note 2, at 3.

[71] *Id.*

[72] *Id.* at 360.

[73] Broom, *supra* note 66, at 14.

[74] Adams, *supra* note 4, at 159.

[75] *See General Container Requirements for Pet Animals, Farm Livestock and Farmed Deer or Antelope*, IATA (Jan. 2018) [hereinafter IATA], https://www.iata.org/whatwedo/cargo/live-animals/Documents/pet-container-requirements.pdf; *Traveling with Your Pet FAQ*, AVCA (June 2016), https://www.avma.org/public/PetCare/Pages/Traveling-with-Your-Pet-FAQs.aspx.

[76] *Guidelines for the Humane Transportation of Research Animals*, Nat'l Research Council 54 (2006) [hereinafter *Guidelines*].

[77] *Id.*

[78] *Id.*

[79] *Id.*

[80] *Id.*

as longer journeys tend to require more energy expenditure.[81] Providing food during short journeys may not be necessary, in contrast to longer journeys, where it may be needed. Studies performed on horses and cattle showed they can go up to twenty-four hours without showing physiological signs of dehydration or physical fatigue that may affect their welfare.[82] On the other hand, sheep become very desperate to eat after only twelve hours without food.[83] However, pigs transported for eight hours ate and drank immediately after arrival before resting.[84] This is remarkably different for smaller companion animals, which lose more heat and require more calories per unit of body mass than larger animals.[85] The smaller the animal, the higher the metabolic rates and the easier it is for the animal to become dehydrated.[86] Additional factors such as extreme weather conditions, health issues, environmental stressors, and excess handling, can quickly alter the animal's state.[87] While feeding restriction may not be enough to cause malnutrition, the sensation of hunger and thirst during transport can negatively impact the animal's welfare.[88]

Most airlines advise pet owners to provide food to their pets within four hours of departure time.[89] This guideline is to ensure compliance with 9 C.F.R. Section 3.13, which states that "carriers…must not accept a dog or cat for transport in commerce unless the consignor certifies in writing to the carrier…that the dog or cat was offered food and water during the 4 hours before delivery to the carrier."[90] Some airlines have pet owners sign a form to ensure compliance with this rule.[91]

Water availability is essential during hot temperatures, as the lack of it can increase the likelihood of heat stress on animals.[92] Contrary to food, where multiple factors can affect caloric intake, water deprivation seems to be largely dependent on ambient temperatures.[93] Animal species vary in how often they drink water within a four-hour period.[94]

---

[81] Broom, *supra* note 66, at 208.

[82] *Guidelines*, *supra* note 76, at 58.

[83] Broom, *supra* note 66, at 207.

[84] *Id.*

[85] *Guidelines*, *supra* note 76, at 57.

[86] *Id.*

[87] *Id*.

[88] Appleby et al., Animal Welfare 18 (CABI ed., 2011) [hereinafter Animal Welfare].

[89] *Plane Talk: Traveling with Animals*, Office of Aviation Enforcement & Proceedings (June 2017) [hereinafter *Plane Talk*], https://www.transportation.gov/airconsumer/plane-talk-traveling-animals.

[90] 9 C.F.R. § 3.13(c) (1991).

[91] *Plane Talk*, *supra* note 89.

[92] *Id.*

[93] *Id.*

[94] *Id.*

However, most of the enclosures in which animals travel contain a fixed water bottle available for the animals during the journey.[95] Still, water availability is restricted to the size of that container, and it is uncertain whether that amount is sufficient for the duration of the journey.[96] The availability of water is most important during summer months, as dehydration is a determining factor in cases of heat stress.[97]

b. Freedom from Fear and Distress

Almost every article written about the effects of transport on animals affirms that transportation is a very stressful event and can cause detrimental effects on the welfare of the animal.[98] The reason transport causes such stress in animals is because transport is an unnatural event that elicits changes in the physiological and mental state of the animal.[99] During transport, animals are exposed to multiple new experiences in a relatively short period of time, to which their bodies and mind will need to adjust and comprehend. When pets are transported by air, they are usually transported by road first. Once animals arrive at the airport, they experience several new occurrences very quickly. Animals are placed in enclosures they may not be accustomed to, on an empty stomach, moved and handled by strangers, mingled with other animals, and exposed to airplane conditions which usually involve loud noises, vibration, restricted ventilation, and the possibility of extreme temperatures.[100] The combination of these factors affects the animal both physically and emotionally.[101]

Fear and distress are two emotional or psychological reaction states.[102] Fear is best described as being elicited by exposure to an unpleasant event that is sudden, unfamiliar, unpredictable, and inconsistent with expectations.[103] In 2007, a dog inside a kennel arriving at a Seattle baggage claim area was in a very distressed state.[104] Upon inspection, the dog had been chewing on his kennel during the flight and scraped his gums in the process, causing them to bleed.[105] Panic-induced injuries are a fairly common occurrence in pets transported

[95] IATA, *supra* note 75.

[96] *Guidelines*, *supra* note 76.

[97] *Id.*

[98] Farm Animals, *supra* note 2, at 12.

[99] *Id.*

[100] P. D. Warriss, *The Welfare of Animals During Transport*, 36 Veterinary Ann. 73, 73-85 (1994).

[101] *Id.*

[102] Farm Animals, *supra* note 2, at 89.

[103] *Id.* at 70.

[104] Where is Jack?, *supra* note 29.

[105] *Id.*

by air;[106] moreover, these injuries have also been documented in cattle, horses, rabbits, pigs, and poultry.[107] Self-inflicted injuries are undesirable consequences of inappropriate fear responses and reflect the extreme burden on the psychological state of the animal.[108] Self-inflicted injuries can lead to chronic pain, infection, physical debilitation, and death.[109]

During transport, animals enclosed in a crate cannot react appropriately to frightening events.[110] In the event of major turbulence on an airplane, it is common practice for the pilot to inform the passengers of the conditions the airplane will encounter. Passengers are aware of the possibility of a sudden fall or jerking movement by the airplane, and as such, they can prepare to appropriately react to any condition. However, pets traveling in the cargo compartment are unaware of the upcoming conditions the plane will experience. An animal inside a crate is unable to respond as it normally would to a sudden drop or swerve of the airplane, affecting its psychological state.[111] Using rats, researchers found that animals that could control and/or predict the occurrence of an electric shock showed less pronounced stress responses than counterparts with no control or warning signals.[112] If an animal is unable to anticipate an event and react accordingly, its stress level increases.[113]

The most stressful part of transport occurs during the handling, loading, and unloading process.[114] A research report performed on several dogs subjected to air transport found the loading and unloading procedures caused the largest increase in heart rate.[115] Several research studies performed on farm animals have come to the same conclusion.[116] Fear and distress during transport compromise an animal's welfare and health because fear interferes with the animal's normal mechanism to cope with its environment, and can worsen an animal's pre-existing condition to the point of causing its death.[117] An animal transported with pre-existing health conditions might not be able to cope with the environment the same way a healthy animal would.[118]

---

[106] *Id.*

[107] *See generally* Farm Animals, *supra* note 2.

[108] Animal Welfare, *supra* note 88, at 89.

[109] *Id.*

[110] *Id.*

[111] *Id.*

[112] J. M. Weiss, *Effects of coping behaviour with and without a feedback signal on stress pathology*
in rats, J. Comp. & Physiological Psychol. 22-30 (1971).

[113] *See id.*

[114] Reneé Bergeron et al., *Physiology and behavior of dogs during air transport*, 66 Can. J. Veterinary Res. 211, 215 (2002).

[115] *Id.*

[116] Farm Animals, *supra* note 2, at 170.

[117] *Id.*

[118] *Id.*

To ease the stress of transport, many humans have opted to give drugs to their pets before transport.[119] The need to provide sedation to an animal before traveling raises concerns as to how stressful air transportation can potentially be for animals and their mental state. Many owners choose to administer a sedative under the assumption that it helps the animal remain calm and minimizes the psychological effect of transport.[120] In 1995, airline officials established through their own investigations that over-sedation was the most common cause of animal death during air transport.[121] The Journal of the American Veterinarian Medical Association (JAVMA) advises veterinarians not to prescribe sedatives for animals that are to travel except in unusual circumstances.[122] The response to sedation in high altitudes is poorly known in animals.[123] Currently, no scientific research has been conducted on the effects of sedation in animals transported by aircrafts. Most airlines discourage the use of sedatives on animals before flying, as this affects the animal's normal physiology mechanism and impairs the ability of the body to react and adapt to stress-related conditions.[124] Animals that are given a sedative should be monitored, as there is always a risk of an adverse reaction.[125]

c. Freedom from Discomfort

When companion animals are transported in airplanes, airlines require them to be carried in crates. Therefore, most animals, except for service animals (to be discussed later), will travel in a confined space. For those animals that travel inside a crate, their comfort is mostly dependent on the size of the enclosure. Currently, all airlines that accept pets have established specific requirements for the use of crates.[126] Acceptance of the animals' crates ultimately rests with each individual airline—kennels must be of certain length, height, and width dimensions according to the size of the animal(s) being transported.[127] Regulations state that crates must have enough space for an animal to stand, lay down, and turn in a natural position.[128] However, these regulations do not ensure pets are provided with true freedom of movement during air

[119] Arthur Tennyson, *Air transport of sedated pets may be fatal*, 207 J. Am. Veterinary Med. Ass'n 680, 684 (1995).

[120] *Id.*

[121] *Id.*

[122] *Id.*

[123] *Id.*

[124] IATA, *supra* note 75.

[125] *Id.*

[126] *Plane Talk*, *supra* note 89.

[127] IATA, *supra* note 75.

[128] *Airline Pet Cargo Crate Requirements*, Pet Travel, http://www.pettravel.com/passports_container_requirements.cfm (last visited Feb. 21, 2018).

transport. In order to facilitate the appropriate space, the preferences of companion animals in transport are invaluable. For example, dogs and cats will most likely lay down immediately, while other animals may stand.[129]

Air carriers base the comfort of an animal strictly on space allowance.[130] Space requirements are based on the physical space which an animal requires to perform its basic movements of lying, rising, and standing.[131] However, other basic movements like stretching and scratching are disregarded. The space requirements used by airlines are established based on just a few spatial needs for a given species.[132] The space requirements often fail to cover the minimal spatial needs of the animal.[133] Each animal needs distances of length, width, and height to stand, lie, and move, but also space to stretch the head, neck, limbs, and back.[134] After any human or animal holds the same position for a long period of time, the body's reaction is to stretch. Stretching enables an animal to keep its joints and muscles in a state where they can be used effectively when required.[135] Animals prevented from stretching, and subsequently provided with an opportunity to do so, will spend a much longer time stretching.[136] With additional space, stretching could be performed differently, allowing the animals to straighten the back, elevate and move the tail, and full extension of one or both of the fore and hind limbs.[137] Discomfort from lack of stretching can also cause other health-related issues.

Other factors contributing to the comfort of animals during air transport include the conveyance design, conditions of transport, operation technique of the conveyance, and journey length.[138] Animals traveling in the cargo compartment might not only suffer physical discomfort, but, depending on the loading arrangements and environmental conditions, might experience thermal discomfort as well.[139] While physical discomfort is commonly encountered during air transport, thermal discomfort depends mainly on the conditions of transport.[140] To avoid animal discomfort, an appropriate environment, including shelter and a comfortable resting area, should be provided.[141]

---

[129] *Id.*
[130] IATA, *supra* note 75.
[131] Broom, *supra* note 66, at 205.
[132] IATA, *supra* note 75.
[133] Broom, *supra* note 66, at 113.
[134] *Id.*
[135] *Id.* at 114.
[136] *Id.* at 102.
[137] *Id.*
[138] Broom, *supra* note 66, at 199.
[139] Farm Animals, *supra* note 2, at 11.
[140] *Id.*
[141] *Plane Talk*, *supra* note 89.

d. Freedom from Pain, Injury, and Disease

i. Pain

Many animals are injured during air transport.[142] While the cause of these injuries will be discussed in more detail later in this paper, it is evident that most of these injuries cause pain to the animal.[143] Air transportation of animals results in many incidents of mutilation caused by the animals attempting to escape their enclosures.[144] Attempts to escape are evidenced by loose teeth, blood pouring from the mouth, and lost toes.[145]

Pain is mostly recognized through external injuries or changes in behavior.[146] Disease and injuries are among some of the factors that can cause pain during animal transport.[147] However, other factors can also cause suffering that are not visible or apparent. For example, loud noises might be painful to an animal.[148] United Airlines reported that a dog's ear drum ruptured after air transport.[149] Pain associated with transport is hard to assess. Humans have a limited ability to recognize pain in animals, since pain primarily relies on animals' physiological and behavioral responses.[150] Animal responses to pain are usually only evident with visible traumatic injuries, extreme vocalization, or presence of blood.[151] However, simply because an animal is not portraying any signs of pain, does not mean it is not suffering.

As stated above, pain is not limited to physical injuries, and pain often will not present itself with obvious signs.[152] Pain is described as "an aversive sensory and emotional experience representing an awareness by the animal of damage or threat to the integrity of its tissues; it changes the animal physiology and behavior to reduce or avoid the damage, to reduce the likelihood of recurrence and to promote recovery."[153] This definition involves both a sensory and an emotional component.[154] Since it is difficult for researchers to determine what is considered an

[142] *See* Where is Jack?, *supra* note 29.

[143] *Id.*

[144] *Id.*

[145] *Id.*

[146] Animal Welfare, *supra* note 88, at 64.

[147] Farm Animals, *supra* note 2, at 8.

[148] Stanley Coren, *Is It Safe to Ship Dogs or Cats by Air?*, Pyschol. Today (Sept. 27, 2012), https://www.psychologytoday.com/blog/canine-corner/201209/is-it-safe-ship-dogs-or-cats-air.

[149] *Id.*

[150] Animal Welfare, *supra* note 88, at 64.

[151] *Id.*

[152] Coren, *supra* note 148.

[153] Animal Welfare, *supra* note 88, at 64.

[154] *Id.*

unpleasant emotional experience to each animal, this component is usually neglected during air transport. Imagine a scenario where a very squeamish dog is unaccustomed to being inside a crate, is unaccustomed to loud noises, is unaccustomed to unfamiliar humans, is traveling in the cargo compartment while there is turbulence—this would likely be a painful experience for the animal. Hence, the emotional experience is often left unacknowledged. Unfortunately, most of the pain recognition in animals is strictly dependent on human perception of pain, which we understand by visible signs.[155] However, an animal without any physical injury might still suffer through an unpleasant emotional experience.

ii. Injury

Sometimes injuries are not caused by animals themselves, but by humans handling the animals. Self-inflicted injuries and injuries caused by improper handling are the most common causes of physical injuries during air transport in companion animals.[156] Animals sustain self-inflicted injuries through vigorous attempts to escape their enclosures.[157] Lack of acclimatization to the crate, prolonged fear, and the temperament of the animal are among the reasons animals try to escape their enclosures.[158]

On February 2, 2015, United Airlines reported an animal injury where a "dog chewed on [the] bars of [his] kennel resulting in damage and loss of teeth."[159] The animal was treated by a local veterinarian and cleared for travel.[160] The same month, Delta Airlines reported an injury to a twelve-year-old Weimaraner that injured four toes, eventually detaching the nails from the front paws.[161] "The injury occurred overnight while the pet was at the airport kennel service."[162] "The paws were cleaned and bandaged" for the animal to complete the trip.[163] In August 2015, Delta Airlines reported an injury to a Dachshund when it chewed the releasable cable ties and was observed to have blood coming from the mouth.[164] In September 2015, United Airlines reported three injury cases of dogs chewing the kennel door, which caused bleeding from the mouth.[165]

---

155 *Id.*
156 *See generally* Broom, *supra* note 66.
157 Where is Jack?, *supra* note 29.
158 Adams, *supra* note 4, at 160-61.
159 Where is Jack?, *supra* note 29, at 77.
160 *Id.*
161 *Id.*
162 *Id.*
163 *Id.*
164 *Id.* at 82.
165 *Id.* at 83.

iii. Diseases

Transport is an event that can impair the health of the animal.[166] When animals are transported, there is always the risk of exposure to new pathogens and/or diseases.[167] Animals can be exposed to both contagious and infectious diseases.[168] "Contagious diseases can be transmitted by direct physical contact with other animals, while infectious diseases can be transmitted not only by infected animals, but also via air, water, food, and many other vectors, including…vehicles, humans and environmental contamination."[169] However, since most animals traveling in airplanes are carried individually in crates, the risk of contagious disease is less than that of infectious disease.[170]

The stress of transport puts a huge burden on the animal's body.[171] Therefore, sick animals might succumb before, during, or after transport.[172] Animals that succumb after transport might be due to exposure to new pathogens or reduced immunity.[173] Not every animal that travels is healthy. Necropsy reports of animals found dead after air transport revealed that they were carrying transmissible diseases.[174] On December 18, 2015, Delta Airlines reported the death of a two-month-old canine bulldog.[175] The dog was found dead upon arrival of the flight.[176] Necropsy results indicated death was caused by an upper-respiratory bacterial infection.[177] In June 2015, United Airlines reported the death of a nine-week-old Siberian husky.[178] Necropsy reports showed the cause of death to be Canine Parvovirus.[179] The puppy showed signs of severe illness shortly after acceptance and prior to flight departure, and was removed from the flight and taken to the veterinarian, where it deceased.[180] Apparently, the puppy was in the final stages of the disease.[181]

Animals carrying infectious disease can put other animals at risk.[182] Even though some animals might be symptom-free, they could

---

166 Broom, *supra* note 66, at 209.
167 *Id.*
168 Animal Welfare, *supra* note 88, at 125.
169 *Id.*
170 *Id.*
171 Farm Animals, *supra* note 2, at 69.
172 *Id.*
173 Broom, *supra* note 66, at 210.
174 Where is Jack?, *supra* note 29.
175 *Id.* at 85.
176 *Id.*
177 *Id.*
178 *Id.* at 81.
179 *Id.*
180 *Id.*
181 *Id.*
182 Animal Welfare, *supra* note 88, at 125.

still be carriers of disease and shed pathogens.[183] "The shedding of pathogens by the transported animals results in contamination of vehicles and other transport-related equipment and areas."[184] When animals are kept together, disinfection and cleaning is imperative to reduce disease transmission.[185] Disease can be transmitted through contact with excreta or contact with unsanitary areas.[186]

"Many reports describing the relationship between transport and incidence of specific diseases [in farm animals] have been published."[187] "'[S]hipping fever' is a term commonly used for a specific transport-related disease condition in cattle [that] develops between a few hours and 1-2 days after transport."[188] Other investigations have shown that transport increases incidence of "mortality in calves and sheep, and salmonellosis in sheep and horses."[189] Unfortunately, the prevalence of disease in pets transported by air is still unknown.

e. Freedom to Express Normal Behavior

Household pets are usually accustomed to whatever living environment is provided by the owner. However, if their daily environment differs greatly from the environment provided during transport, and it usually does, many behavioral responses might be affected, such as movement and the ability to express normal behavior.[190]

During transport, most pets travel inside individual crates and do not encounter other animals. While pets are at a certain proximity with other animals, there should not be any physical interaction between them. The confinement of pets limits their ability to express normal behavior—*i.e.*, social behavior, sexual behavior, play behavior, and exploration.[191] However, other behaviors like sleep, rest, or grooming might not be affected.[192] The behavior most likely to be performed during air transport is exploration.[193] Animals would be highly-motivated to perform this behavior during transport, as exploration is typically triggered by fear and novelty.[194] "[E]xploration is any activity that has the potential for the individual to acquire new information about its

[183] Broom, *supra* note 66, at 209.
[184] *Id.* at 210.
[185] *See id.*
[186] *Id.*
[187] *Id.* at 209.
[188] *Id.*
[189] *Id.*
[190] Animal Welfare, *supra* note 88, at 98.
[191] *Id.*
[192] *Id.*
[193] Broom, *supra* note 66, at 109.
[194] *Id.*

environment or itself." Therefore, air transport deprives every animal from expressing such behavior.

Behavioral restriction can have psychological effects. Confinement during air transport most likely leads to boredom and frustration, especially for household pets that have exploratory environments at home.[195] During air transport, pets demonstrate many signs of motivational frustration such as vocalization, escape attempts, and aggression.[196] For such a naturally social species, isolation can be detrimental.[197] Frustration can turn into suffering when an animal in a stressful environment is unable to express normal behavior.[198]

IV. Legislation to Protect Pets During Air Transport

a. United States

i. Animal Welfare Act

In the United States, the air transport of pets is overseen by the Animal and Plant Health Inspection Service (APHIS).[199] This agency, a branch of the United States Department of Agriculture, enforces the Animal Welfare Act.[200] The Act, intended primarily to ensure the proper care of research animals, also works to ensure the humane treatment of animals during transportation.[201] To fulfill this policy, the Secretary of Agriculture authorized APHIS to develop regulations and standards that would eventually be compiled in the Animal Care Inspection Guide.[202] The guide provides details about proper inspection procedures, and describes conditions, diseases, and scenarios inspectors might encounter.[203] Inspectors and veterinarians employed by APHIS visit airports and ensure air carriers and animal holding areas are complicit with the regulations.[204] The inspectors ensure all animals are safely secured, observe handling technique of the personnel, and

[195] Animal Welfare, *supra* note 88, at 98.

[196] *Id.*

[197] *Id.*

[198] *Id.* at 101.

[199] Andrew D. Cardon et al., *The Animal Welfare Act: From Enactment to Enforcement*, 51 (3) J. Am. Ass'n for Lab. Animal Sci. 301-305 (2012).

[200] *Id.*

[201] *Id.* at 301-02.

[202] *Id.* at 301, 303.

[203] U.S. Dep't of Agric., Animal & Plant Health Inspection Serv., Animal Welfare Inspection Guide (June 2017) [hereinafter Inspection Guide] https://www.aphis.usda.gov/animal_welfare/downloads/Animal-Care-Inspection-Guide.pdf.

[204] *See generally* Cardon, *supra* note 199.

observe the animals for their health and well-being.[205] The inspections are conducted at random, periodic intervals.[206] Currently, APHIS has a limited workforce compared to the amount of facilities it must inspect.[207]

1. Standards

The APHIS transportation standards for dogs and cats are codified at 9 C.F.R. Sections 3.13-3.19.[208] These regulations establish minimum requirements for primary enclosures, food, water, care in transit, terminal facilities, and handling.[209] While most of the transport regulations are intended to safeguard the welfare of the animals transported by air, some air carriers cannot comply with the regulations in the way they were drafted.[210] 9 C.F.R. Section 3.15(a) states:

> The animal cargo space of primary conveyances used to transport dogs and cats must be designed, constructed, and maintained in a manner that at all times protects the health and well-being of the animals transported in them, ensures their safety and comfort, and prevents the entry of engine exhaust from the primary conveyance during transportation.[211]

This regulation, as strict as it seems, was clearly not aimed to protect dogs and cats in cargo compartments of commercial airplanes. As previously discussed, cargo compartments in commercial airplanes were designed to prevent fire from spreading.[212] The many reports of dogs dying inside the cargo compartment of commercial airplanes due to heat stroke, asphyxia, and hypothermia represent ample proof that the cargo space where most pets travel in commercial airplanes cannot always protect the health and well-being of animals in transit.[213] On a hot day, the cargo space will not able to provide the suitable conditions to protect animals, as the temperature inside this compartment is dependent on the ambient

---

[205] Inspection Guide, *supra* note 203, at 2-14.

[206] Nicolette Petervary, *Animal Welfare Act and its implication*, ACAW Short Course (2015).

[207] Laura Italiano, *It's a Doggy Shame!*, New York Post (1999).

[208] U.S. Dep't of Agric., Animal & Plant Health Inspection Serv., Animal Welfare Act and Animal Welfare Regulations 125-35 (2017) [hereinafter Regulations], https://www.aphis.usda.gov/animal_welfare/downloads/AC_BlueBook_AWA_FINAL_2017_508comp.pdf.

[209] *Id.*

[210] *Id.*

[211] *Id.* at 130-31.

[212] Hanneman, *supra* note 1, at 4.

[213] Italiano, *supra* note 207.

temperature.[214] This is of special concern for animals of brachycephalic breeds that need proper ventilation and temperature conditions due to their anatomic features.[215] Therefore, compliance with this regulation seems to be unworkable due to how it is drafted.

Another federal regulation that might be difficult to enforce regularly is 9 C.F.R. Section 3.17(b). This regulation states:

> During air transportation of dogs and cats, it is the responsibility of the carrier to observe the dogs and cats as frequently as circumstances allow, but not less than once every 4 hours if the animal cargo area is accessible during flight. If the animal cargo area is not accessible during flight, the carrier must observe the dogs or cats whenever they are loaded and unloaded and whenever the animal cargo space is otherwise accessible to make sure they have sufficient air for normal breathing, [and] that the animal cargo area meets the heating and cooling requirements of 3.15(d).[216]

Since most companion animals travel in the class D compartment, which is not accessible by the crew, this raises suspicion as to how airplanes comply with this regulation.[217] Moreover, since air inside the cargo compartment comes from other compartments of the plane, if ventilation is not positive in these compartments, it is not possible to ensure animals have sufficient air for normal breathing.[218] Scientists have yet to determine safe oxygen levels required by companion animals during air transport.[219] What is certain, though, is that appropriate ventilation is crucial for brachycephalic breeds.[220] If the regulations establish the need to verify the condition of the animals, APHIS should have ensured the airlines and carriers could properly comply.

While some regulations pose difficulties for compliance, others pose issues of ambiguity. The frequent use of broad terms and lack of specific description makes inspections more of a subjective, rather than objective, endeavor. Regulations contain phrases like "enough air for normal breathing," "sufficient for normal breathing," and "heated or cooled as necessary," which means enforcement ultimately relies with

---

[214] Hanneman, *supra* note 1, at 5.

[215] *Air Travel and Short-Nosed Dogs FAQ*, AVMA (2017) https://www.avma.org/public/PetCare/Pages/Short-nosed-Dogs-and-Air-Travel-FAQs.aspx.

[216] 9 C.F.R. § 3.17(b).

[217] Hanneman, *supra* note 1, at 5.

[218] *Id.*

[219] Le Luong, *supra* note 7.

[220] Hemmelgarn & Gannon, *supra* note 12, at E4.

the inspector.[221] The use of subjective parameters in the regulations causes inconsistent enforcement standards.

2. Enforcement

The Animal Welfare Act regulates all forms of commercial transportation of animals and requires the registration of all carriers under the Act.[222] Depending on the type of violation, a regulatory process is followed.[223] Inspections are always unannounced and on a random basis at least once yearly, except when repeated non-compliance has been reported.[224] There are four types of enforcement actions that can be taken following non-compliance: a ninety day re-inspection, issuance of an official warning letter, issuance of a stipulation, and prosecution by the Office of General Counsel.[225] The ninety day re-inspection is enforced when "a facility is making clear progress toward compliance and the inspector found only a few minor [non-compliance items]."[226] The issuance of an official warning letter occurs when a facility remains out of compliance after a ninety day re-inspection.[227] Any carrier that violates any provision, rule, regulation, or standard promulgated by the Secretary, may be assessed a civil penalty by the Secretary of not more than $10,000 for each such violation.[228]

Over the years, several airlines have been found out of compliance and have faced monetary penalties as a result.[229] Monetary penalties refer to "a specified amount that an alleged violator agrees to pay through a stipulation agreement to resolve alleged violations."[230] Between 2000 and 2004, Delta Airlines failed to comply with regulations regarding food and water, ventilation, and proper care of companion animals.[231] In 2005, Delta Airlines agreed to pay $187,500, for a total of seven APHIS violations.[232] From 2004 until 2007, United Airlines received five complaints caused by the escape of several animals from

[221] Regulations, *supra* note 208, at 131.
[222] Cardon, *supra* note 199, at 302.
[223] *Id.* at 304.
[224] *Id.* at 303-04.
[225] *Id.* at 304.
[226] *Id.*
[227] *Id.*
[228] *Id.* at 302.
[229] Jol A. Silversmith, *Airline Animal Incident Reports*, Third Amendment (Feb. 3, 2018), www.thirdamendment.com/AnimalReports.pdf.
[230] U.S. Dep't of Agric., Animal & Plant Health Inspection Serv., Enforcement Glossary (May 4, 2017), https://www.aphis.usda.gov/aphis/ourfocus/business-services/ies/IES_Performance_Metrics/IES_Enforcement_Glossary.
[231] Silversmith, *supra* note 229.
[232] *Id.*

their enclosures.[233] In 2009, United Airlines agreed to pay a penalty of $11,500, $10,000 of which was held in abeyance providing the carrier implemented a program to ensure secured enclosures.[234]

ii. Injury, Loss, and Death Incidents in the United States

It is no secret that animals get injured, lost, and sometimes die when transported in airplanes.[235] Statistics on these incidents are used by most airlines to evaluate their performance regarding animal transportation.[236] When low numbers of incidents are achieved, airlines tend to praise themselves.[237] This information is also used by the media to rank the top airlines on animal transportation affairs and assess the safety of the system.[238] Additionally, these statistics are utilized by pet owners to choose appropriate airlines to transport their pets.[239] Still, pet owners should know where these statistics come from, how accurate they are, who gathers them, what constitutes an injury, and who decides what incidents should be reported.

Before 2005, there was no official recordkeeping of animal-related incidents by airlines.[240] In 2000, the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century established Section 710, which required reports by carriers on incidents involving animals during air transport.[241] The provision generally states that an air carrier that provides scheduled passenger air transportation shall submit monthly to the Secretary a report on any incidents involving the loss, injury, or death of an animal (as defined by the Secretary of Transportation) during air transport provided by the air carrier.[242] The Secretary authorized the U.S. Department of Transportation with the administration and enforcement of Section 710.[243] However, it was not until 2005 that the Department of Transportation enforced this provision and ultimately required every airline that operated scheduled service with at least one aircraft with a

[233] *Id.*

[234] *Id.*

[235] *Id.*

[236] Bill McGee, *Flying with pets: How to ensure safe passage*, USA Today (Dec. 10, 2014), https://www.usatoday.com/story/travel/columnist/mcgee/2014/12/10/flying-with-pet-cat-dog/20143169/.

[237] Rachel Peachman, *Is Your Pet Safe Flying In Cargo?* CN Traveler (Feb. 15, 2017), https://www.cntraveler.com/story/is-your-pet-safe-flying-in-cargo.

[238] Leslie Joseph, *These are the airlines on which your pet is least likely to die*, Quartz (Apr. 26, 2017) https://qz.com/969623/what-airlines-are-safest-for-pets/.

[239] *Id.*

[240] Silversmith, *supra* note 229.

[241] *Id.*

[242] *Id.*

[243] *Id.*

design capacity of more than 60 seats to file a monthly report on pets that died, were lost or injured during transport, and the total number of animals transported in a calendar year.[244] Initially, the scope of the regulation was limited to animals kept as a pet in a family household, and did not include commercial shipments of animals.[245] However, a rulemaking petition submitted by the Animal Legal Defense Fund was able to overturn this decision, and ever since 2010, the Department of Transportation has included commercial shipments of dogs and cats within these regulations, but has declined to cover other species.[246]

Now, airlines are required by law to report incidents involving the loss, injury, or death of every pet and commercial shipment of dogs and cats.[247] Airlines are only required to report those incidents that occur while the animal is in their care.[248] To avoid ambiguity, the statute explains that the air transport of an animal "includes the entire period during which an animal is in the custody of an air carrier, from check-in of the animal prior to departure until the animal is returned to the owner or guardian of the animal at the final destination of the animal."[249] Therefore, anything that happens to the animal once it is no longer in the custody of the air carrier, even though potentially a consequence of the air transport, goes unpunished. Animals can develop health issues after flight that might end up causing the death of the animal.[250] Incidents that occur days or weeks after air transport are not accounted for in statistics.[251]

The 2016 report indicates a total of 523,743 animals were transported between seventeen airlines.[252] United Airlines had the most incidents reported with a total of twenty-three incidents, far more than the Hawaiian Airlines which reported only three incidents.[253] Although United Airlines had the most incidents, it also transported the most animals.[254] United Airlines transported a total of 109,149 animals, while

---

[244] *Id.*

[245] *Id.*

[246] Chris Berry, *ALDF Scores Partial Transparency Victory for Animals on Airlines*, Animal Legal Defense Fund (Aug. 21, 2014), http://aldf.org/blog/aldf-scores-partial-transparency-victory-for-animals-on-airlines/.

[247] 49 U.S.C. § 41721 (2015).

[248] 49 U.S.C. § 41721.

[249] 49 U.S.C. § 41721(e).

[250] Amber King, *A Dog Died After a Short Flight, and His Owner is Blaming the Airline*, Wide Open Pets (2017), http://www.wideopenpets.com/a-dog-died-after-a-short-flight-and-his-owner-is-blaming-the-airline/.

[251] Silversmith, *supra* note 229.

[252] Dep't of Transp., Air Travel Consumer Rep. (2016), https://www.transportation.gov/sites/dot.gov/files/docs/2017FebruaryATCR.pdf.

[253] *Id.*

[254] *Id.*

Hawaiian Airlines transported just 7,518 animals.[255] The percentages indicate Hawaiian Airlines was actually more of a transgressor than United Airlines.[256]

Airlines are not required to report incidents where the animal escapes and is eventually found and safely returned to its owner.[257] The provision does not specify what constitutes an injury, nor does it explain how injuries will be evaluated. This deficiency in the provision allows injuries to fly under the radar and the regulation to be implemented inconsistently. The provision also requires the Department of Agriculture to work with air carriers to improve the training of employees with respect to air transport and the notification of passengers of the conditions under which the air transport of animals is conducted.[258]

The compilation of all incidents falls on each airline, along with the transparency and accuracy of the information.[259] Mary Beth Melchior, founder of *Where is Jack?*, a pet travel safety-advocacy group based in Miami Beach, Florida, said that airlines often misreport cases or fail to report them at all.[260] For example, Melchior mentioned the story of a cat that went missing from its crate and was found four days later under a baggage carousel.[261] This incident, which occurred in 2011, was not filed by Alaska Airlines, even though it was required to do so, since the incident did not fall within the statute's exclusion of pets only missing for a few minutes or hours.[262]

1. Injury Cases

The cause of many injuries during air transport are self-inflicted by animals in an attempt to escape their crates.[263] A federal regulation, 9 C.F.R. Section 3.13(d), was developed with the purpose of ensuring the safety of animals during air transport and to prevent their escape.[264] This regulation states that a carrier "must not accept a dog or cat for transport in commerce in a primary enclosure" if the primary enclosure is obviously defective or damaged and cannot reasonably be expected

[255] *Id.*

[256] *Id.*

[257] Silversmith, *supra* note 229.

[258] 49 U.S.C. § 41721.

[259] Kyung Song, *Pets dying on flights: Airlines offer only partial picture of animal safety*, Seattle Times (Sept. 28, 2014). https://www.seattletimes.com/seattle-news/pets-dying-on-flights-airlines-offer-only-partial-picture-of-animal-safety/.

[260] *Id.*

[261] *Id.*

[262] Silversmith, *supra* note 229.

[263] Justin Bachman, *This Is How Many Animals Died on Airlines Last Year*, Bloomberg (Feb. 10, 2015), https://www.bloomberg.com/news/articles/2015-02-10/this-is-how-many-animals-died-on-airlines-last-year.

[264] 9 C.F.R. § 3.13(d).

to safely and comfortably contain the dog or cat.[265] Despite this, in 2005, Continental Airlines violated this regulation when it chose to accept animals in inadequate enclosures, which led to the escape of animals and injuries during the escape attempts.[266] Continental Airlines agreed to pay a penalty of $35,000, of which $10,000 was held in abeyance providing that the carrier implemented a USDA-approved training program.[267]

2. Death Cases

The circumstances surrounding most animal deaths during air transport varies each year. In 1995, an article from the Journal of the American Veterinary Medical Association disclosed that airline officials stated that over-sedation was the most frequent cause of animal deaths during air transport.[268] However, recent public statements by airline representatives attributed most deaths to pre-existing health issues, as well as respiratory distress in brachycephalic breeds.[269] Certainly, airline officials are reluctant to admit that deaths are related to the method of transport and the care of air carriers while in transit.

3. Pre-existing Diseases

Before an animal can fly, it must be examined by a veterinarian to confirm that it is healthy and fit to travel.[270] Every airline requires a health certificate to ensure animals have the proper vaccinations and are not carriers of zoonotic disease.[271] Even though measures are taken to prevent unhealthy animals from traveling, reports of animal deaths due to infectious diseases have been reported.[272]

Some animals with pre-existing diseases have been allowed to travel by veterinarians.[273] In 2007, a 10-year-old canine lab/chow mix was approved to travel by a veterinarian despite having a diabetic condition.[274] The animal was traveling from Guam to Washington, D.C. and died while in the quarantine station in Honolulu, Hawaii.[275]

---

[265] Regulations, *supra* note 208, at 125.

[266] Silversmith, *supra* note 229.

[267] *Id.*

[268] Tennyson, *supra* note 119.

[269] Beth Stebner, *Flying with Fluffy? Better think twice! More than HALF of pets who died during airline travel last year flew Delta*, Daily Mail (Feb. 7, 2012), http://www.dailymail.co.uk/news/article-2102733/More-HALF-pets-died-airline-travel-year-flew-Delta.html.

[270] *Plane Talk*, *supra* note 89.

[271] *Id.*

[272] Where is Jack?, *supra* note 29, at 81.

[273] *Id.* at 13-14.

[274] *Id.*

[275] *Id.*

A necropsy report revealed the cause of death to be a combination of conditions such as diabetes, chronic heart disease, periodontal disease, pyelonephritis, and ketoacidosis.[276]

4. Heat Stroke

Probably the most common cause of death of animals during air transport is heat stroke.[277] However, this is seldom addressed by airline representatives. Heat stroke is an acute and life-threatening emergency that occurs when elevation in body temperature results in direct thermal injury to body tissues.[278] Heat stroke is most commonly seen during the summer months after exercise or confinement in an enclosed area with poor ventilation.[279] Heat stroke should be considered a possibility in any animal that has a core body temperature higher than 106°F where other causes of hyperthermia have been excluded.[280]

In the late seventies and early eighties, several pet deaths by hyperthermia prompted investigations by the FAA in an attempt to find the ambient conditions that could precipitate heat stress in pets during air transport.[281] The government determined heat is the most serious environmental stressor animals can be exposed to during shipment, and demanded further study.[282] The information stemming from these reports was eventually used to establish regulations on the temperature parameters allowed in holding areas today.[283] These experiments used laboratory dogs of the Beagle breed, which all had the same age, size, weight, and hair type, and represented the general scope of animals that traveled frequently.[284] The experiment also showed that even though dogs can technically survive an episode of hyperthermia, it might suffer irreversible damages to certain organs.[285] These experiments determined that a rectal temperature of 108°F was the tolerance limit for a heat stroke,[286] when recent veterinarians stated that a rectal temperature of

---

[276] *Id.*

[277] *Guidelines*, *supra* note 76.

[278] W. S. Flournoy, *Heatstroke in Dogs: Clinical Signs, Treatment, Prognosis, and Prevention*, 25 Small Animal/Exotics Compendium 6, 422-30 (2003).

[279] *Id.*

[280] *Id.*

[281] *See* Gerald Hanneman, *A temperature/humidity tolerance index for transporting beagle dogs in hot weather*, Fed. Aviation Admin. (1987); Gerald Hanneman, *Tolerance endpoints for evaluations the effects of heat stress in dogs*, Fed. Aviation Admin. (1984); Gerald Hanneman, *A study of effects of hyperthermia on large, short-haired male dogs: A simulated air transport environmental stress*, Fed. Aviation Admin. (1977) [collectively hereinafter Hanneman *Experiments*].

[282] Hanneman *Experiments*, *supra* note 281.

[283] *Id.*

[284] *Id.*

[285] *Id.*

[286] *Id.*

106°F should be considered hyperthermia.[287] However, the studies did not incorporate all possible factors that could play a role in hyperthermia.[288] Various factors such as humidity, ventilation, the animal's muscular exertion, hair coat, and physical condition influence the body's temperature and can contribute to hyperthermia.[289] Consequently, thermal limits allowed in holding areas may be inadequate for different types of animals.[290]

There is a misconception that every animal that suffers from hyperthermia dies suddenly. Veterinary medicine literature pertaining to heat stroke cases show that dogs can survive episodes of extreme exposure to high temperatures, but may suffer irreversible damage as a consequence.[291] An eight-year-old male Poodle became overheated from being enclosed in a hot car; six days elapsed before it was admitted to a veterinary clinic.[292] Signs of vomiting and diarrhea were noticed for two days after it was exposed to the extreme heat.[293] Another dog confined in a hot car for several hours arrived at the veterinary clinic with a rectal temperature of 104.6°F.[294] A week after being discharged from the veterinarian the dog still had signs of renal disease.[295] A month went by before the animal completely recovered.[296] Heat stroke predominantly causes death during transport, but it can also cause long-term injuries in the animal.[297] Since a heat stroke does not always manifest itself immediately, there may be animals who have suffered heat strokes, but went unnoticed in the statistical reporting of incidents.

5. Brachycephalic Syndrome

Lately, the brachycephalic breed has increased in popularity due to its unique facial features. Unfortunately, these features are anatomic abnormalities, which include stenotic nares, enlarged tonsils, elongated soft palate, everted lateral saccules of the larynx, narrowed rima glottides, and collapse of the larynx and trachea.[298] All of these

[287] Y. Bruchim, *Canine Heatstroke*, Israel J. Veterinary Med. 67, 92 (2012).
[288] Hanneman *Experiments*, *supra* note 281.
[289] *Id.*
[290] 9 C.F.R. § 3.18(d); *Guidelines*, *supra* note 76.
[291] Stephen H. Krum, *Heatstroke in the Dog: A Polystemic Disorder*, 170 J. Am. Veterinary Med. Ass'n 531, 535 (1977).
[292] *Id.*
[293] *Id.*
[294] *Id.*
[295] *Id.*
[296] *Id.*
[297] Hanneman *Experiments*, *supra* note 281.
[298] Daniel A. Koch et al., *Brachycephalic Syndrome in Dogs*, 25 Small Animal/Exotics Compendium 48-55 (2003).

characteristics impair the ability to breathe properly, which is why these breeds are among the most at risk to suffer heat stroke and die during air transport.[299] In 2005, a two-year-old canine English bulldog died of asphyxiation caused by tracheal collapse during air transport.[300] Due to this breed's susceptibility to death, many airlines have opted to prohibit such breeds in-cabin or cargo compartments, while other airlines only forbid these breeds during the summer months.[301]

6. Loading and Unloading Procedures

While many incidents can be attributed to the animal per se, there are times when improper handling of the animals has been the reason for the losses, injuries, and deaths.[302] In 2006, ground handlers left a birdcage on the base of the belt loader and turned over the responsibility to another agent.[303] The cage fell and the door was opened, allowing the animal to escape.[304] Some incidents are caused by equipment malfunction; for example, in 2005, a cat escaped when a ground handler lifted the kennel from the baggage cart and the kennel hardware came apart, causing the kennel to fall on the ground and opened the door.[305]

Probably the most unacceptable reason for injury, loss, or death of animal during transport is as a result of human mistake. In 2005, ground handlers loaded a small breed dog in the wrong cargo compartment of the aircraft.[306] When the animal arrived in San Diego, it was cold and shivering and immediately had to be taken to a veterinary clinic.[307] The ground handlers also failed to enter the correct code in the computer that would have alerted the cockpit crew to the presence of an animal in the wrong compartment.[308]

7. Lost Animals

Animal transportation naturally lends itself to concerns of escape attempts. Many animals are not used to being restrained and this could be a stressful event for the animal. When companion animals

[299] Hemmelgarn, *supra* note 12, at E3-E4.

[300] WHERE IS JACK?, *supra* note 29.

[301] Alastair Bland, *Is Taking Your Pet on an Airplane Worth the Risk?*, SMITHSONIAN (Mar. 20, 2013), https://www.smithsonianmag.com/travel/is-taking-your-pet-on-an-airplane-worth-the-risk-6241533/.

[302] WHERE IS JACK?, *supra* note 29.

[303] *Id.* at 9.

[304] *Id.* at 4.

[305] *Id.*

[306] *Id.*

[307] *Id.*

[308] *Id.*

are transported by air, they are always carried inside a crate. The enclosure must follow federal regulations, as well as airline policies, for the animal to be able to be transported.[309] To ensure the safety of the animals, primary enclosures must meet the requirements set out in 9 C.F.R. Section 3.14.[310] The primary enclosure must be strong enough to contain the animal securely and comfortably at all times.[311] In October 2004, a cat died on a flight from Asheville, North Carolina to Phoenix, Arizona.[312] APHIS specifically attributed the death of the cat to the acceptance of an inadequate enclosure.[313]

There are situations where animals have escaped, even when the proper procedures were followed. In April of 2015, a Delta cargo plane accepted two Chihuahuas for travel from Los Angeles, California to Bloomington, Illinois.[314] The dogs were in the same kennel and all paperwork was processed without issue.[315] When the animals arrived in Bloomington, agents observed the kennel was soiled inside.[316] Prior to releasing the animals to their owner, agents attempted to clean the inside of the crate.[317] As agents were walking one of the Chihuahuas, its leash became unknotted and the dog darted across airport grounds.[318] 9 C.F.R. Section 3.14(b) provides procedures for the cleaning of the primary enclosure.[319] "If it becomes necessary to remove a dog or cat from the enclosure in order to clean, or to move the dog or cat to another enclosure, this procedure must be completed in a way that safeguards the dog or cat from injury and prevents escape."[320]

Cases that raise a major concern are ones where, despite taking every possible measure to secure the kennel, the animal manages to escape without ever being found or seen. For example, in October 2015, a domestic cat was tendered for transport at the Detroit, Michigan airport and was accepted in good health.[321] The cat was assigned to Delta Airlines with releasable zip ties affixed to all four corners of the door of the kennel.[322] After the cat was accepted and dispatched to the aircraft, and upon planeside arrival, the cargo agent assigned to transport the

309 9 C.F.R. § 3.14.
310 *Id.*
311 Regulations, *supra* note 208, at 70.
312 Silversmith, *supra* note 229.
313 *Id.*
314 Where is Jack?, *supra* note 29.
315 *Id.*
316 *Id.*
317 *Id.*
318 *Id.*
319 9 C.F.R. § 3.14(b).
320 *Id.*
321 Where is Jack?, *supra* note 29.
322 *Id.*

animal noticed it had escaped from the kennel.[323] An immediate search was launched, but the cat was unable to be located.[324] The search for the animal was still ongoing when the report was filed.[325]

b. European Union

In 1974, the European Union (E.U.) passed the first animal protection law for the transportation of farm animals.[326] This was the first time the welfare of animals in transport was acknowledged and it seemed that the E.U. was ahead of the rest of the world. Undoubtedly, the early passage of this law created hopes for others to follow, or expand the scope to include pets in the future. However, the protection of other animals in transport remained stagnant. To this day, pets do not enjoy the same protection during air transport as other animals.

i. Regulation of Animals During Transit

In 2007, a new regulation came into force to improve the welfare of animals during transport.[327] The E.U. passed the E.U. Council Regulation (EC) No 1/2005 on the protection of animals during transport and related operations.[328] The regulation applies to the transport of any live vertebrate animal in connection with an economic activity.[329] Unfortunately, the regulation does not apply to journeys where the animal is an individual animal accompanied by its owner or other responsible person, the transportation of animals by hobby breeders where income source does not exceed expenses of hobby, and journeys where the animals are pet animals.[330] Even though some animals are not protected during transport by the E.U. regulation, they may still be protected by member states' own regulations.[331] Some member states, like the United Kingdom, saw the passage of this regulation as an opportunity to expand the scope of protection to other animals.[332]

---

[323] *Id.*

[324] *Id.*

[325] *Id.*

[326] Farm Animals, *supra* note 2, at 360.

[327] *Welfare of Animals During Transport*, Dep't for Env't Food & Rural Affairs (June 13, 2011), https://www.gov.uk/government/publications/welfare-of-animals-during-transport.

[328] *Id.*

[329] *Id.* at 3.

[330] *Id.*

[331] *See* The Welfare of Animals (Transport) Order 2006, No. 3260 (England).

[332] *Id.*

ii. United Kingdom's Welfare of Animals Transport Order

In 2006, England presented The Welfare of Animals (Transport) Order which came into force in 2007.[333] This Order was created to administer and enforce the Council Regulation on the protection of animals during transport and related operations.[334] However, the Order incorporated new provisions aimed at providing protection to those animals excluded in the E.U. Council Regulation (EC) No 1/2005, such as companion animals.[335] The Order also applies to the transport of cold-blooded, invertebrate animals.[336] The general provision states that "it is an offen[s]e to transport any animal in a way which causes, or is likely to cause, injury or unnecessary suffering to that animal."[337] Further, "it is an offen[s]e to transport any animal except in such receptacles or means of transport, under conditions…and with such supply of liquid and oxygen, as are appropriate for the species concerned."[338] The Order is enforced by the local authority appointed by the Secretary of State.[339] "If an inspector considers animals are being transported, or are to be transported, in a way which—a) contravenes any provision of this Order; or b) constitutes an offen[s]e against the Act by virtue of this Order, he may serve a notice" to ensure compliance with the Order.[340] An inspector may "prohibit the transport of animals," terminate the journey, order the animals to be returned, "require the animals to be held in suitable accommodation with appropriate care[,]" or "require a means of transport or container to be repaired or replaced."[341] To this day, there are no reports of air carriers in non-compliance with the Order.[342]

The only E.U. legislation that applies to the non-commercial movement of pet animals traveling to the E.U. is aimed to prevent the transmission of zoonotic diseases.[343] The European Parliament and Council Regulation (EC) No 998/2013 on the intra-E.U. movements of pets and entry into the E.U. came into effect in 2014.[344] The legislation requires a household pet entering an E.U. member state for the first time

[333] *Id.*
[334] *Id.* at 3.
[335] *Id.*
[336] *Id.*
[337] *Id.*
[338] *Id.*
[339] *Id.* at 6.
[340] *Id.* at 8.
[341] *Id.*
[342] Cardon, *supra* note 199.
[343] *Non-commercial movement from non-EU countries*, European Comm'n, https://ec.europa.eu/food/animals/pet-movement/eu-legislation/non-commercial-non-eu_en (last visited Feb. 23, 2018).
[344] *Id.*

must have a certificate and comply with certain heath requirements.[345] Additionally, the legislation introduced a new pet passport.[346] The passport gathers information about the pet's parents, description of the animal, marking of the animal, issuing of the passport, rabies serological test, Echinococcus treatment, and clinical examination.[347]

iii. International Air Transport Association (IATA)

In the E.U., there is no legislation to protect pets during air transport; however, like in the U.S., there are transport standards for companion animals, which are established by the International Air Transportation Association (IATA).[348] The requirements are very similar to those established by APHIS in the U.S.[349] However, unlike APHIS, IATA is not a regulatory body; therefore, the standards are not legal requirements.[350] IATA simply provides guidelines for approximately 230 member airlines to follow and implement accordingly.[351] IATA guidelines pertain to container requirements, preparation before dispatch, feeding and watering requirements, and general care and loading.[352] The container requirements include specific details for the design, material, size, frame, sides, handles, floor, roof, door, and ventilation.[353] While some IATA standards have ambiguous or vague terms, others provide more specific description than the U.S. animal welfare regulations.

Both APHIS and IATA have set similar requirements for the use of primary enclosure, feed and water, labeling, and shippers documents.[354] However, IATA provides more specific description for the containers airlines should accept.[355] While the U.S. animal welfare regulations prohibit containers constructed with toxic materials, IATA

[345] Consejeria de Agricultura, Alimentacion, y Medio Ambiente, *Information About the Non-Commercial Movement of Pet Animals Travelling into Spain*, Embassy of Spain—USA (July 2016), http://www.exteriores.gob.es/Embajadas/WASHINGTON/en/InformacionParaExtranjeros/Documents/INFORMATION%20NON%20COMMERCIAL%20MOVEMENT%20ANIMAL%20PETS%20rev.feb.jul.2016.pdf.

[346] *The EU Pet Travel Scheme: The New Pet Passport*, Dep't for Env't Food & Rural Affairs, http://ahvla.defra.gov.uk/external-operations-admin/library/documents/exports/ET141_v1.pdf (last visited Feb. 23, 2018).

[347] *Id.*

[348] *Live Animal Regulations*, IATA 217-24 (Jan. 2018) [hereinafter *Live Animal Regulations*], https://www.iata.org/whatwedo/cargo/live-animals/Documents/pet-container-requirements.pdf.

[349] *Id.*

[350] *Id*. at 218.

[351] *Id.*

[352] *Id*. at 217.

[353] *Id*. at 219-21.

[354] *Id.*

[355] *Id.*

standards describe precisely the types of materials containers must be constructed with in order to be accepted.[356] Besides the materials, IATA standards also mention more specific details about the container design on the frames, sides, door, and handles.[357]

Moreover, IATA recommends to "feed the animal only a light meal and a short drink approximately two hours before dispatch[,]" while the U.S. animal welfare regulations provide that food and water must have been offered to the animal during the four hours before delivery to the carrier.[358] IATA acknowledges the peculiar and fragile nature of brachycephalic breeds; thus, it created specific guidelines to improve their likelihood of survival.[359] To keep these breeds free from respiratory troubles, IATA requires their containers to have open bars from the top to the bottom of the box for ventilation.[360] Careful measures are also recommended for loading brachycephalic breeds, as they must be stowed as far away as practical from other loads to ensure they have the largest amount of air space available in the hold.[361] IATA also recommends that "if it is necessary to open the box for any reason, this must always be done in an enclosed area in order to prevent the animals from escaping."[362] The U.S. animal welfare regulations do not require handling personnel to remove a dog or cat from the enclosure in an enclosed area, but when doing so, the procedure must be completed in a way that safeguards the dog or cat from injury and prevents escape.[363] Accompanying documents should include the shippers information, feed and water instructions, and drug administration instruction.[364] IATA lacks guidelines for the treatment of pets while in transit, or for animals in holding facilities.

V. Lawsuits

The death of a pet during air transport is always considered a tragedy, but there is more of a public outrage when an air carrier appears to be responsible. Throughout recent years, some pet owners have filed lawsuits against airlines in an effort to hold them accountable for the fate of their pets. However, their battle for justice usually ends with a small monetary compensation.

---

356 *Id*. at 219.
357 *Id.*
358 *Id.* at 222.
359 *Id.*
360 *Id.*
361 *Id.* at 224.
362 *Id.*
363 9 C.F.R. § 3.14(b).
364 *Live Animal Regulations*, *supra* note 348, at 217.

a. International Lawsuits

In 1996, Lilo Juan Hipolito sued Aerolíneas Argentinas S.A. for the death of his German Shepherd.[365] Mr. Hipolito was traveling from Frankfurt, Germany to Ezeiza, Argentina when the animal apparently succumbed to the stressful conditions of transit.[366] Mr. Hipolito alleged the airline should be responsible for the death of the animal, since it was under the airline's care when the death occurred.[367] Additionally, the airline had agreed via contract to transport his pet and return the animal in the same condition as which it was delivered.[368] The plaintiff alleged material damage for the loss of the animal.[369] Since the flight was international, rules governing international shipping had to be applied, with the case eventually being settled according to the Warsaw Convention.[370]

The Warsaw Convention is an international agreement that regulates liability for "international carriage of persons, luggage, or goods performed by aircraft for reward."[371] The Warsaw Convention was first signed in 1929, but it has since been amended several times, with the last amendment in 1999 called the Montreal Convention.[372] Article 17 of the Warsaw Convention establishes the basis for checked baggage liability as follows:

> [T]he carrier is liable for damage sustained in the event of the death or wounding of a passenger or any other bodily injury suffered by a passenger, if the accident which caused the damage so sustained took place on board the aircraft or in the course of any of the operations of embarking or disembarking.[373]

Article 18 establishes the principles for cargo liability and states: "The carrier is liable for damage sustained in the event of the destruction or

---

[365] *Mascota fallecia—Lillo contra Aerolíneas Argentinas*, Problemas Con Tu Vuelo Blog (Sept. 11, 2009), http://problemascontuvuelo.blogspot.com.es/2009/09/lillo-contra-aerolineas-argentinas.html.

[366] *Id.*

[367] *Id.*

[368] *Id.*

[369] *Id.*

[370] *Warsaw Convention*, Bus. Dictionary ("Warsaw Convention" is an "international civil aviation agreement that establishes the legal framework for carriage of passengers, luggage (baggage), and goods (cargo)").

[371] Convention for the Unification of Certain Rules Relating to International Carriage by Air, Oct. 12, 1929, 49 Stat. 3000.

[372] *Id.*

[373] *Id.* at art. 17.

loss of, or of damage to, any registered luggage or any goods, if the occurrence which caused the damage so sustained took place during the carriage by air."[374] The liability penalties established in Article 22 state that "the liability of the carrier is limited to a sum of 250 francs per kilogram, unless the consignor has made, at the time when the package was handed over to the carrier, a special declaration of value at delivery and has paid a supplementary sum."[375]

In Mr. Hipolito's case, the Court of First Instance found the airline was at fault because the cargo compartments did not possess the appropriate conditions to transport the animal safely, and the airline failed to prove the animal died of natural causes.[376] The Court ordered the airline to pay Mr. Hipolito $10,235 in damages.[377]

In another case, the plaintiff claimed moral damages for the emotional distress caused by the death of the animal, as well as material damages for the loss of the animal.[378] The Court of First Instance granted the motion for material damage, but dismissed the claim for moral damages.[379] The decision was appealed and the Court of Appeals granted both claims, ordering the airline to pay $6,000 for moral damages and $1,300 for material damages.[380] The Court of Appeals disagreed with the Court of First Instance on the claim of moral damages, stating that there was no doubt the death of the animal caused more than just material damage.[381] Further, the Court of Appeals went on to state that the transport of animals as luggage has peculiar characteristics, since the animal is alive while in transport.[382] The Court of Appeals proceeded to add that the disruption of peace and comfort the plaintiff had to bear after such dilemma, aggravated by the occurrence in a foreign country, must be taken into account when sorting out compensations.[383] This case shows that courts will recognize infliction of emotional distress for the loss of an animal. Additionally, this case shows courts acknowledge that animals are not merely beings, but living beings worth more than their economic value.

---

[374] *Id.* at art. 18.

[375] *Id.* at art. 22.

[376] *Mascota fallecia—Lillo contra Aerolíneas Argentinas*, *supra* note 365.

[377] *Id.*

[378] Cristina U. Busquets & Carlos V. Molina, *Transporte en Animales de Compañía*, Deontologia y Veterinaria Legal, https://ddd.uab.cat/pub/trerecpro/2010/80121/transporte_en_animales_de_compania.pdf.

[379] *Id.*

[380] *Id.*

[381] *Id.*

[382] *Id.*

[383] *Id.*

b. United States

When animals are transported in airplanes, they do not get an assigned seat in the cabin like human passengers; instead, animals are placed in the cargo compartment or underneath a passenger's seat, evidencing that air carriers consider animals as baggage and treat them accordingly. United Airlines defines baggage as "reasonable articles, effects and other personal property of a ticketed Passenger as are reasonably necessary or appropriate for the wear, use, comfort or convenience of the Passenger in connection with the Passenger's trip. Unless otherwise specified, it shall include both checked and unchecked baggage and property of the Passenger."[384] The U.S. common law also considers animals as property.[385] Because animals are considered property by carriers and the law, they are governed by the contract of carriage.[386]

i. Contract of Carriage

When passengers buy a plane ticket to transport their pets, they are paying for a specific service and the ticket itself establishes the terms and conditions of transport.[387] The ticket acts as a contract between the carrier and the shipper.[388] Once an airplane ticket is purchased, the traveler is legally bound to what is known as a "contract of carriage," which is non-negotiable.[389] In the case of companion animals, an "excess baggage ticket" may be purchased, which refers the passenger to the ticket for the terms of the contract.[390] Additionally, the companion animal could travel as cargo or freight, and the air waybill acts as the contract of carriage.[391] Further details of the contract might not appear on the ticket, but are referred to by incorporation.[392] Some of the incorporated details often include claim restrictions and the ability to exclude or limit liability for damage, loss, or delay to cargo or baggage.[393]

---

[384] *Contract of Carriage Document*, United Airlines (Feb. 16, 2018), https://www.united.com/web/en-US/content/contract-of-carriage.aspx#sec1.

[385] Noreen Lanza, *Keeping the "Live" in the Live Animal Air Cargo Transport*, 76 J. Air L. & Com. 229, 236 (2011).

[386] Erin Sheley, *"Live Animals": Towards Protection for Pets and Livestock Contracts for Carriage*, 3 J. Animal L. 59, 63 (2007).

[387] Gluckman v. American Airlines, Inc., 844 F. Supp. 151, 154-55 (S.D.N.Y. 1994).

[388] Lanza, *supra* note 385, at 234.

[389] *Id.* at 235.

[390] *Id.* at 234.

[391] *Id.*

[392] *Id.*

[393] *Gluckman*, *supra* note 387, at 155.

In 1988, Mr. Gluckman bought an airline ticket for his Golden Retriever from Phoenix, Arizona to New York City, New York.[394] Due to mechanical problems, the airplane was delayed for over an hour.[395] The temperature in Arizona during the delay spiked to 115°F.[396] Since the animal was on board during the delay, it suffered a heat stroke and ultimately had to be euthanized by a veterinarian.[397] Mr. Gluckman, in the Southern District of New York, alleged "both compensatory and punitive damages as a result of [the dog's] death and his own emotional distress," "compensatory damages for loss of the companionship of his pet," "compensatory damages for [the dog's] own pain and suffering," "compensatory damages based upon the 'tort of outrage,'" and breach of contract.[398]

The court dismissed Mr. Gluckman's claim of emotional distress, stating that under New York law, "a cause of action for negligent infliction of emotional distress 'arises only in unique circumstances, when a defendant owes a special duty only to plaintiff, or where there is proof of a traumatic event that caused the plaintiff to fear for her own safety.'"[399] The court held that "New York law does not permit recovery for mental suffering and emotional disturbance as an element of damages for loss of a passenger's property."[400] The court dismissed Mr. Gluckman's claim of intentional infliction of emotional distress, holding that there was no allegation, or evidence of, American Airlines' conduct being directed intentionally at Mr. Gluckman.[401] The court dismissed Mr. Gluckman's claim for loss of companionship, holding that New York law recognizes "no independent cause of action for loss of the companionship of a pet."[402] The court dismissed Mr. Gluckman's claim for the dog's own pain and suffering, holding that "there is not…yet a cause of action recognized for the pain and suffering of an animal."[403] Finally, the court denied American Airlines' motion for summary judgment relating to Mr. Gluckman's breach of contract claim, holding that there was an "issue of fact as to whether Gluckman was afforded reasonable notice" his animal would be considered luggage and placed in the cargo compartment.[404] Because U.S. courts have yet to recognize infliction of emotional distress due to the death of pets during

394 *Id.* at 154.
395 *Id.*
396 *Id.*
397 *Id.*
398 *Id.* at 156.
399 *Id.* at 157.
400 *Id.* (citing Young v. Delta Airlines, Inc., 432 N.Y.S.2d 390 (1980)).
401 *Id.* at 158.
402 *Id.*
403 *Id.* at 159.
404 *Id.* at 162.

air transport, as it stands now, any justice for the animal likely lies in the contract of carriage. However, the contract of carriage generally limits airlines' liability for the death or loss of animals to the mere market value of the animal.[405]

VI. Commercial Airline Policies for Service Animals

The animals that enjoy the best accommodations in commercial airplanes are service animals. Service animals are allowed to travel in the passenger cabin without additional costs.[406] Laws grant superior consideration to service animals due to their vital role in the life of people with disabilities.[407]

In the U.S., the Americans with Disabilities Act (ADA) makes it illegal to deny the entrance of individuals with disabilities to places of public accommodation.[408] Since many people with disabilities choose to have a service animal, these animals are accepted on airplanes. However, the animal's acceptance is conditioned on the appropriate documentation, including health documents required by every airline.[409]

Rules regarding accommodations of service animals are different than pets traveling with their owners. Airlines allow service animals to travel on their handler's lap or in the floor space in front of their handler's seat.[410] Service animals are allowed in the aircraft cabin, even when pets are not allowed.[411] Surprisingly, some airlines even accept service animals of species that are regularly prohibited to travel in the passenger cabin as pets; for example, United Airlines accepts monkeys as service animals.[412]

While the ADA establishes that individuals with disabilities must be allowed in public places, the Air Carrier Access Act (ACAA) specifically prevents discrimination against individuals with disabilities by air carriers.[413] The ACAA permits service animals to accompany a passenger with disabilities.[414] "Carriers are not allowed to deny

---

[405] *Id.* at 158.

[406] *All About Service Animals*, Nat'l Serv. Animal Registry (July 2017), https://www.nsarco.com/esa-registration-and-your-legal-rights.html.

[407] *Id.*

[408] Rebecca J. Huss, *Why Context Matters: Defining Service Animals Under Federal Law*, 37 Pepp. L. Rev. 1163, 1165 (2010).

[409] *Service Animals*, Am. Airlines (June 2017), https://www.aa.com/i18n/travel-info/special-assistance/service-animals.jsp.

[410] *Id.*

[411] *Id.*

[412] *Service Animals*, United Airlines (July 2017), https://www.united.com/web/en-US/apps/booking/flight/travelerServiceAnimal.aspx.

[413] Huss, *supra* note 408, at 1203.

[414] *Id.* at 1204.

transportation to a service animal on the basis that its carriage may offend or annoy carrier personnel or persons traveling on aircraft."[415] In order to determine the identity of the service animal, "carriers may accept identification cards, other written documentation, …or verbal assurance[;]" however, neither the ADA nor ACAA are allowed to require "written credentials for an animal as a condition for treating it as a service animal."[416] The ACAA even addresses liability concerning service animals, stating that an air carrier cannot require a passenger to sign a waiver of liability for the loss, death, or injury to service animals.[417]

In Europe, a similar statute to the ADA exists—EU Regulation 1107/2006 concerns the rights of disabled persons and persons with reduced mobility when traveling by air.[418] The legislation requires airports to provide properly trained staff to support individuals with disabilities and their assist devices.[419] The assistance is free of charge, but airlines must be informed prior to flight of any service animal traveling.[420] The transport of service animals is subject to national regulations.[421] In the United Kingdom, service animals are allowed to travel any route approved by the Animal Health and Veterinary Laboratory Agency.[422] The service animal must comply with the same health regulations as any other pet.[423]

The legislation states that where "assistive devices are lost or damaged whilst being handled at the airport or transported on board aircraft, the [owner] shall be compensated, in accordance with rules of international, Community and national law."[424] If airlines can provide better accommodations for service animals, surely the same treatment can be extended to companion animals.

---

[415] *Id.*

[416] *Id.*

[417] *Id.*

[418] Regulation 1107/2006, of the European Parliament and of the Council of 5 July 2006 concerning the Rights of Disabled Persons with Reduced Mobility when Travelling by Air, 2006 O.J. (L. 204) 2.

[419] *Id.* at 3.

[420] *Flying with an Emotional Support Animal or a Psychiatric Service Dog*, Serv. Dog Cent. (July 2017), http://www.servicedogcentral.org/content/ESA-flying.

[421] Service Animals, Dep't of Transp. (2017), https://www.transportation.gov/individuals/aviation-consumer-protection/service-animals-including-emotional-support-animals.

[422] *Travelling with Assistance Dogs in Europe*, Seat Maestro (July 2017), https://www.seatmaestro.com/travelling-with-assistance-dogs-in-europe/.

[423] *Id.*

[424] *See* Regulation 1107/2006 of the European Parliament and of the Council, *supra* note 418, at 9.

a. Policies of U.S. Carriers and Non-U.S. Carriers

Airlines are entitled to establish their own policies, rules, and restrictions regarding the transport of companion animals. While some policies are established to comply with federal regulations, others are established for the benefit of business.

The acceptance of animals is exclusively reserved to each airline, and each airline limits the number of animals allowed on each flight.[425] The types of animals accepted varies with each airline.[426] For example, Iberia accepts dogs, cats, turtles, and birds inside the passenger cabin.[427] United Airlines accept dogs, cats, rabbits, and birds inside the cabin.[428] American Airlines only accepts dogs and cats.[429] The discrepancy in acceptance between airlines could be attributed to inconvenient events involving a specific animal or driven by economics.

Animals transported in-cabin are subject to a service charge that usually surpasses $100.[430] In-cabin travel is on a space-available basis, pets are expected to stay inside a kennel during the entire flight, and passengers with animals will not be able to occupy emergency exit row seats.[431] The implementation and enforcement of these policies falls completely at the hands of the airline.

Some airlines accept certain species simply because of an economic advantage.[432] Middle Eastern airlines such as Emirates, Etihad Airways, Qatar Airways, and Lufthansa accept falcons in-cabin.[433] Airlines in the Middle East transport birds for hunting purposes, with each bird worth around $8,000.[434] Lufthansa seems to show more appreciation for these animals and allows VIP passengers to bring their falcons in the cabin during flight.[435] In the case of Etihad Airways, passengers are allowed two falcons per seat, with two extra birds allowed if an extra

---

[425] *Traveling with your Pet*, J. Am. Veterinary Med. Ass'n (Mar. 2017) [hereinafter JAVMA, *Traveling with your Pet*], https://www.avma.org/public/PetCare/Pages/Traveling-with-Your-Pet-FAQs.aspx.

[426] *Id.*

[427] *Viajar con Animales*, Iberia (May 2017), http://www.iberia.com/es/viajar-con-iberia/animales/.

[428] *Travelling with In-Cabin Pets*, United Airlines (July 2017) [hereinafter United, *In-Cabin Pets*], https://www.united.com/web/en-US/content/travel/animals/in_cabin.aspx.

[429] *Travelling with Pets*, American Airlines (Mar. 2017) [hereinafter American, *Travelling with Pets*], https://www.aa.com/i18n/travel-info/special-assistance/pets.jsp.

[430] United, *In-Cabin Pets*, *supra* note 428.

[431] *Id.*

[432] Tristan Bradfield, *Transport of Bird Prey*, IATA Symposium (2017).

[433] *Id.*

[434] *Id.* at 41.

[435] *Id.* at 44.

seat is purchased; economy passengers are allowed one bird per seat.[436]

A common policy of every airline is the requirement of valid health certificates, entry permits, and other documentation required by countries of entry or transit.[437] However, most policies are directed to restrictions on breed, size, and weather.[438] In 2010, due to the high death toll in brachycephalic breeds, American Airlines stopped transporting the breed as checked baggage.[439] Delta did the same a year later.[440] Instead, Delta Cargo was selected to transport these breeds.[441] Unfortunately, brachycephalic breeds continue to die, even when transported in non-commercial airplanes.[442] On September 28, 2015, Delta Cargo agreed to transport an American Bulldog of unknown age from Georgia to Michigan, with departure temperatures of 72°F.[443] The necropsy report found the animal died due to Brachycephalic Obstructive Airway Syndrome.[444]

United Airlines has not completely banned brachycephalic breeds, but has instead established special policies regarding some brachycephalic breeds (American Bulldogs, Boston Terriers, Pugs, and mixed breeds).[445] The airline has established weather and seasonal restrictions uniquely for the above-mentioned breeds.[446] None of these breeds will be accepted between mid-May and mid-September.[447] These breeds are allowed to travel the rest of the year, pending forecast temperatures less than 85°F.[448]

On May 14, 2015, a four-year-old French Bulldog traveling with United Airlines was discovered deceased shortly before loading onto the flight.[449] The necropsy report determined the cause of death to be Brachycephalic Obstructive Airway Syndrome with pre-existing Hypertrophic Cardiomyopathy.[450] On September 30, 2016, a seven-year-

---

[436] *Id.* at 45.

[437] JAVMA, *Traveling with your Pet*, *supra* note 425.

[438] *Id.*

[439] Christine Haughney, *Banned by Man Airlines, These Bulldogs Travel Private*, N.Y. Times (Oct. 6, 2011), http://www.nytimes.com/2011/10/07/nyregion/banned-by-many-airlines-these-bulldogs-fly-private.html.

[440] *Id.*

[441] Nikki Ekstein, *Delta is Taking a Strong Stance About Flying With Dogs*, Travel & Leisure (Mar. 8, 2016), http://www.travelandleisure.com/articles/delta-bans-pets-in-cargo.

[442] Where is Jack?, *supra* note 29, at 83.

[443] *Id.*

[444] *Id.*

[445] *Pet Travel Restrictions*, United Airlines (July 2017), https://www.united.com/ual/en/us/fly/travel/animals/restrictions.html.

[446] *Id.*

[447] *Id.*

[448] *Id.*

[449] Where is Jack?, *supra* note 29, at 80.

[450] *Id.*

old American Staffordshire Terrier traveling with United Airlines passed away from a heat stroke.[451] On June 28, 2015, a one-year-old American Bulldog traveling with United Airlines was discovered deceased upon arrival, with the cause of death attributed to a heat stroke.[452] Brachycephalic breeds continue to succumb to heat stroke regardless of the weather and airlines' seasonal restrictions. While the decision to stop transporting these breeds might save the lives of many, it took years for airlines to make a change.[453] Investigations carried out in the seventies and eighties revealed that conditions were (and continue to be) inappropriate for the transport of animals, especially for Brachycephalic breeds.[454] However, minimal action was taken by the government and airlines to improve conditions or cease transport altogether.

Brachycephalic breeds are not the only breeds that suffer heat stress or die of heat stroke; therefore, simply banning Brachycephalic breeds from air travel does not address the problem. On August 4, 2016, a Russian Terrier of unknown age showed signs of heat stress upon arrival to Orlando, Florida from Sydney, Australia.[455] In September 2012, a two-year-old Golden Retriever traveling from New York to San Francisco died of a heat stroke; shockingly, the temperatures on that day ranged from 57°F to 73°F.[456] On November 30, 2016, two Rottweilers traveling with American Airlines were taken to a veterinary clinic to be examined after one of them was found weak and gasping for air; the dog later died.[457]

The previous examples show that the problem does not depend on the type of animal, but rather, the conditions in which the animals are transported and the various steps involved during air transport. Airlines are aware that cargo compartments do not provide suitable conditions to ensure the safety and welfare of the animal; therefore, they have developed guidelines and established restrictions on breed, weather, and season to protect themselves from liability.[458] Airlines have established specific guidelines for the loading and unloading process to minimize incidents and continue to transport animals. Ground handlers are supposed to load animals last to the aircraft compartment; avoid placing animals directly under the sun; avoid placing animals in combination

[451] *Id.* at 89.

[452] *Id.* at 82.

[453] Hanneman, *supra* note 1.

[454] *Id.*

[455] Where is Jack?, *supra* note 29, at 89.

[456] Nina Golgowski, *United Airlines Killed Our Golden Retriever*, Daily Mail (Sept. 2012), http://www.dailymail.co.uk/news/article-2206495/United-Airlines-Killed-Our-Golden-Retriever-Model-Maggie-Rizer-writes-emotional-attack-dogs-death.html.

[457] Where is Jack?, *supra* note 29, at 90.

[458] Hanneman, *supra* note 1, at 10.

with cargo that contain "a lot of moisture on the container, such as rain, snow, or ice[;]" and close cargo doors last before departure.[459]

Airlines have also established temperature restriction policies. For example, American Airlines established temperature restrictions in animal holding areas, terminal facilities, when moving the animals between terminals, the airplane, and awaiting departure.[460] The policy states that an animal will not be able to travel if forecast temperatures are above 85°F or below 45°F.[461] Incidents continue to occur despite these restrictions.[462] In 2010, seven dogs died on an American Airlines flight traveling from Oklahoma to Chicago.[463] The flight was an hour late taking off from Oklahoma, where temperatures were already above 86°F before departure.[464]

Air Europa established a policy which requires all potentially dangerous dogs wear a muzzle during air transport; this policy was enacted to avoid damage to the transport container and the employees.[465] However, a muzzle can worsen the effect air transport normally has on the animal.[466] A muzzle can restrict the animal from panting properly, which is the way dogs cool down since they cannot sweat.[467] The animal can be seriously injured trying to take off the muzzle, adding another stress factor to the animal during air transport.[468]

Other airline policies are established to comply with federal regulations. For example, American Airlines will not allow pets as checked baggage on flights longer than twelve hours to comply with the USDA regulation requiring animals be offered water every twelve hours.[469] Additionally, airlines will not accept pets less than eight weeks old, per federal regulations.[470] However, the fact that these regulations exist does not mean they are properly enforced. On February 15, 2015, a puppy traveling with United Airlines was found deceased and cold to the touch, with the necropsy report showing the animal could have been

---

[459] Le Luong, *supra* note 7.

[460] American, *Travelling with Pets*, *supra* note 429.

[461] *Id.*

[462] *Seven Dogs Dead After American Airlines Flight*, CNN (Aug. 5, 2010), http://www.cnn.com/2010/TRAVEL/08/04/illinois.airline.dog.deaths/index.html.

[463] *Id.*

[464] *Id.*

[465] *Transporte de Animales*, Air Europa (May 2017), https://www.aireuropa.com/airstatic/contents/animales_es.pdf.

[466] Jessica Rollins, *Dog Muzzle Safety Guide*. *How to Best Use Muzzles with Your Dog*, Pet Expertise (Sept. 15, 2011), http://www.petexpertise.com/dog-muzzle-guide.html.

[467] *Id.*

[468] *Id.*

[469] American, *Travelling with Pets*, *supra* note 429.

[470] *Id.*

as young as four weeks of age.[471] No liability was established against the carrier.[472]

Airline policies were established to protect the business, rather than the animals.[473] The emphasis of airlines has always been, and will continue to be, carrying people.[474] To provide the appropriate conditions to transport animals, airlines would have to invest in several very expensive systems of air-conditioning and ventilation, which is difficult to justify unless revenue from animal carriage becomes significant.[475] Even though the air transport of pets is flourishing, it is still a very limited market, and often not seriously considered by airlines, but rather viewed as a "sideline business not worthy of significant investment in equipment and staff."[476]

VII. Conclusion

During air transport, animals are placed in a state of constant stress that negatively impacts their welfare. Air transport breaches all five freedoms essential to ensure good animal welfare. Air transport elicits fear and distress, restricts food intake, limits water availability, prevents the animal from expressing normal behavior, impairs comfort, and can cause pain, injury, and death. To make matters worse, air carriers fail to provide suitable conditions inside the cargo compartments in which most animals are transported. The inappropriate travel conditions have been the cause of countless harmful incidents and deaths of companion animals to this day.

The air transport of pets must be transformed, starting with the conditions in which animals are transported in cargo compartments. Prior to any change, an in-depth study should be conducted to obtain information about the suitable conditions air transport must provide to ensure the safety and welfare of different animals. Because cargo compartments are generally designed with fire safety in mind, it is unlikely that conditions inside the cargo compartments would be amenable to improvement. Therefore, other transport options should be considered. In-cabin transport offers an alternative where animals could be monitored and conditions could be regulated accordingly. If air carriers cannot find a viable alternative to cargo compartments, air carriers should cease transporting animals in them.

---

[471] Where is Jack?, *supra* note 29, at 77.

[472] *Id.*

[473] Pittelkow, *supra* note 19, at 28.

[474] *Id.*

[475] *Id.*

[476] *Id.*

Airlines continue to neglect the well-being of companion animals, while benefitting economically from their transport. Their continuous disregard for the safety and welfare of animals is caused by the current legal status of animals as property and the poorly-enforced animal welfare legislation. As long as animals continue to be considered property under the law, airlines will continue to provide the same treatment and cause thousands of deaths in the process. A new legal status for animals would force airlines to consider animals as more than just luggage.

Laws governing the air transport of pets need to be reformed. In the United States, the Animal Welfare Act appears to safeguard the welfare of animals during air transport, but the vague standards, insufficient enforcement, and weak penalties allow air carriers to provide subpar conditions for animal travel. The true purpose of this legislation should be questioned, since after years of countless incidents, airlines continue to be allowed to transport animals. Unfortunately, the air transport of pets benefits the airlines, and not the pets. Laws in the E.U. are even more insufficient. With no law governing companion animals during air transport, pets are at the mercy of each member state to advocate for their protection. Absent any meaningful legislation, their safety continues to be compromised.

Ultimately, the decision to transport companion animals by air rests completely on the pet owner. If pet owners chose to stop supporting air carriers that do not care for the animal's welfare, this would change the business of air transport of animals. The countless injuries and deaths of pets during air transport has only cost airlines a small amount of money, but ultimately, the animals are the ones paying the highest price of all.

Greyhound Racing: An Analysis of State Laws and Regulation

Kaitlin Mee

I. Introduction

Three, two, one and eight racing greyhounds propel from the box, vigorously. The hare is released and runs on the railroad like fixture surrounding the perimeter of the racing track. An announcer, sounding like an actioner, narrates the race. Yelling out the dogs' names, their position on the track, their relation to the other dogs, and the dog that surpasses all others and takes the win.

II. History of Animal Treatment

Violence against animals has existed for centuries, and in many instances violence against animals has been an acceptable way to express one's culture and societal beliefs.[1] From intentionally torturing domestic animals to hunting, it was not until the nineteenth century that public policy shifted and encouraged change.[2] The theory behind the treatment of animals is to "exercise…justifiable dominion over [ ] property or as an amusing spectacle."[3] While the relationship between animals and humans has evolved over time, the relationship has been closely related to property rights.[4] And because animals have been considered property, animals have been slow to receive rights, but animals are also our pets and companions, which has made the cause sympathetic.[5]

Currently, there are two federal laws that regulate the treatment of animals: the Animal Welfare Act and the Humane Slaughter Act.[6] The Animal Welfare Act and the Humane Slaughter Act both place restrictions on animal research, entertainment, breeding, and transportation of livestock.[7] These laws are not likely to be sufficient, as they "provide only minimal protection and represent a balance between not causing an animal undue pain and suffering and using them for human benefit."[8]

---

[1] Margit Livingston, *Desecrating the Ark: Animal Abuse and the Law's role in Prevention*, 87 Iowa L. Rev. 1, 3 (2001).

[2] *Id.*

[3] *Id.*

[4] *Id.*

[5] *Id.*

[6] Animal Welfare Act P.L. 89-544; Humane Slaughter Act P.L. 85-765.

[7] *Id.*

[8] Livingston, *supra* note 1, at 3.

While both the Animal Welfare Act and the Humane Slaughter Act are a first step in regulating animal treatment and abuse, the acts do not protect animals from being used in scientific research and entertainment.[9]

For the purposes of this article, the history of animal treatment will be digested into several categories: the relationship between humans and animals; animal abuse as it relates to religious views and opinions; and animal abuse and the correlation to other violent crimes.

III. Breed Information

The greyhound breed falls within the American Kennel Club Hound Group, averages twenty-seven to thirty inches in height, and weighs approximately sixty to seventy pounds.[10] The greyhound's temperament is quiet and independent, and like other large breed dogs requires proper socialization to gain confidence.[11] Greyhounds are known to be timid and shy with a strong prey drive and chasing instinct.[12] A particular variation of the greyhound breed came from cross breeding with an English bulldog, called the King Cob.[13] Today, racing greyhounds' genealogy can be traced back to the King Cob Greyhound.[14]

The greyhound's history has not always been tied to the commercial racing industry. Breeding of greyhounds can be traced all the way back to ancient Egypt.[15] In early Egyptian culture, dogs had a special relationship with Egyptian royalty.[16] Researchers have found from hieroglyphics and burial grounds that greyhound-like dogs were mummified and buried with their owners.[17] The greyhound breed of dog also has ties to ancient Arabs, where the dogs were allowed to share their owner's tents and ride on top of camels.[18] Researchers and historians believe that these privileges were exclusively reserved for greyhounds.[19] Additionally, at this time the Arabs placed high value and importance on a greyhound that had a litter of puppies.[20] The birth of greyhound

---

[9] *See* Animal Welfare Act P.L. 89-544; *See also* Humane Slaughter Act P.L. 85-765.

[10] PetGuide, *Greyhound*, PetGuide, https://www.petguide.com/breeds/dog/greyhound/.

[11] *Id.*

[12] *Id.*

[13] William Norman Thompson, *Gambling in America: An Encyclopedia of History, Issues, and Society*, 93 ABC-CLIO, 2nd Edition (2001).

[14] *Id.*

[15] Addie Patricia Asay, *Greyhounds: Racing to their Deaths*, 32 Stetson L. Rev. 433, 436 (2003).

[16] *Id.*

[17] *Id.* at 435-36.

[18] *Id.*

[19] *Id.* at 436.

[20] *Id.*

puppies was considered as important as the birth of one's own child.[21] While greyhounds originated in the desert region of Egypt, the dog eventually migrated to "Persia, Russia, and Greece;" additionally, the greyhound was also the only dog mentioned in the bible.[22]

The greyhound's well respected and royal connection continued when the breed moved to Britain.[23] Noblemen were required to hunt exclusively with the aid of a greyhound, which was prescribed in the Forest Laws by King Canute of England.[24] When the greyhound was moved to the United States of America, farmers used Greyhounds to control the jackrabbit population.[25] And while greyhounds are not a typical hunting dog-breed, because of their ability to run up to 45 miles an hour and their keen eyesight, they were useful for hunting small rodents.[26] The greyhound's speed eventually led to the use of the dogs in entertainment.[27]

IV. History of Greyhound Racing

Starting in the nineteenth century, greyhounds were used in a game called coursing; coursing incorporated the greyhound's skill of sight and speed.[28] The greyhounds chase an artificial hare that was mounted on a 400-yard rail.[29] The rail would carry the hare through tall grass, mimicking the real animal at a speed desired by the participants.[30] The dogs are released immediately after the artificial hare where they bound through the tall grass chasing the hare.[31] Coursing evolved into a competitive sport because of the greyhound's speed; typically two greyhounds were "matched against one another in a race for the game. The owners of the dogs usually had a sizeable bet on the result and, at some coursing races, spectators also gathered and placed side bets on one dog or the other."[32]

---

[21] The Greyhound Racing Association, *The Most Exciting Dogs in the World:*, The Greyhound Racing Association of America, http://www.gra-america.org/the_sport/history.html.

[22] Asay, *supra* note 15.

[23] *Id.* at 437-38.

[24] *Id.*

[25] *Id.* at 437.

[26] The Greyhound Racing Association of America, *supra* note 32.

[27] Asay, *supra* note 15, at 437.

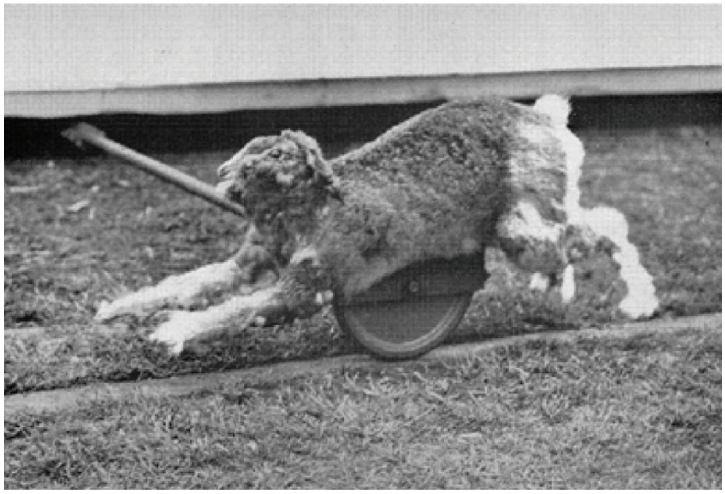
[28] *Id.* at 433, 436.

[29] Smith, A. Croxton, *Greyhound Racing & Breeding (A Vintage Dog Books Breed and Classic)*, Chapter 1, page 1 (2005).

[30] *Id.*

[31] *Id.*

[32] The Greyhound Racing Association of America, *The Most Exciting Dogs in the World*, The Greyhound Racing Association of America, http://www.gra-america.org/the_sport/history.html.

 [33]

Racing greyhounds in a commercial setting evolved from the game of coursing; the greyhound's prey drive allowed the dogs to be easily trained to run in a circle.[34] Greyhound racing started as early as 1848 in the United States; specifically, between the years of 1922 and 1925 when the first greyhound-racing track was opened in Florida.[35] After a successful practice was established in Florida, greyhound racing tracks started popping up in Kentucky, Louisiana, Wisconsin, Montana, and Missouri.[36] However, greyhound racing grew the fastest in Florida; in order to accommodate the growing industry, the National Greyhound Association, which was established in 1906, became responsible for setting the rules for racing, breeding, registration, and record keeping.[37] Dog tracks struggled during the Great Depression and into the 1940s when the United States was focused on the war effort; in 1946 the popularity of the activity resumed, and the American Greyhound Track Owners Association began operation and immediately partnered with the National Greyhound Association to set rules.[38] Greyhound racing has evolved since it was founded in the United States in the nineteenth century. Between the years of 2008 and 2014 over 80,000 greyhounds were registered to race with the National Greyhound Association.[39]

---

[33] A. Croxton Smith, *Greyhound Racing and Breeding (A Vintage Dog Books Breed and Classic)*, Chapter 2, Vintage Dog Books, 2005.

[34] The Greyhound Racing Association of America, *supra* note 32.

[35] *Id.*

[36] *Id.*

[37] *Id.*

[38] William Norman Thompson, *supra note* 13 at 95.

[39] PETA, *Greyhound Racing*, PETA, https://www.peta.org/issues/animals-in-entertainment/cruel-sports/greyhound-racing/.

a. Benefits

The commercial greyhound industry has attracted attention, both positive and negative. Advocates such as PETA, Grey 2K USA Worldwide, and the Animal Legal Defense Fund have taken a stance against the commercial greyhound racing industry because the way greyhounds are treated.[40] PETA and the Animal Legal Defense Fund have done considerable research on the practices of greyhound racing tracks and trainers; their research includes statistics on greyhound racing and commercial industry practices starting in 2008.[41] Alternatively, greyhound racing has social and economic benefits.[42] The American Greyhound Council publishes information on the economic benefits of greyhound racing.[43] The industry in 2013 and 2014 was estimated to be worth $335.7 million.[44] Greyhound tracks "employ more than 14,000 people with an annual payroll of over $194 million." In addition, greyhound racing generates more than $40 million in pari-mutuel taxes; over $18 million in payroll taxes; $12 million in corporate income tax; $11 million in local property taxes; and over $5 million in sales and use taxes.[45] In order for greyhound racing to exist, there are breeders, trainers, and owners, all of which benefit from the industry.[46]

V. Gambling

Greyhound racing has not been the best business venture for those who own the racing greyhounds, as it is not very profitable.[47] Greyhound racing has been, and still is, about the excitement of being involved in the game. Races are set up by grading each dog to create a well-matched and competitive race, and because of the competitive nature

[40] Animal Legal Defense Fund, *Winning the Case Against Cruelty*, Animal Legal Defense Fund http://aldf.org; People for the Ethical Treatment of Animals, *Animals Are Not Ours*, People for the Ethical Treatment of Animals https://www.peta.org/.

[41] *Id.*

[42] Chris Pash, *These are the economic benefits of the greyhound industry being given up by NSW*, Business Insider, (July 7, 2016), https://www.businessinsider.com.au/these-are-the-economic-benefits-of-the-greyhound-industry-being-given-up-by-nsw-2016-7; American Greyhound Council, *Economic Impact Statistics*, American Greyhound Council, https://www.agcouncil.com/economic-impact-statistics/.

[43] American Greyhound Council, *Economic Impact Statistics*, American Greyhound Council, https://www.agcouncil.com/economic-impact-statistics/.

[44] Pash, *supra* note 42.

[45] American Legal Defense Fund, *supra* note 40.

[46] Pash, *supra* note 42.

[47] William Norman Thompson, *supra* note 13 at 95.

of the activity, prizes run up into the hundreds of thousands of dollars.[48] Gambling tied to greyhound racing generates approximately thirteen percent of the pari-mutuel betting in the United States on an annual basis.[49] Pari-mutuel betting, or pool betting, is different from other forms of betting where a bet would be placed against a bookmaker.[50] In pool betting, a bet is wagered against other bettors who are wagering on the same event.[51] The pool is divided among those who made the winning bet and a percentage is taken out by the house.[52] In 1998 tracks won 494 million dollars. However, there is significant debate whether gambling produces a positive economic effect; people on one side of the argument say that it is just a shell game, while others argue that gambling produces jobs, purchasing activity, profits, and tax.[53] Regardless of the stance one takes, gambling plays a very large role in the greyhound racing industry.

The Supreme Court of the United States in *Murphy v. National Collegiate Athletic Association* questioned the legitimacy of the Professional and Amateur Sports Protection Act.[54] The Supreme Court held the provision prohibiting state authorization of sports gambling violates the anticommandeering doctrine of the 10th Amendment, because it mandated what a state could and could not do.[55] The anticommandeering clause was interpreted in *Printz v. United States*, 521 U.S. 898 (1997); "Congress may not simply 'commandeer the legislative process of the States by directly compelling them to enact and enforce a federal regulatory program.'"[56] The holding in *Murphy v. National Collegiate Athletic Association* does not legalize sports betting but gives states the ability to pass statutes that legalize sports gambling.[57]

VI. Abuse in the Commercial Racing Industry

There are many practices used in the commercial racing industry that are considered abusive, some of which include: breeding, live

[48] *Id.*

[49] *Id.* at 93.

[50] Gambling Sites.com, *Guide to Pari-Mutuel Betting*, Gambling Sites.com, https://www.gamblingsites.com/sports-betting/types/pari-mutuel/.

[51] *Id.*

[52] *Id.*

[53] William Norman Thompson, *supra* note 13 at 99.

[54] *Murphy v. National Collegiate Athletic Assn.*, 584 U.S. 1461 (2018).

[55] *Id.* at 30-31.

[56] *Printz v. United States*, 521 U.S. 898 (1997).

[57] Marc Edelman, *Explaining The Supreme Court's Recent Sports Betting Decision*, Forbes May 16, 2018, https://www.forbes.com/sites/marcedelman/2018/05/16/explaining-the-supreme-courts-recent-sports-betting-decision/#45419f7c537c.

lures, living conditions, and medical care.[58] Abusive practices are not assumed to be used at all greyhound racing tracks and by all greyhound racing trainers, however, the widespread controversy has initiated the movement for the abolishment of the industry.[59]

a. Breeding

In order for an individual to get involved in the commercial racing industry, they have to ensure they are investing in a dog that will be suitable for racing. The American Kennel Club (AKC) published a guide to responsible breeding, which provides guidance on suitable mates, genetics, pre-breeding health checks, caring for the puppies after birth, and weaning puppies from the mother.[60] Keeping in mind the guidance that the AKC provides on raising puppies, how would a potential owner or trainer pick a greyhound from a litter? Breeders in the industry have practices to assure that that particular dog will win races. Some greyhound breeders determine the success of a puppy by examining the puppy's bone structure and health.[61] Puppies that do not meet the requirements that the breeder sets are immediately culled from the litter; typically, this includes the runts of the litter and the puppies that the breeder determines are not built for racing.[62] Some breeders cull the puppies from the litter by bashing the head in. If the runts are not killed immediately after birth, the breeder typically culls them from the litter within the first three weeks. Because a greyhound's racing capacity is not always visually discernible at the outset, the culling process continues at the training grounds where young greyhounds learn to race. …As the pups grow older, death usually comes by bullet.[63] When the puppy gets older and starts training for racing aptness for racing is determined by speed, ability to learn, and stubbornness.[64] Greyhounds that do not meet racing standards are sometimes put to death by bullet, however, this practice depends on both the breeder and the trainer.[65]

---

[58] Erin N. Jackson, *Dead Dog Running: The Cruelty of Greyhound Racing and the Bases for its Abolition in Massachusetts*, 7 Animal L. 175, 178 (2001). Not all greyhound racing tracks have been discovered using inhumane or controversial practices. Therefore, while these inhumane practices have been discovered at many tracks around the United States, these findings cannot be generalized.

[59] *Id.*

[60] American Kennel Club, *AKC's Guide to Responsible Dog Breeding*, American Kennel Club, http://www.akc.org/dog-breeders/responsible-breeding/.

[61] Jackson, *supra* note 58.

[62] *Id.* at 178.

[63] *Id.* There are rumors that the pups that are not used from potential racing litters are sold to sport fishermen who use the greyhound pups for shark bait. The rumor originated in Key West, Florida.

[64] *Id.*

[65] *Id.*

Because the breeding and culling process used by many breeders is focused on race potential rather than health, some greyhound puppies have not received the care that the AKC recommends. Newborn puppies require colostrum, which can be received from nursing.[66] Puppies need to ingest colostrum within twenty-four hours after birth because "[c] olostrum contains a number of substances that are beneficial to the puppies…that protect newborns for the infectious diseases to which the mother is immune."[67] Newborn puppies are not able to control their body temperature; after the puppies are born the breeder needs to provide heating pads or heating lamps to keep the puppies body temperature between eighty-five and ninety degrees.[68] The American Kennel Club also instructs breeders on how to wean the puppies from their mother; many greyhound breeders pull the puppies from their mothers early in order to begin race training, however, the AKC suggests that the breeder should consult a veterinarian before taking the puppies away from the mother.[69]

The same or similar practice that occurs when breeders determine that a puppy will not be suited for racing is common when grown greyhounds do not win races. The puppies that make it through training, but do not win races are generally not retired, sold as pets, or put to stud; they are likely killed.[70] Over eight thousand dogs were killed during one five-year period in the 1970s.[71]

VII. Live Luring

The ability to run in a circle is not a naturally ingrained instinct that dogs are born with. Greyhound trainers use live animals as lures to motivate the dog to run in a circle.[72] Starting at fourteen months old greyhounds are incentivized to run by following live animals that hang from polls around the exterior of a small track.[73] While running, the greyhounds are rewarded during training by being allowed to catch and tear parts of the animal off.[74] After the puppies are trained to run on a smaller track the greyhounds are moved to a commercially regulated, larger track where they are muzzled.[75] When the greyhound is muzzled

[66] American Kennel Club, *supra* note 60.
[67] *Id.*
[68] *Id.*
[69] *Id.*
[70] William Norman Thompson, *supra* note 13 at 95.
[71] *Id.*
[72] Jackson, *supra* note 58, at 180.
[73] *Id.*
[74] *Id.*
[75] *Id.*

the dog is unable to take large pieces of the bated animals.[76] These small animals are often used for multiple races before the animal dies.[77] In 1993 more than 100,000 small animals died in the course of training greyhounds.[78] If the figure from 1993 is used as an average for the number of small animals that die every year, then roughly 2,400,000 small animals have died for the sake of training greyhounds to race.[79]

VIII. Living Conditions

Contrary to what one would think about the level of exercise that a racing dog would receive on a daily or weekly basis, greyhounds receive little exercise.[80] Each race last about thirty-seconds and each dog races two to three times a week.[81] When the dogs are not racing, many greyhounds are kept in metal kennels for twenty or more hours a day.[82] These kennels are "roughly three feet by three feet by four feet and stacked atop each other in small spaces," and sometimes hold more than one dog.[83] Typically, the kennels are housed in a building several miles away from the track, are poorly maintained, and holds hundreds of dogs.[84] When the greyhounds are in their crates many trainers muzzle the dogs, which prevents the dogs from engaging in instinctual grooming; it also prevents the dogs from gnawing on the cages in boredom.[85] Greyhounds are given several bathroom breaks a day, each lasting about fifteen minutes long; these breaks are the extent of the exercise that racing greyhounds receive outside of their weekly races.[86]

Some of the kennels that the greyhounds are housed in are poorly maintained; one of the most common issues is fire safety.[87] On three different occasions the O'Donnel-Pike Compound caught fire, as a result 123 greyhounds died in their kennels; the cause of these fires was determined, by experts, to be insufficient fire safety.[88] The O'Donnel-Pike Compound was missing fire alarms and sprinklers, which likely would have protected the dogs.[89]

---

[76] *Id.*

[77] Jackson, *supra* note 58, at 180.

[78] *Id.*

[79] *Id.*

[80] *Id.* at 181.

[81] *Id.*

[82] Grey2K USA Worldwide, *Confinement*, Grey2K USA Worldwide, https://www.grey2kusa.org/about/confinement.php.

[83] Jackson, *supra* note 58, at 181.

[84] *Id.* at 182.

[85] *Id.* at 183.

[86] *Id.* at 181.

[87] *Id.*

[88] *Id.*

[89] Jackson, *supra* note 54, at 182.

IX. Injuries and Care

Injuries that afflict the greyhounds and the care provided to them are two of the largest issues that advocates against greyhound racing have with the commercial racing industry. During a typical greyhound race, the dogs do several laps around the track going up to forty-five miles an hour.[90] Newton's first law of motion, the law of inertia, explains the effect when an object is moving fast.[91] The basic concept of the law of inertia is an object at rest will stay at rest and an object in motion, will stay in motion with the same speed and direction unless acted upon by an outside force.[92] When a greyhound is moving fast, and comes to a sudden stop, or is forced to come to a sudden stop, then a lot of force will be placed on the body and, therefore, an injury is likely to occur.[93] Some of the most common injuries that greyhounds suffer are "blows to the neck, spine, shoulders, legs, and feet," all of which can cause fatal injuries to the dogs.[94] Between the years of 2008 and 2017 more than 14,000 injuries were reported; among those injuries the most common were broken legs.[95] Of these numbers, many dogs face euthanasia if their injuries are too severe and prevent the dog from racing, again.[96] It is unlikely that the injuries reported are accurate; both Alabama and Florida, states that have the most active greyhound racing tracks, are not required to report injuries to the public.[97] Since 2008 more than 11,700 injuries have been reported.[98] These injuries include: heart attacks, heatstroke, electrocution, fractured skulls, broken necks, and broken legs.[99] The full extent of these injuries are not known. It was not until recently that Florida, the home to more than half of the United States' greyhound racing tracks, was required to report injuries greyhounds received during the course of racing.[100] Since then, Florida has reported

---

[90] *Id.*

[91] The Physics Classroom, *Newton's First Law*, The Physics Classroom, http://www.physicsclassroom.com/class/newtlaws/Lesson-1/Newton-s-First-Law.

[92] *Id.*

[93] *Id.*

[94] Jackson, *supra* note 54, at 184.

[95] Grey2K USA Worldwide, *Injuries & Deaths*, Grey2K USA Worldwide, https://www.grey2kusa.org/about/injuries.php.

[96] *Id.*

[97] *Id.*

[98] PETA, *Greyhound Racing*, PETA, https://www.peta.org/issues/animals-in-entertainment/cruel-sports/greyhound-racing/.

[99] *Id.*

[100] *Id.; see also* Animal Legal Defense Fund, *Speak Out In Support of Greyhound Protection Amendment*, Animal Legal Defense Fund (March 28, 2018), http://aldf.org/blog/speak-support-greyhound-protection-amendment/.

500 dogs that died at race tracks.[101] The lack of accountability in the commercial greyhound racing industry has led to greyhounds being drugged to increase performance during a race or from the dogs going into heat.[102] In addition, dogs have tested positive for drugs like cocaine in order to improve their performance in a race.[103]

In addition to physical injuries from racing, greyhounds have tested positive for drugs and are fed meat that does not provide proper nutrients.[104] Many racing greyhounds have tested positive for cocaine, ractopamine, anabolic steroid metandienone, and dimethyl sulfoxide.[105] Even though the commercial greyhound industry performs mandatory drug screening on the racing dogs, Alabama, Arizona, Arkansas, Colorado, Florida, Iowa, New Hampshire, Texas, West Virginia, and Wisconsin have had positive drug screening results between the years of 2007 to 2017.[106] Commercial racing tracks have been found feeding 4D meat to greyhounds in order to reduce costs.[107] 4D meat is a combination of "livestock that was dead, dying, diseased, or down at slaughter (and typically pumped full of drugs before death in an effort to salvage the animals for food)."[108] Because the Food and Drug Administration does not allow this meat to be marketed for human consumption, 4D meat is economically practicable for feeding hundreds of greyhounds.[109] Greyhounds are fed this low-quality meat raw and are exposed to microorganisms like "salmonella, campylobacter jejuni, and Escherichia coli."[110] Other effects of serving 4D food to greyhounds are tooth and gum disease, emaciation, and unhealthy coats.[111]

---

[101] Animal Legal Defense Fund, *Speak Out In Support of Greyhound Protection Amendment*, Animal Legal Defense Fund (March 28, 2018), http://aldf.org/blog/speak-support-greyhound-protection-amendment/.

[102] *Id.*

[103] *Id.*

[104] *Id.*

[105] Grey2K USA Worldwide, *Drugs*, Grey2K USA Worldwide, https://www.grey2kusa.org/about/drugs.php.

[106] Grey2K USA Worldwide, Drugs in the American Greyhound Racing Industry, Grey2K USA Worldwide (Dec. 2017), https://www.grey2kusa.org/pdf/GREY2K_USA_Drugs_in_the_American_Greyhound_Racing_Industry.pdf. In May 2017 Malcolm McAllister, who worked at Derby Lane, was issued citations for six greyhounds found with cocaine in their drug tests. *Id.* Another trainer at Orange Park Kennel Club was charged with cocaine-based infarctions, which led to his suspension. *Id.*

[107] Jackson, *supra* note 58, at 184.

[108] *Id.*

[109] Grey2K USA Worldwide, *4-D Meat*, Grey2K USA Worldwide https://www.grey2kusa.org/about/4dmeat.php.

[110] *Id.*

[111] Jackson, *supra* note 58 at 184.

X. Greyhound Rescue Organizations

Similar to professional athletes, commercial racing greyhounds cannot race for their entire lives. There are many greyhound rescues that rehabilitate former racing dogs with the goal to find the dogs homes. The following three Michigan greyhound organizations provided a lot of information about their missions in supporting retired greyhounds.[112] Retired Greyhounds as Pets (REGAP) formed in 1982 by Ron Walsek, an employee at a greyhound racing track who helps facilitate the adoptions of the animals. There are over 100 groups associated with REGAP and have brought about over 15,000 adoptions.[113]

a. Greyhound Retirement Adoption Care and Education (G.R.A.C.E.)

G.R.A.C.E. is a non-profit greyhound rescue in the state of Michigan. The goal of G.R.A.C.E. is to find homes for retired racing greyhounds, while maintaining a neutral position on the industry.[114] G.R.A.C.E. works with greyhound racing tracks, trainers, owners, and farms to obtain dogs for rescue after they retired from racing.[115] These tracks, trainers, owners, and farms are located in Iowa, West Virginia, and Florida.[116] When the dogs are retired from racing, G.R.A.C.E. works to find homes for these greyhounds.[117] G.R.A.C.E. keeps a neutral stance on the racing industry because, in their experience, the organizations and people that own racing greyhounds will only retire their dogs to rescue organizations that "work for the dogs and do not judge the practice of racing."[118] G.R.A.C.E. is able to provide homes and support to the dogs by establishing relationships with trainers, tracks, owners, and farms.[119] Marcia Krey from G.R.A.C.E. warned against many anti-racing groups

---

[112] According to a myths fact sheet published by the Greyhound Racing Association of America, more than 90 percent of racing greyhounds are adopted as pets or returned to their owners for breeding. Martin Roper, *Greyhound Racing Myths Debunked!*, The Greyhound Racing Association of America, http://www.gra-america.org/the_sport/articles/a_myths.html. These numbers come out to about 18,000 dogs that are rescued and sequentially adopted each year by organizations and 5,000 dogs that are returned to their owners. *Id.*

[113] William Norman Thompson, *supra* note 13 at 95.

[114] G.R.A.C.E., *Who We Are*, Greyhound Retirement Adoption Care and Education, http://www.houndsofgrace.org/about/.

[115] Telephone Interview with Marcia Krey, President, Greyhound Retirement Adoption Care and Education (April 3, 2018).

[116] *Id.*

[117] *Id.*

[118] *Id.*

[119] *Id.*

that do not protect the dogs by contributing financially to rescues, but instead pay lobbyists and their employees.[120]

b. Allies for Greyhounds

Another Michigan based rescue is Allies for Greyhounds located in Western Michigan. Over 1,100 retired racing greyhounds have been placed in homes since Allies for Greyhounds opened, which is about 130-150 adoptions a year.[121] Allies for Greyhounds' mission statement is "Allies for Greyhounds, Inc. retrieves greyhounds bred for racing. We look out for the welfare of greyhounds, finding homes for them where they may live out their natural lives as pets. We also work to educate the public about their qualities as pets and their care."[122] Allies for Greyhounds rescues greyhounds from racetracks where the dogs will either go straight to families or they will be taken to prisons where an inmate will teach the dog basic commands like sit, stay, come, heel, and down.[123] Greyhounds that are trained in prison have approximately 2,000 hours of training and are then adopted with a journal that the inmate kept during training.[124]

Dave Conrad, from Allies for Greyhounds, takes possession of the retired greyhounds between the age of 18 months and 5 years.[125] Greyhounds are retired at 18 months if the dogs do not want to race or are not well suited for racing, or are retired at 5, which is mandated by law.[126] Allies for Greyhounds gets possession of the retired dogs by developing relationships with trainers and tracks in both Iowa and Florida, and during the summer months Allies for Greyhounds drive to tracks and trainers to pick up the greyhounds; all of these efforts goes to provide homes for the retired dogs.[127]

Allies for Greyhounds support the commercial greyhound racing industry.[128] According to Dave Conrad, the greyhound breed is reliant on the racing industry, and without it there is no motivation in breeding

---

[120] *Id.*

[121] Telephone Interview with Dave Conrad, President, Allies for Greyhounds (April 3, 2018).

[122] Allies for Greyhounds, *About Us*, Allies for Greyhounds, http://www.alliesforgreyhounds.org/about-us/.

[123] Allies for Greyhounds, *Prison Dogs*, Allies for Greyhounds, http://www.alliesforgreyhounds.org/prison-dogs/.

[124] *Id.*

[125] Telephone Interview with Dave Conrad, President, Allies for Greyhounds (April 3, 2018).

[126] *Id.*

[127] *Id.*

[128] *Id.*

greyhounds.[129] Dave Conrad made a lot of comparisons between racing greyhounds and American Kennel Club (AKC) greyhounds, primarily the dogs' temperament and after birth care.[130] AKC greyhounds have at times been described as high strung, shy, and one-person dogs, however, Mr. Conrad described racing greyhounds as laid back.[131] Racing greyhounds, contrasted from AKC greyhounds, are not taken from their mother until 10 to 12 weeks old and remain with their litter mates until they are one or more years old; it is not until after one year old that the greyhounds go to trainers.[132] Mr. Conrad describes the way racing greyhound are raised as "growing up naturally."[133]

Mr. Conrad communicated that he believes that there is a lot of misinformation about greyhound racing: "anti-racing [organizations] are like that because they think the dogs are mistreated, I have been all around and the dogs are not mistreated. Wire baskets are not used."[134] Another misconception that Mr. Conrad discussed were advocacy groups like Grey2K. Conrad stated that they have "thousands of dollars and not one dime has been given to greyhound adoption groups."[135]

c. MotorCity Greyhound Rescue

Lastly, MotorCity Greyhound Rescue is a greyhound rescue located in Detroit, Michigan.[136] MotorCity Greyhound Rescue's website takes a strong, negative stance on the industry.[137]

> [D]og racing is about using dogs for entertainment and gambling. Some call dog racing a sport, but the dogs have no say. It's not really about the dogs. It's about the wagering and the money. Young and healthy greyhounds may be injured during a race. The conditions in which they must live are not ideal and when they are no longer needed for the business they are no longer wanted by the business.[138]

---

[129] *Id.*

[130] Telephone Interview with Dave Conrad, President, Allies for Greyhounds (April 3, 2018).

[131] *Id.* Allies for Greyhounds has rescued AKC greyhounds as well as racing greyhounds. *Id.*

[132] Telephone Interview with Dave Conrad, President, Allies for Greyhounds (April 3, 2018).

[133] Telephone Interview with Dave Conrad, President, Allies for Greyhounds (April 3, 2018).

[134] *Id.*

[135] *Id.*

[136] MotorCity Greyhound Rescue, *Contact Us*, MotorCity Greyhound Rescue, http://motorcitygreyhoundrescue.org/contact-us/.

[137] MotorCity Greyhound Rescue, http://motorcitygreyhoundrescue.org/.

[138] *Id.*

It was not possible to get ahold of an employee or owner of MotorCity Greyhound Rescue, and so, the only information available was that published on the organization's website.

XI. The National Greyhound Association (NGA)

The National Greyhound Association's by-laws do not specifically address the inhumane conditions that the commercial greyhound industry has a reputation for.[139] The NGA's policy "is an all encompassing rule regarding the treatment of greyhounds and animals in general which would include the non-use of any live lures, etc."[140] In the National Greyhound Association's "Disciplinary Actions" in the by-laws, the following can be found:

> The Board of Directors may, after hearing, discipline, fine, suspend, revoke the membership of, or deny any or all privileges of the Association together with any other penalties that it deems suitable to any member, associate member or non-member found to have: i) committed any other acts of discreditable conduct, including (but not limited to) inhumane treatment of Greyhounds or any other animals, or any act that would have a deleterious impact on the greyhound industry as a whole.[141]

In order to prevent abuse in the commercial greyhound racing industry it is common to see contracts between "kennel operators and racetracks to contain language stating that the kennel owners avow that no greyhound racing under his/her care was trained with the use of live lures [etc]."[142]

XII. Summary of State Laws

Greyhound racing is legal in eleven states and illegal in thirty-nine states. States where greyhound racing is legal regulate the industry, by imposing restrictions on track owners and dog owners. Texas, Iowa, Alabama, Arkansas, West Virginia, Connecticut, Kansas, Oregon, Wisconsin, and Rhode Island are the eleven states where greyhound racing is legal.[143] Connecticut, Oregon, Kansas, and Wisconsin do not

---

[139] Email Interview with Jim Garland, Director, National Greyhound Association (April 3, 2018).

[140] *Id.*

[141] Email Interview with Jim Garland, Director, National Greyhound Association (April 3, 2018).

[142] *Id.*

[143] Grey2K USA Worldwide, *Greyhound Racing in the United States*, Grey2K Worldwide, https://www.grey2kusa.org/about/states.php.

have any active tracks.[144] And finally, dog racing was recently made illegal in Arizona, Colorado, Massachusetts, New Hampshire, Rhode Island, and Florida.[145]

Texas, Arkansas, and Kansas established a commission to regulate the industry.[146] Iowa and West Virginia established a licensing system to keep a record of the greyhounds.[147] Arkansas requires greyhound racing tracks be licensed with the state.[148] Iowa requires a greyhound racing track to have a lease with the state.[149] Alabama and Oregon prohibit certain substances from being used on racing greyhounds in order to increase their performance.[150] Alabama also imposes a penalty for violations of the state statute, which has a sentence of over a year, a felony conviction.[151] Oregon has a mens rea requirement for violators of the statute.[152] Wisconsin and Rhode Island are the only states that regulate the way a dog can be euthanatized.[153] Wisconsin additionally defines prohibited activities. Finally, Rhode Island regulates the sale of greyhounds.[154]

For a more detailed description of the state laws, including citations, refer to Appendix 1.

a. Florida

Up until November 2018, greyhound racing was legal in Florida, and as previously mentioned Florida is home to the largest number of active tracks. In the Florida mid-term 2018 election was a constitutional amendment, "Amendment 13 The Ban on Wagering on Dog Races."[155] The Florida Constitution Revision Commission voted to place Amendment 13 on the ballot by a vote of 27-10.[156] Amendment 13 is designed to prohibit pari-mutuel operations from dog racing, greyhound racing specific to Florida, by January 1, 2021.[157] The amendment also authorizes the Florida State Legislature to impose and specify penalties

[144] *Id.*
[145] *Id.*
[146] App. 1, p. 29, 32-34.
[147] *Id.* at 29-30, 33.
[148] *Id.* at 32-33.
[149] *Id.* at 29-30.
[150] *Id.* at 32, 34.
[151] *Id.* at 32.
[152] App, 1, p. 32.
[153] *Id.* at 34-35.
[154] *Id.* at 35.
[155] Ballotpedia, *Florida Amendment 13, Ban on Wagering on Dog Races Amendment (2018)*, Ballotpedia, https://ballotpedia.org/Florida_Amendment_13,_Ban_on_Wagering_on_Dog_Races_Amendment_(2018).
[156] *Id.*
[157] *Id.*

for violating the amendment.[158] Amendment 13 adds an additional section to Article X and Article XII of the Florida Constitution.[159] The text is as follows:

> **New Section of Article X**
>
> Prohibition on racing of and wagering on greyhounds or other dogs.—The humane treatment of animals is a fundamental value of the people of the State of Florida. After December 31, 2020, a person authorized to conduct gaming or pari-mutuel operations may not race greyhounds or any member of the *Canis Familiaris* subspecies in connection with any wager for money or any other thing of value in this state, and persons in this state may not wager money or any other thing of value on the outcome of a live dog race occurring in this state. The failure to conduct greyhound racing or wagering on greyhound racing after December 31, 2018, does not constitute grounds to revoke or deny renewal of other related gaming licenses held by a person who is a licensed greyhound permitholder on January 1, 2018, and does not affect the eligibility of such permitholder, or such permitholder's facility, to conduct other pari-mutuel activities authorized by general law. By general law, the legislature shall specify civil or criminal penalties for violations of this section and for activities that aid or abet violations of this section.
>
> **New Section of Article XII**
>
> Prohibition on racing or wagering on greyhounds or other dogs.—The amendment to Article X, which prohibits the racing of or wagering on greyhound and other dogs, and the creation of this section, shall take effect upon the approval of the electors.[160]

Article X phases out pari-mutuel betting on greyhound racing over the course of 2019 and 2020 and has the potential to impose civil or criminal penalties on those violating the amendment.[161] The amendment phases out greyhound racing, versus eliminating the practice immediately, so

[158] *Id.*
[159] *Id.*
[160] Ballotpedia, *supra* note 155.
[161] *Id.*

track owners and greyhound breeders can investigate new economic options.[162]

The list of supporters of Amendment 13 is long, in that list are organizations; current and former lawmakers; congressional, state, and local candidates; municipalities; local elected officials; Florida greyhound adoption groups; members of the equine community; veterinarians in the State of Florida; veterinary clinics; animal shelters; local businesses; non-profit organizations; churches; animal welfare organizations; dog clubs; and attorneys.[163] The arguments in support of Amendment 13 involved the welfare of the dogs and gambling issues.[164]

The largest group opposing Amendment 13 is greyhound adoption groups, joining the rescue organizations are other organizations in the State of Florida. Eighty-seven rescue organizations opposed the amendment and support greyhound racing.[165] Rescue organizations include: Greyhound Pet Adoption Las Vegas, Alabama Greyhound Rescue and Adoption Center, Allies for Greyhounds, California Greyhound Adoption Promotion, Connecticut Greyhound Adoption (GAP), GPA Tampa Bay, Greyhound Angels Adoption of New Jersey, Greyhound Pets of America Lexington, Greyhound Rescue Foundation of Tennessee, and Greyhound Rescue of New York.[166] Other organizations that opposed Amendment 13 include: The Florida Chamber of Commerce, Republican Party of Palm Beach County, Florida Greyhound Racing Association, and Greyhound Adopters for Racing. Arguments against abolishing greyhound racing were made by Support Greyhounds, who wrote,[167]

> The truth is Racing Greyhounds like many working breeds such as Labrador Retrievers who are used when hunting, Sled Dogs who participate in racing, horses who race or participate in show jumping, or even dogs who herd sheep or then participate in agility contests—are all animals with jobs which keep them happy, healthy, in top condition and accomplishing what they have been bred to do for centuries….Greyhounds are amazing athletes, working dogs who for generations have been born to run.[168]

---

[162] Dave Caldwell, *The slow death of US greyhound racing*, The Guardian (Nov. 20, 2018), https://www.theguardian.com/sport/2018/nov/20/the-slow-death-of-us-greyhound-racing-florida-ban.

[163] Ballotpedia, *supra* note 155.

[164] *Id.*

[165] *Id.*

[166] *Id.*

[167] *Id.*

[168] *Id.*

Greyhound Adopters for Racing published on its website,

> We have each reached the conclusion, through living with our former racing Greyhounds and seeing them in their working lives at farms, training facilities and in racing kennels, that Greyhound racing is NOT "cruel and inhumane" to the Greyhounds, and should be continued, in the best long term interests of our breed.[169]

Other published statements were made by The News-Press, The Tampa Bay Times, The Tallahassee Democrat, Your Observer, and The Treasure Coast Newspapers.[170]

Two committees were registered to support Amendment 13: Protect Dogs and Committee to Protect Greyhounds. Donors include Doris Day Animal League, GREY2K USA Worldwide, Gary Keller, National Greyhound Association, Mardi Gras Greyhound Foundation, and the Iowa Greyhound Association.[171] Total campaign contributions in support of Amendment 13 was $3,382,554.34.[172] Only one committee was registered in opposition of the amendment, the Committee to Support Greyhounds, which reported a total of $142,443.50.[173]

In 2018, before the election, Florida Greyhound Association filed a complaint against Florida's Secretary of State, Ken Detzner.[174] Florida Greyhound Association argued that the title of the ballot "Ends Dog Racing," was false and misleading.[175] The circuit court held the amendment has to be removed from the ballot because "[i]f the [] Constitution Revision Commission wanted Florida voters […] to be able to adopt as a constitutional fundamental value the humane treatment of animals, the CRC could have included the appropriate language in the ballot and summary."[176] The Attorney General appealed the decision, and the Florida Supreme Court reversed the judgment reasoning that Amendment 13 was not defective and did not misstate the scope or effect of the amendment.[177]

---

[169] Ballotpedia, *supra* note 155.

[170] Ballotpedia, *supra* note 155.

[171] *Id.*

[172] *Id.*

[173] *Id.*

[174] Mary Ellen Klas, *Greyhound industry files lawsuit to remove Amendment 3 from ballot*, Tampa Bay Times (May 17th 2018), www.tampabay.com/florida-politics/buzz/2018/05/17/greyhound-industry-files-lawsuit-to-remove-amendment-3-from-the-ballot/; Complaint *Florida Greyhound Association v. Department of State*, No. 2018-CA-1114 (Fla. 2d. Cir. Ct. Aug. 1, 2018).

[175] *Id.*

[176] *Florida Greyhound Association,* No. 2018-CA-1114.

[177] *Dept. of State v. Greyhound Ass'n*, 253 So. 513, 20-21 (Fla. 2018).

Amendment 13 was on the November 2018 ballot; 5,407,543 votes were cast in support of the amendment and 2,423,126 votes were cast against the amendment.[178]

a. Active Greyhound Racing Tracks

According to the National Greyhound Association's records, the following tracks are the only ones active in the United States as of today.[179] The tracks below located in Florida will be closed by January 1, 2021.

- Birmingham Race Course, Birmingham, AL
- Corpus Christi Greyhound Race Track, Corpus Christi, TX
- Daytona Beach Kennel Club, Daytona Beach, FL
- Derby Lane St. Petersburg Kennel Club, St. Petersburg, FL
- Ebro Greyhound Park, Ebro, FL
- Flagler Dog Track, Miami, FL
- Gulf Greyhound, La Marque, TX
- Iowa Greyhound Park, Dubuque, IA
- Jacksonville Orange Park Kennel Club, Orange Park, FL
- Naples-Ft Myers, Bonita Springs, FL
- Mardi Gras- Hollywood, Hollywood, FL
- Palm Beach Kennel Club, West Palm Beach, FL
- Sanford Orlando Kennel Club, Longwood, FL
- Southland Park, West Memphis, AR
- Tri-State Greyhound, Cross Lanes, WV
- Wheeling Island, Wheeling, WV

XIII. Discussion

The greyhound is a working breed, and like other working breeds the dogs thrive when they have a job. The racing greyhound has a job, it runs races and it trains for races. Objectively, racing dogs does not harm the animals, and even though running at high speeds increases the likelihood that a break will occur, a dog kept as a pet who runs is increasing its likelihood of breaking a bone or tearing a ligament. Therefore, we must ask, is greyhound racing bad because it is commercialized? Because people are allowed to gamble on the outcome of the race? Greyhound racing gave men and women the opportunity to gamble on a less prestigious, a more economically and socially reachable sport. Without knowing much about the dogs, a man could take to the

[178] Ballotpedia, *supra* note 155.

[179] National Greyhound Association, *Race Tracks*, National Greyhound Association, https://www.ngagreyhounds.com/race-tracks.

tracks and enjoy the anticipation of his bet. However, gambling and greyhound racing have decreased in popularity, and many states started to outlaw the activity. Dog racing has likely become less popular for two reasons, one because dogs are sympathetic as pets; public policy shifted; and socially, individuals became aware of how some breeders, trainers, and track owners treated the dogs. The second reason is the availability for states to legalize gambling as they see fit. The holding in *Murphy v. National Collegiate Athletic Association* gave states the ability to legalize sports betting. The holding does not give the go ahead to launch sports betting websites, but the holding does invite states to pass laws to do so. Greater availability for betting significantly takes the pressure off the racing industry and allows states to prohibit gambling on dog racing.

Greyhound racing is regulated by the states and by the National Greyhound Association. Each state has enacted slightly different rules for tracks and trainers to abide by. Where the National Greyhound Association acts as an intermediary between the states and the tracks in order to keep a record of the racing greyhounds and ensure abuse in the industry is not present. Despite both of these regulatory schemes, greyhound racing has a very notorious reputation for abuse. The unethical practices have led to greyhound racing being abolished in many states. Greyhound racing is illegal in thirty-nine states. Out of the thirty-nine states, seven states eliminated greyhound racing by prohibiting pari-mutual gambling on dog races, which is consistent with Florida's Constitutional Amendment. Other states directly made greyhound racing illegal or prohibited broadcasting of greyhound races. In each of these statutory schemes, the state removed the economic incentive to race dogs. The State of Florida is unique in the sense that greyhound racing is being phased out versus automatically banned.

The text of the constitutional amendment in Florida outlawed greyhound racing by prohibiting pari-mutual gambling on dog racing, in addition to phasing out practice of dog racing over two years. There are very few sources that explain what Florida's phase-out approach actually means. News sources simply say that the two-year window gives owners, trainers, and breeders the opportunity to find career alternatives. It is not clear if there will be a gradual downsizing in track operations, whether dog owners and trainers will begin to transition the greyhounds into pet homes, or who or what entity will be facilitating the phase-out. The text of the constitutional amendment does not delegate authority to an agency within the State of Florida's government. Because there is no legislative body regulating the phase-out of greyhound racing tracks in Florida, is the only purpose of the phase-out approach to give those economically involved a chance to ethically transition their business? An immediate concern that comes to mind when a state eliminates

greyhound racing is what is going to happen to the dogs. Approximately 10,000 greyhounds will not have an economic purpose; can the rescues support this influx of dogs in need of pet homes? Phasing out the dog racing industry likely best supports the welfare of the greyhounds and the capacity of greyhound racing adoption organizations. However, trainers, track owners, and breeders are seemingly responsible for phasing-out the industry. Because there is not a legislative body facilitating the process of shutting down tracks and transitioning the dogs to rescues for rehoming, ensuring the treatment of the greyhounds seems completely discretionary on those who have been accused of unethical treatment of the dogs. Ideally though, the phase-out approach would serve best to protect the dogs and give those economically reliant on the industry the chance to seek out other employment. The alternative to the phase-out approach would be an automatic ban on greyhound racing. It is likely that if greyhound racing was automatically banned, after the constitutional amendment passed, the industry would be susceptible to more abuse. Like the practice of "taking the dogs out back" when the puppies were thought to not be successful racers, it is possible that some owners would not try to find them permanent homes but euthanize some of the dogs.

Dozens of greyhound rescue organizations opposed Amendment 13 to the Florida Constitution, and as the interviews in this note suggest, a lot of the rescue organizations in the United States support the racing industry. Many rescue organizations believe that greyhound racing is ethical and gives working breeds, like greyhounds, a purpose. Rescues exist to rehome racing dogs when their careers are over, where advocacy groups lobby to eliminate dog racing but do not help the dogs who no longer have a job. And so, Greyhound racing organizations and greyhound advocacy groups typically stand on opposing sides of the dog racing argument. Allies for Greyhounds and G.R.A.C.E. are two rescues that take a neutral position on greyhound racing, but oppose organizations such as Grey2K USA who supported Amendment 13 to the State of Florida's constitution. Executives from both Allies for Greyhounds and G.R.A.C.E. questioned the creditability of Grey2K USA and their financial commitment to the greyhounds. G.R.A.C.E. does not support organizations like Grey2K USA based on the belief that most of its money goes towards lobbying. Similarly, David Conrad, from Allies for Greyhounds, does not support Grey2K USA because he believed that the CEO makes $2 million dollars a year. Both of these organizations share a similar concern; not enough money from advocacy organizations goes towards racing greyhounds after their career is over. The contributions that Allies and G.R.A.C.E. make to the racing industry impact the safety and welfare of dogs directly, by preparing the dogs for retirement, finding the dogs a good home, and

teaching the dogs basic commands. And while anti-racing organizations generally have the same goal, to protect the dogs from mistreatment, none of Grey2K USA's money is given directly to the dogs or rescue organizations. Grey2K USA's 990 form that was submitted to the Internal Revenue Service reflects the following information: $596,774 in gross revenue; $251,610 in salaries; $114,600 in assets; $53,186 paid to the President and Executive Director; and $123,371 in lobbying. So, where Allies for Greyhounds and G.R.A.C.E. assume that Grey2K USA spends an excessive amount of money on lobbying and salaries, in reality, Grey2K USA's funds are channeled towards changing the law, instead of helping greyhounds after they are retired from racing. If advocacy organizations succeed in changing the law, as they did in Florida, and greyhound racing tracks are phased out in all fifty states it will be rescue organizations that are responsible for the dogs, not the advocacy groups.

As public policy shifts and the practice of greyhound racing is phased out in the United States, what will happen to the greyhound breed? The economic incentive of breeding greyhounds will likely not be the same. The number of greyhounds that are bred for greyhound racing will unlikely compare to the demand for pet homes. Will there be a need for greyhounds?

XIV. Conclusion

The history of greyhound racing and the treatment that the industry affords to the dogs explains the public policy shift that is likely the driving force behind the movement to make greyhound racing illegal in the United States. In many instances, greyhound puppies are removed from the litter too early, kept in crates or kennels for the majority of the day, and receive care that is below par. While these negative practices are not uniform across tracks and trainers, the minimal supervision of the industry has led to abuse that impacts the dogs. As of 2019, forty-one states do not have active greyhound racing tracks or have prohibited racing, and nine states where greyhound racing is legal (in this figure the State of Florida is not included). The 2018 constitutional amendment in the State of Florida will function as an interesting and important case study as other states follow Florida's lead and make greyhound racing illegal. The question of whether phasing out greyhound racing will protect the dogs, while not overwhelming the adoption organization, and will guide other states in the decision to immediately eliminate greyhound racing or phase racing out over a period of time. Regardless of the approach that states take, public policy will continue to demand that the greyhounds are treated with respect.

Appendix 1:
50 State Survey of Greyhound Racing

I. States where Greyhound Racing is Legal

1. Texas TX CIV ST Art. 179e

Texas is home to two of the active greyhound racing tracks within the National Greyhound Racing Association's jurisdiction. Article 179e of the Texas Racing Act allows for the regulation of the commercial greyhound racing industry.[180] The statute establishes a commission whose primary purpose is to regulate every greyhound race.[181] The mission of the commission is to protect the interests of the race animals and the general public.[182] In addition, the commission is authorized to create rules pertaining to wagering, licenses, and all other issues surrounding greyhound racing.[183] The commission is responsible for creating a report that covers the following topics: operations, breeding, criminal activities, and recommendations that the commission wants the governor to consider.[184]

The Texas Racing Commission's purpose is to create strict regulations of horse and greyhound racing and the commission is responsible for the regulation and supervision of every race and every person related to the operation of greyhound racing.[185] Licenses for greyhound racing tracks can only be granted if the population of the county is over 190,000 people.[186] In order to enforce its policies and regulations, the commission is "authorized to deny, suspend, and revoke licenses, as well as to impose administrative penalties against its licenses of up to $10,000 for each violation of the Commission's rules."[187]

2. Iowa

Iowa only has one greyhound-racing track, the Iowa Greyhound Park in Dubuque, Iowa. Iowa statute I.C.A. § 99D.9C, "Alternative dog racetrack and simulcasting licensure—live racing—lease agreement with gambling games licensee," creates a licensing system for the Iowa

[180] Tex. Rev. Civ. Stat. Ann. art. 179e (West 2017).
[181] Art. 3, § 3.02.
[182] Art. 179e, § 3.021.
[183] *Id.*
[184] Art. 179e, § 3.10.
[185] Texas Racing Commission, *Powers of the Commission*, Texas Racing Commission http://www.txrc.texas.gov/agency/commission/powers.php.
[186] *Id.*
[187] *Id.*

greyhound association.[188] If the application is approved then it permits the applicant to conduct wagering on live dog races.[189] The greyhound association, pursuant to this statute, is required to set up and maintain an escrow fund, which will be used to pay all costs,

> associated with conducting live racing…including but not limited to regulatory and administrative fees, capital improvements, purse supplements, operational costs, obligations pursuant to any purse supplement agreement as amended and approved by the commission, payment of rents for leased facilities and costs of maintenance of leased facilities, payment for products and services provided by the licensee authorized to conduct gambling games… .[190]

The Iowa statute also allows eligible applicants to enter into a five-year lease agreement with the city of Dubuque to conduct wagering on live dog races.[191] This five-year lease agreement contains a single option to renew the lease for five additional years.[192]

3. Florida

In 2018, the state of Florida adopted legislation phasing out all greyhound racing in the state by 2021.[193] However, prior to this statutory change, Florida had four statutes that regulated the commercial greyhound racing industry.[194] This is logical because Florida is home

---

[188] Idaho Code Ann. § 99D.9C 1. A (West 2019).

[189] § 99D.9C 1. B.

[190] § 99D.9C 2. A.

[191] § 99D.9C 4. A.

[192] *Id.*

[193] Kitty Block, *Breaking News: Florida Residents Can Vote in November to End Greyhound Racing*, A Humane Nation (April 17, 2018),https://blog.humanesociety.org/2018/04/florida-residents-can-vote-november-end-greyhound-racing.html?credit=web_id93480558.

[194] Every twenty years Florida examines its constitution to access whether or not it needs to be changed. Jeremy Morrison, *Considering Constitutional Changes*, inweekly (April 23, 2018), http://inweekly.net/wordpress/?p=31601 Through public hearings, proposals are issued and considered and may or may not be introduced on the November ballot. *Id.* If the ballot receives 60% of the vote it will make its way into the state constitution. *Id.* One of the proposals was the prohibition of greyhound racing, which has been a repeat issue brought to both the Commission and the Florida State Legislature. *Id.* Florida's Constitution Revision Commission met on April 16, 2018 and voted to place a constitutional amendment on the 2018 ballot that would phase out greyhound racing by 2020. Kitty Block, *Breaking news: Florida residents can vote in November to end greyhound racing*, A Humane Nation (April 17, 2018), https://blog.humanesociety.org/2018/04/florida-residents-can-vote-november-end-

to the most greyhound racing tracks out of the states where greyhound racing is legal. Per the list above, there are nine tracks in the state: Daytona Beach Kennel Club; Derby Lane St. Petersburg Kennel Club; Ebro Greyhound Park; Flagler Dog Track; Jacksonville Orange Park Kennel Club; Naples-Ft. Myers; Mardi Gras- Hollywood; Palm Beach Kennel Club; and Sanford Orlando Kennel Club.[195]

The first statute, Florida Statute § 550.1647 regulates "unclaimed, uncashed, or abandoned pari-mutuel ticket[s]." According to the statute, if the tickets remain unclaimed for a year then the value of the tickets will be given to the State of Florida.[196] Florida Statute § 550.1648 makes it mandatory for all dog racing permit holders to provide greyhound adoptions.[197] The statute continues to outline rules and expectations for the adoptions: adoptions must occur on the weekends; charity races will fund the adoption program; and the kennel owner must notify permit holders when greyhounds are available for adoption.[198] Florida Statute § 550.09514, "Greyhound dog racing taxes; purse requirements," permits taxes to be charged on wagering during greyhound races and discusses the treatment of purse percentage rates.[199] Finally, Florida Statute § 550.2415 prohibits certain racing conditions and imposes penalties.[200] The statute applies penalties to owners or trainers of animals that are medicated with prohibited substances, and have high levels of naturally occurring substances.[201] Upon a finding of a violation of this section, the statute authorizes the revocation or suspension of licenses and permits held by the violator.[202] In order to implement the goal of the statute, which is to protect the integrity of greyhound racing and the animals, the statute

greyhound-racing.html?credit=web_id93480558.

[195] National Greyhound Association, *Race Tracks*, National Greyhound Associations, https://www.ngagreyhounds.com/race-tracks. In Florida the winning dog has to take a urine test. Keyle Swenson, *Dog racing 'has a drug problem' as 12 Florida greyhounds test positive for cocaine*, The Washington Post (July 6, 2017), https://www.washingtonpost.com/news/morning-mix/wp/2017/07/06/dog-racing-has-a-drug-problem-as-12-florida-greyhounds-test-positive-for-cocaine/?utm_term=.41dd0105990b. In 2017, 12 dogs tested positive for cocaine 18 times over four months. *Id.* Cocaine is new to the greyhound racing industry; however, since 2008 there have been 62 positive cocaine tests in Florida. *Id.* In 2016, the Department of Business and Professional Regulation's Division of Pari-Mutuel Racing revoked a greyhound trainer's license because 12 dogs under his care tested positive for cocaine. *Id.* Florida alleged the trainer was a "threat to the safety and welfare of any animals in his care." *Id.*

[196] Fla. Stat. Ann § 550.1647 (West 2004).

[197] § 550.1648.

[198] *Id.*

[199] Fla. Stat. Ann. § 550.09514 (West 2010).

[200] Fla. Stat. Ann. § 550.2415 (West 2015).

[201] § 550.2415 (1)(a)(b).

[202] § 550.2415 (3)(a).

authorizes the creation of rules to regulate the "maximum concentrations of medications, drugs, and naturally occurring substances."[203]

4. Alabama

In Alabama, the statute prohibits persons from influencing "any owner, trainer, handler, groom, or other person associated with or interest in any kennel, greyhound, or race in which any greyhound participates."[204] In addition, the statute makes it illegal to administer prohibited substances like poison and drugs to dogs about to enter a race.[205] Violation of this statute is a felony punishable for not less than 1 year and no more than 10 years; the statute also imposes a monetary penalty between the amounts of $5,000 and $50,000.[206]

5. Arkansas

The Arkansas statute, A.C.A. § 23-111-301 Greyhound Racing, permits greyhound racing in the state of Arkansas if the franchise is approved and granted by the Arkansas Racing Commission.[207] The commission may not grant more than one franchise in a single county and the minimum franchise cost is $1,000,000.[208]

The Arkansas Racing Commission promulgated rules for greyhound racing, including suspension and rulings; duties and obligations; racing operation; application for live racing dates; economic and other aspects of track locations; racing operation; location and physical plant; and ownership and management.[209]

6. West Virginia

In West Virginia, an individual cannot be involved in the business of greyhound racing unless they are required to be licensed.[210] In addition, eighty percent of the employees working at a greyhound-racing park must be a resident of West Virginia for at least one year prior to their employment.[211]

---

[203] § 550.2415 (7)(a).

[204] Ala. Code § 11-65-39 (1975).

[205] *Id.*

[206] *Id.*

[207] Ark. Code Ann. § 23-111-301(a)(1) (West 2018).

[208] § 23-111-301(d).

[209] Arkansas Racing Commission, *Rules and Regulations Governing Greyhound Racing in Arkansas*, Arkansas Racing Commission (Jan., 2018), https://www.dfa.arkansas.gov/images/uploads/racingCommissionOffice/greyhound_rules.pdf.

[210] W. Va. Code § 19-23-2 (a) (West 1969).

[211] W. Va. Code § 19-23-2 (b) (West 1969).

7. Connecticut

Greyhound racing is legal in Connecticut despite the fact that there are not any open greyhound tracks in the state.[212] Currently there is a bill in the Connecticut legislature that would outlaw the operation of greyhound racing tracks in the state, the last action was in February of 2018 when there was a public hearing held.[213]

8. Kansas

The Kansas state statute sets criteria for the eligibility of horses and greyhounds; registration of stable, kennel or other; and criteria that the greyhounds have to meet in order to be eligible to race.[214] Greyhounds must be fifteen months old; otherwise they do not meet the age requirement set by the statute.[215] The commission requires that greyhounds owned by "a stable, kennel or other entity" to be registered by the commission and for the appropriate registration fee paid.[216]

The Kansas Racing and Gaming Commission regulates gambling on greyhound racing.[217] The Kansas Racing and Gaming Commission has authority from the Parimutuel Racing Act, which is authorized by the Kansas Constitution.[218]

9. Oregon

Oregon, unlike other states, imposes not only restrictions on greyhound racing, but a mens rea requirement for greyhound trainers.[219] A greyhound is not qualified to race if in the last twenty four hours the dog has been administered drugs; if any dugs are detected in the dog's system on race day; if the dogs racing performance was altered in any way; and if the dog does not meet the requirements set by the

---

[212] Grey2K USA Worldwide, *Greyhound Racing in Connecticut*, Grey2K USA Worldwide, https://www.grey2kusa.org/about/states/ct.php.

[213] Connecticut General Assembly, *Basic Legislative Document Search*, Connecticut General Assembly, https://search.cga.state.ct.us/r/basic/ search ("Greyhound Racing").

[214] Kan. Stat. Ann. § 74-8812 (West 1987).

[215] Kan. Stat. Ann. § 74-8812 (b) (West 1987).

[216] Kan. Stat. Ann. § 74-8812 (d) (West 1987).

[217] Kansas Racing and Gaming Commission, *Code of Conduct*, Kansas Racing and Gaming Commission, http://www.krgc.ks.gov/index.php/overview/krgc/code-of-conduct.

[218] Kansas Racing and Gaming Commission, *Overview*, Kansas Racing and Gaming Commission http://www.krgc.ks.gov/index.php/overview.

[219] O.R.S. § 462.415 Mens rea is defined as a "guilty mind". https://www.law.cornell.edu/wex/mens_rea Mens res "refers to the state of mind statutorily required in order to convict a particular defendant of a particular crime. *Id*.

racing secretary.[220] If the statute is violated, then the greyhound can be disqualified and the trainer may not earn any trophies or earnings on behalf of the dog.[221] In order to prevent violation of this statute and to protect the racing greyhounds, the statute authorizes drug testing to be done on racing greyhounds.[222]

10. Wisconsin

Wisconsin does not have any open greyhound racing tracks that are currently registered with the National Greyhound Association; however, Wisconsin has passed several laws that regulate the commercial greyhound industry.[223] In Wisconsin, the following are prohibited activities: racing under an unregistered name, tampering with the results of a race, bribing, and racing dogs without proper registration with the National Greyhound Association.[224] In addition, trainers are prohibited from knowingly training a greyhound using live lures or bait, or knowingly permit a dog that was trained using live luring.[225] Finally, in regard to live luring, an individual cannot enter or permit a greyhound if the trainer "can reasonably [be] expect[ed] to know that the dog was trained in a state that does not prohibit the knowing use of live lures."[226] Lastly, the state of Wisconsin requires that if death is imposed on racing dogs, humane chemicals that are authorized by the state must be the method utilized.[227]

---

[220] § 462.415 (1)(a)-(c).

[221] § 462.415 (4) Oregon also has case law that furthers the legal protections given to dogs. *State v. Newcomb*, 375 P.3d 756, 756 (Or. 2016). The court held that when law enforcement seizes an animal, due to belief that the animal is being treated in a cruel manner, the police do not need to obtain a warrant before any testing is done to prove cruelty. Id. Therefore, the Fourth Amendment does not extend to the seizure of an animal. Id. This holding establishes precedent in Oregon that animals are not "mere property and don't require a warrant to search internally. The court differentiated animals from, say, containers or suitcases with drugs or other items stashed inside." Animal Legal Defense Fund, *August 2016 Animal Law Update: Recent Developments in the Emerging Field of Animal Law*, Animal Legal Defense Fund, http://aldf.org/resources/animal-law-update/august-2016-animal-law-update-recent-developments-in-the-emerging-field-of-animal-law/.

[222] § 462.415 (6).

[223] Wis. Stat. Ann. § 562.056, § 562.10, § 562.105, § 562.12 (West 2018).

[224] § 562.12(1)-(3); § 562.056.

[225] § 562.10(1)-(2).

[226] § 562.10(3).

[227] § 562.105.

11. Rhode Island

Greyhound racing in Rhode Island is legal so long as that the practices of dog racing comply with Rhode Island law.[228] Greyhound racing permits can only be granted in the towns of Burrillville, Lincoln, and West Greenwich.[229] Rhode Island has several statutes that regulate the sales of greyhounds and make greyhound racing illegal.[230] When it comes to the sale or disposition of retired racing greyhounds, it is illegal to transfer a retired greyhound to an individual or business for medical purposes.[231] In addition, Rhode Island specifies how a retired greyhound or a racing greyhound, will be put to death.[232] The statute requires that greyhounds be put to death in a humane manner; with the statute defining "humane" as, "by means of euthanasia by lethal injection, or by any other standard of humane killing that may be established by the American veterinary medicine association."[233]

II. States where Greyhound Racing is Illegal and there are Statutes

1. Arizona

In Arizona, Greyhound racing regulation can be found in the Arizona Administrative Code. The Code prohibits the Arizona Racing Commission from granting a license for the operation of greyhound racing tracks.[234] The administrative regulations do not include any civil or criminal penalties.[235]

2. Colorado

Greyhound racing has been prohibited in Colorado since 2014.[236] No persons can engage in live greyhound racing where betting on the ability of the dogs is taking place.[237] In addition, no applications will be approved where the person is in business to conduct live greyhound racing.[238]

---

[228] T41 R.I. Gen. Laws Ann. § 41-3.1-1 (West 1956).

[229] *See id.*; § 41-3.1-3(a).

[230] Tit. 4 R.I. Gen. Laws § 4-1-34, § 4-1-34.1, § 41-3.1-1 (Lexis through 2018 session).

[231] Tit. 4 R.I. Gen. Laws § 4-1-34.1 (Lexis through 2018 session).

[232] Tit. 4 R.I. Gen. Laws § 4-1-34 (Lexis through 2018 session).

[233] *Id.*

[234] Ariz. Admin. Code § R19-2-311 (Lexis through 2018 session).

[235] *Id.*

[236] Colo. Rev. Stat. Ann. § 44-32-604 (Lexis through 2018 general election).

[237] *Id.*

[238] *Id.*

3. Georgia

Georgia does not have a statute that explicitly eliminates greyhound racing, however, Georgia does highly regulate activities on which an individual can gamble.[239]

4. Idaho

Idaho dog racing laws do not apply to neither exhibition-style dog races, which are races that would take place at a county fair, nor to sled dog races.[240] I.C. § 54-2514A outlaws live dog races, pari-mutuel betting, and training dogs to compete in live races where there is pari-mutuel betting.[241] But while the Idaho dog racing statute is narrow in scope, the statute applies to all dogs and not just greyhounds.[242]

5. Louisiana

Louisiana's statute outlaws dog racing.[243] The statute does not contain any specific practices associated with dog racing that are outlawed, only that dog racing itself is outlawed.[244] The statute does not contain any information about penalties if this statute is violated.[245]

6. Maine

In Maine, it is illegal to hold, conduct, and operate a greyhound race with the intent to broadcast the event to the public.[246] In addition, Maine added an interstate component to the prohibition on greyhound racing; one cannot send or receive "simulcasting of greyhound racing for commercial purposes."[247]

7. Massachusetts

Any form of dog racing is prohibited in Massachusetts and, therefore, the commission is prohibited from accepting applications or

---

[239] Ga. Code Ann. § 16-12-21 (Lexis Advance through 2018 Extra Session of the General Assembly); Ga. Code Ann. § 16-12-23 (Lexis Advance Through 2018 Extra Session of the General Assembly).

[240] Idaho Code § 54-2514A (2), (3) (Lexis through 2019 regular session).

[241] § 54-2514A (1).

[242] *Id*.

[243] La. Stat. Ann. § 4:249 (2018).

[244] *Id.*

[245] *Id.*

[246] Me. Rev. Stat. Ann. tit. 8, § 301 (2018).

[247] *Id.*

requests for dog racing.[248] The statute does include a penalty if there is a violation of the statute, and the individual will be subject to a civil penalty of nothing less than $20,000.[249] Massachusetts provides statutory guidance on "euthanasia, transfer to another jurisdiction, adoption, or donation or sale for medical research or other purposes."[250] A retired racing greyhound is not to be put to death unless there has been reasonable efforts to adopt the greyhound, however, if the greyhound must be put to death, the statute requires that it be done in a humane manner (euthanasia by lethal injection).[251]

Lastly, the commission is required to maintain detailed records of all greyhounds that were former racing dogs.[252] The record must include, the dog's registered name, ear tattoo, and the information for the dog's trainer; the names and addresses of any racetrack that the greyhound raced at; if the dog had been retired from breeding, the information for the person the dog was released to; the adopter's/purchaser's information; and if the greyhound was euthanized, the information of the entity that performed the euthanasia.[253]

8. Minnesota

In Minnesota, a greyhound race that is conducted using live bait is illegal and so is training a greyhound using live bait or lures.[254] Minnesota does not have a statute that eliminates greyhound racing all together, but instead their statute makes one of the most contested practices illegal.[255]

---

[248] Mass. Gen. Laws Ann. ch. 128A, § 14E (West 2010).

[249] *Id.*

[250] *Id.*

[251] *Id.*

[252] *Id.*

[253] Mass. Gen. Laws Ann. ch. 128A, § 14E (1)-(7) (West 2010). When greyhound racing was legal in Massachusetts there were two greyhound racing tracks, Wonderland Greyhound Park and Raynham Park. Animal Legal Defense Fund, *Work to End Greyhound Racing in Massachusetts*, Animal Legal Defense Fund (July 18, 2008), http://hlrecord.org/2007/11/work-to-end-greyhound-racing-in-massachusetts/. For these tracks to be operational there needed to be at least 1,000 dogs ready to race. *Id.* Both of these greyhound racing tracks were using practices that were discussed in this note, including holding the greyhounds in cages measuring 32 x 34 x 42; feeding the dogs the worst-grade raw meat (4D meat); and allowing dogs to get injured and race in poor to extreme weather conditions. *Id.* As a result of these practices, there were 700 dogs seriously injured in 2002. *Id.*

[254] Minn. Stat. Ann. § 343.315 (West 1991).

[255] *Id.*

9. New York

In New York, it is considered a felony to "injure[], destroy[], or tamper[] with…any horse, mule, dog or any other domestic animals"[256] The law increases the protection over domestic animals, which are used for commercial racing.[257] The statute does not contain any information about the classification of the crime or the penalty.

10. Nevada

In Nevada, it is a misdemeanor to conduct dog racing as a gaming activity.[258] The Nevada statute is very broad, it encompasses all dog racing, not just greyhound racing. Another Nevada statute makes it illegal for the Nevada Gaming Commission to issue licenses in connection with dog racing or pari-mutuel wagering.[259] This section of the statute does not prohibit "off-track pari-mutuel wagering on dog racing."[260]

11. North Carolina

In North Carolina, it is illegal to "hold, conduct, or operate" a greyhound racing facility meant for the public.[261] It is also illegal to transmit or receive a simulcast of a greyhound race.[262] If an individual holds a greyhound race or falls into any of the other situations that this statute covers, then the individual that violated the statute will be guilty of a Class 1 misdemeanor.[263]

12. Oklahoma

In Oklahoma, it is a misdemeanor to knowingly train a greyhound to race using live animals as a lure.[264] This offense is punishable by a civil penalty of no more than $250.[265]

---

[256] N.Y. Agriculture and Markets Law § 361 (McKinney 1965).

[257] *Id.*

[258] Nev. Rev. Stat. Ann. § 207.235 (West through 2017 session).

[259] Nev. Rev. Stat. Ann. § 466.095 (West through 2017 session).

[260] *Id.*

[261] N.C. Gen. Stat. Ann. § 14-309.20 (a) (West through S.L. 2018 -145 Regular and Extra sessions).

[262] N.C. Gen. Stat. Ann.. § 14-309.20 (b) (West through S.L. 2018 -145 Regular and Extra sessions).

[263] N.C. Gen. Stat. Ann. § 14-309.20 (c) (West through S.L. 2018 -145 Regular and Extra sessions).

[264] Okla. Stat. Ann. tit. 21 § 1685.1 (West through 2018 session).

[265] *Id.*

13. Pennsylvania

In Pennsylvania, the greyhound racing statute makes it illegal to not only hold a greyhound racing event, but to also simulcast a greyhound-racing event.[266] The statute makes greyhound racing illegal if it is held or conducted for public entertainment.[267] A violation of the statute results in committing a misdemeanor.[268] A person is guilty of simulcasting when, her or she "transmits or receives interstate or intrastate simulcasting of greyhound racing."[269] The punishment for violating the simulcasting provision of the Pennsylvania statute is a civil penalty of up to $10,000.[270]

14. South Dakota

In South Dakota, licenses can be revoked, refused, or suspended for violations of the rules that the commission adopted.[271] In addition, betting one to two hundred dollars on races constitutes a misdemeanor.[272]

15. Virginia

Under Virginia law it is a Class 4 felony to "hold, conduct, or operate any greyhound races for public exhibition."[273] In addition, like many other states where greyhound racing is illegal, it is also illegal in Virginia to transmit or receive simulcasting of greyhound races.[274]

16. Vermont

Vermont's statute makes it illegal to "hold, conduct, operate, or simulcast a pari-mutuel dog race for public exhibition."[275] If the statute is violated then the individual is subject to no more than a $1,000 fine or no more than one year in prison, or both.[276]

---

[266] 18 Pa. Stat. and Cons. Stat. Ann. § 7516 (West through 2018 session).

[267] *Id*.

[268] 18 Pa. Stat. and Cons. Stat. Ann. § 7516 (a) (West through 2018 session).

[269] 18 Pa. Stat. and Cons. Stat. Ann. § 7516 (b)(1) (West through 2018 session).

[270] § 7516 (b)(2).

[271] S.D. Codified Laws § 42-7-91 (1)-(3) (2005).

[272] S.D. Codified Laws § 42-7-76.2 (2005).

[273] Va Code Ann. § 59.1-405.1(A)(C) (West 2018).

[274] Va Code Ann § 59.1-405.1 (B) (West 2018).

[275] Vt. Stat. Ann. tit. 31 § 614 (b) (West 2018).

[276] *Id.*

17. New Hampshire

New Hampshire's greyhound racing statutes were repealed in 2010, making dog racing illegal in the state.[277]

18. Washington

In Washington it is a Class B felony to hold, conduct, or operate greyhound racing tracks for public spectacle, gambling, or exhibition events.[278]

III. States with no Greyhound Racing Statutes

There are 22 states with no laws covering the legality or regulation of the commercial greyhound racing industry. The following 22 states do not have any present greyhound legislation: Alaska, California, Delaware, Hawaii, Illinois, Indiana, Kentucky, Michigan, Mississippi, Montana, Nebraska, New Jersey, New Mexico, North Dakota, Ohio, South Carolina, Tennessee, Utah, Washington, Wyoming, Missouri, and Maryland.[279] It is not surprising that a lot of states do not have greyhound-racing laws; states that have not banned greyhound racing or do not have strict regulation may still allow "off-track or satellite wagering as well as the breeding of dogs used for racing."[280] Some of the states, instead of prohibiting racing all together, have reformed their gambling laws.[281]

---

[277] Damien Fisher, *After Fla. Law change, more greyhounds may be headed to New Hampshire*, Union Leader (Nov. 14, 2018), https://www.unionleader.com/news (search in search bar for "After Fla. law change, greyhounds"; then follow article titled "After Fla. law changed, more greyhounds may be headed to New Hampshire") (last visited Feb. 21, 2019).

[278] Wash. Rev. Code Ann. § 9.46.039 (West 1996).

[279] Kentucky has extensive regulation over horse racing. State law stops at animal abuse but does not go as far as to say that greyhound racing is a form of abuse. See generally, Ky. Rev. Stat. Ann. § 230 (West 2015);North Dakota imposes a betting certificate system upon dog racing, but does not ban it. N.D. Cent. Code Ann. § 53–06.2 (West 1987).

[280] PETA, *Greyhound Racing: Death in the Fast Lane*, PETA, https://www.peta.org/issues/animals-in-entertainment/animals-used-entertainment-factsheets/greyhound-racing-death-fast-lane/.

281 *Id.*

Legal Protection of Animals in Israel

Marine Lercier [1]

I. Introduction to the Animal Protection Dynamics in Israeli Society

The lawmakers of *Israel* have been promoting *animal welfare* and *animal rights* in an unprecedented way in recent years, irrespective of their political affiliation. Lawmakers have united to increase the importance of cruelty to animals and animal suffering as a topic at the Knesset,[2] where a Subcommittee for cruelty towards animals has been created.[3] Additionally, Animals Rights Day is marked with vegan dishes to be served to the Members of Parliament in light of the Jewish religious and ethical values.[4]

Animal defense organizations use the opportunity laid out in the Animal Protection Law to bring animal abuse cases to the courts, with some even taken to the Supreme Court of the State. Aside from Egypt, which added the humane treatment of animals into its Constitution in 2014,[5] and has criminalized their mistreatment since 1937,[6] Israel is the only country in the Middle East to even possess animal anti-cruelty legislation and to regulate animal welfare from early on.

Protests to end animal suffering have been taking place in Israel since the beginning of the 2010s. However, activism started in the 1980s and continued with vegetarian campaigns in the 1990s, mostly in opposition to factory-farming and animal testing. More recently, a speech given by activist Gary Yourofsky on veganism and animal rights became one of the most watched videos of all time in Israel.[7] At the same time, several undercover investigations led by Anonymous for

[1] Master in Animal Law and Society, UAB, 6th edition. Written in Barcelona, reviewed June 12th of 2017.

[2] *See generally* The Knesset, https://main.knesset.gov.il/EN/Pages/default.aspx (last visited Feb. 1, 2019).

[3] *See generally Subcommittee on Cruelty Towards Animals,* The Knesset, http://knesset.gov.il/committees/eng/committee_eng.asp?c_id=577 (last visited Feb. 1, 2019).

[4] *See generally* Press Release, Knesset marks Animal Rights Day with vegan dishes, special plenum session (Feb. 25, 2014), http://knesset.gov.il/spokesman/eng/PR_eng.asp?PRID=11169.

[5] Law No. 58 of 1937 (Criminal Code) *al-Waqā'i' al-Miṣriyyah*, art. 355-357, 5 August 1937 (Egypt).

[6] https://www.globalanimallaw.org/database/national/egypt/.

[7] See *generally* Gary Yourofsky, *The Most Important Speech You Will Ever Hear,* YouTube (Feb. 6, 2015), https://www.youtube.com/watch?v=U5hGQDLprA8.

the Animals Israel were broadcasted on major TV Channels such as Channel 2 and Channel 10 News, catching the attention of the public on a regular basis.[8] On the other hand, the 269life[9] movement spread internationally after activists in Israel began tattooing themselves after the number given to a rescued calf.[10] Other organizations and activist movements work hard to sensitize and educate the public by reporting, drafting, filing suits, and holding protests such as Let the Animals Live, Israel against Live Shipments, and CHAI, among others.

The biggest march for animal rights in Israel's history, and worldwide, took place in September 2017,[11] with approximately 30,000 people marching in downtown Tel Aviv to denounce the inhumane treatment of animals. The march called for compassion, justice, and veganism in Israel, especially regarding the live exportation of animals from Europe and Australia, the absence of a no-killing stray animals policy, the lack of enforcement of anti-cruelty legislation, and the harm caused to animals in slaughterhouses.[12]

According to a survey led by the Economy Ministry, a third of Israeli households have pets, with 380,000 registered dogs, as a permit is mandatory. No exact numbers can be found regarding cats, but there are estimated to be about 260,000.[13] Feral cats are everywhere in Israel. As for the animals kept by the food industry, according to Avraham Pinkas, founder of Hai-Meshek, an Israeli organization preventing the cruelty against animals that launched successful campaigns, there is one hen per citizen in Israel, meaning that every person is responsible for the treatment inflicted upon this animal.[14] The organization's rationale is that, in such a small country, people can choose to free laying-hens from their cages by buying free-range eggs and thus improve the welfare of the chickens. Thus, the organization has created a label to ensure the

---

[8] *See generally Undercover Investigations,* Animals Now, https://animals-now.org/en/investigations/ (last visited Feb. 1, 2019).

[9] *See generally* 269, http://www.269life.com/#&panel1-1 (last visited Feb. 1, 2019).

[10] Netta Ahituv, *The Israeli Calf that Started a Mass Tattoo Movement*, Haaretz (Mar. 21, 2013, 3:28 PM), http://www.haaretz.com/israel-news/the-israeli-calf-that-started-a-mass-tattoo-movement.premium1.511045.

[11] *See* Joey Carbstrong, *The Biggest Animal Rights March in History*, YouTube (Sept. 10, 2017), http://www.jpost.com/Israel-News/WATCH-Thousands-flock-to-mass-Tel-Aviv-rally-for-animal-rights-504657.

[12] Daniel K. Eisenbud, *Thousands Flock to Mass Tel Aviv Rally for Animal Rights*, The Jerusalem Post (Sept. 10, 2017), http://www.jpost.com/Israel-News/WATCH-Thousands-flock-to-mass-Tel-Aviv-rally-for-animal-rights-504657.

[13] *Id.*

[14] *See* Avraham Pinkas, *Avi Pinkas and Free Range*, YouTube (Aug. 14, 2011), https://www.youtube.com/watch?v=82Lh6by8EPs, https://www.youtube.com/watch?v=fx3FbpYLOno.

living conditions of free-range laying hens,[15] as battery-cages have not been forbidden yet in the country despite their horrible reality.[16] Similar campaigns could be launched regarding other animal issues, such as the lack of prohibitions for the gestation of pigs still confined in crates. Another area ripe for improvement is the welfare of milking cows, as Israel has one of the highest dairy production rates per-capita in the world.[17]

Having briefly introduced the dynamics of animal protection in the Israeli society, I will first investigate the religious and moral fundaments of animal protection that can be found in Judaism (II). Secondly, how these foundations have inspired legislation on animals in Israel as a tool for interpretation and evolution in the application of the norms, especially in animal cruelty cases, as credited by the courts (III). Next, while demonstrating that the basis for animal protection and care is strong in Jewish tradition and progress has been made, I will reveal that there is still much to be done as regards serious welfare issues particular to Judaism and Israeli society (IV). Nonetheless, given Israeli society activism and involvement in denouncing animal abuse, and religious roots for veganism and respect for animals, I believe that we can hope for a vegan future because Israel is already home to the highest number of vegans per capita and to promising research to provide alternatives to the intensive farming, breeding, and killing of animals (V).

II. Religious and Moral Fundamentals of Animal Protection in Judaism

a. From the Holy Texts

The most fundamental connection between human beings and animals is found in the first chapters of the Torah. Indeed, Adam had the responsibility to name the animals,[18] and all non-human and human animals are even said to have been speaking the same language before

[15] *See About Hai Meshek*, HAI-MESHEK.ORG, http://www.hai-meshek.org.il/?page_id=335 (last visited Jan. 24, 2019).

[16] *See* Orna Rinat, *The Brutal Reality Behind Israel's Egg and Poultry Quotas*, HAARETZ (Dec. 29, 2015), http://www.haaretz.com/opinion/.premium-1.694293.

[17] Joshua Levitt, *The Land of Milk*, THE ALGEMEINER (Mar. 11, 2014), https://www.algemeiner.com/2014/03/11/the-land-of-milk-israels-super-cows-are-the-worlds-most-productive-video/.

[18] Now the Lord God had formed out of the ground all the wild animals and all the birds in the sky. He brought them to the man to see what he would name them; and whatever the man called each living creature, that was its name. So the man gave names to all the livestock, the birds in the sky and all the wild animals. *Genesis 1:1.*

the original sin.[19] In the very beginning, despite man having been given dominion over the Animal Kingdom, including the employment of animals in useful services, meat-eating was not permitted. According to Jewish tradition, Adam and Eve did not eat meat; thus, the Torah implies the ideal human diet as vegetarianism, making what we eat a matter of primary concern from the very moment of the Creation.[20] Also, Genesis emphasizes the link between humanity, Adam, and the earth, Adamah.

The story of Noah's ark was a fundamental episode and turning-point regarding the relationship between human and non-human animals, as only after punishing man's behaviors, due to man's supposed intrinsic weakness, did God decide to allow humans to eat animals within the "Seven Laws," known as the "Noahide laws." As a consequence, only after the Flood has man been given the limited right to kill animals for food, provided there is need and that it is done in the most humane way possible. The principle of tsaar ba'alei chayim, prohibiting unnecessary pain to animals, was laid down by the Torah more than 3,000 years ago. Consequently, there is a biblical limit to Man's cruelty and use of animals for human need found in the prohibition of cutting a limb off a living animal, later understood to broadly prohibit unnecessary cruelty and undue cruel slaughter.[21]

b. From the Rabbinic Interpretation

One of the most famous Jewish scholars of the 12th century Orthodox movement, Maimonides,[22] considered animals to exist for their own sake, and independent of Man since they were created by God's will. He further considered that there was no difference between the pain of Man and the pain of other living creatures. An interesting perspective and of contemporary interest is his teaching restricting killing the

[19] Now the serpent was more crafty than any of the wild animals the Lord God had made. He said to the woman, "Did God really say, 'You must not eat from any tree in the garden'?" The woman said to the serpent, "We may eat fruit from the trees in the garden, but God did say, 'You must not eat fruit from the tree that is in the middle of the garden, and you must not touch it, or you will die.'" "You will not certainly die," the serpent said to the woman. "For God knows that when you eat from it your eyes will be opened, and you will be like God, knowing good and evil." Genesis 1-3.

[20] And God said: "Behold, I have given you every herb yielding seed which is upon the face of all the earth, and every tree that has seed-yielding fruit—to you it shall be for food." *Genesis 1:29*.

[21] Every moving thing that liveth shall be meat for you; even as the green herb have I given you all things. But flesh with the life thereof, which is the blood thereof, shall ye not eat. Genesis 9:3-4.

[22] *See* Moses Maimonides, A Guide for the Perplexed, (M. Friedlaender trans., E.P. Dutton 4th revised ed. 1904) (1186). translated from the original Arabic text, 1186, by M. Friedlaender, 4th revised ed., New York: E.P. Dutton, 1904.

offspring within sight of its mother, based on the indistinguishable feelings of love and tenderness that both human and non-human animals share towards their young. Such a scene would unambiguously convey extreme pain, and has led to the Jewish prohibition of killing a mother and her offspring on the same day.

Another interesting element is the perspective on the extinction of species. The Jewish point of view according to Nachmanides and the Talmud, is that it is it is not permitted to bring an entire species to extinction, based on the idea that nothing is deemed to have been created in vain.[23] Reform Judaism, with a view also supported by Maimonides, considers that dominion over animals comes with an obligation to protect all of God's creatures, because they all have intrinsic value. Notably, the concept of tikkun olam, which means healing the world, is very important to Reform Judaism, as this concept implies supporting the protection of endangered species and their habitats. Moreover, it considers the duty of care to domestic animals to be a moral obligation.

On the other hand, hunting is considered by the three movements as being a violation of Jewish ethical codes, as understood by principles like tsaar ba'alei chayim, bal tashchit,[24] as well as a cruel and wasteful sport. Conservative Judaism highlights another interesting example of mercy to animals, in line with the contemporarily researched and established link between cruelty to and violence directed towards animals, and the subsequent or concomitant violent behavior of humans.[25] Indeed, according to this theory, compassion towards animals would promote piety and prevent human beings from behaving cruelly towards each other.

III. Overview of the Legislation on Animals in Israel: Cruelty, Companions, Experiments and Wildlife

The Minister for the Environment,[26] and in particularly the Minister for the Agriculture, are principally in charge of the protection of animals in the State of Israel;[27] it was decided that the latter would

[23] Nachmanides was also a Spanish scholar, from the 13th century and died in the Holy Land after having been expelled from Spain.

[24] i.e. the law prohibiting waste.

[25] *See*, More Information on Companion Animals, Peta, https://www.peta.org/issues/animal-companion-issues/companion-animals-6/ (last visited March 7, 2019); The Human Society of the United States, http://www.humanesociety.org/issues/abuse_neglect/qa/cruelty_violence_connection_faq.html?referrer=https://www.google.es/ (last visited Feb. 1, 2019).

[26] Ministry of Environmental Protection, State of Israel, http://www.sviva.gov.il/English/Pages/HomePage.aspx (last visited Feb. 1, 2019).

[27] Ministry of Agriculture, State of Israel, http://www.moag.gov.il/Pages/HomePage.aspx http://www.moag.gov.il/Pages/HomePage.aspx.

continue to be the one enforcing animal welfare legislation amid concerns from activist groups of a possible conflict of interest, and accusations of negligence in its implementation.[28] The Minister for Agriculture is in charge of enacting regulations concerning the keeping of animals (farm animals and pets in shops), the conditions of transporting animals, the means of killing animals (except for the slaughter for food), training animals, and animal exhibitions.

We will provide an overview of anti-cruelty legislation structure, provisions and enforcement (i) with a focus on cat and dog protection in Israel (ii) and the state of animal experimentation, before mentioning (iii) wildlife protection measures, and (iv) draft bills seeking approval before the Knesset in the near future (v).

a. Anti-cruelty Legislation and General Animal Protection Framework

The *Animal Protection Law on Cruelty to Animals*, 5754, was passed by the *Knesset* on 28 Tevet[29] which *CHAI* (Concern for Helping Animals in Israel), an Israeli animal welfare organization,[30] helped to draft. It lays down main prohibitions towards animals and the punishment of the breach thereof.[31] This is the main piece of Israeli legislation regulating the treatment of animals. The same year, a second Animal Protection Law on Animal Experimentation was enacted. Both were initiated by Member of Knesset, Abraham Poraz.

The Law on Cruelty to Animals describes in very simple words that which is forbidden towards animals, which is preferable to using ambiguous terms to refer to cruel treatments. Thus, it appears to be a broad yet efficient text aimed at regulating a wide range of human behaviors towards all animals, under all circumstances, according to the text.

Animal use for experimentation is nonetheless excluded from the application of the State anti-cruelty legislative provisions, but is covered by particular regulations. Also excluded is the slaughter of animals for the purposes of food for humans, as they obey other commandments, and the legislature does not want to interfere with neither Jewish nor Muslim ritual slaughter. Lastly, slaughter of animals concerned with specific regulations of the Rabies and Animal Diseases

---

[28] Sharon Udasin, Animal Welfare Enforcement to Remain in Agriculture Ministry, THE JERUSALEM POST (Dec. 14, 2015, 3:59 PM), http://www.jpost.com/Israel-News/Animal-welfare-enforcement-to-remain-in-Agriculture-Ministry-437247.

[29] 11 January 1994.

[30] Concern for Helping Animals in Israel, http://www.chai.org.il/en/about/about_accomplishments_i.htm, (last visited Feb, 1, 2019).

[31] Udasin, *supra* note 27.

ordinances of 1934 and 1985 is excluded for the general interest of the State to prevent and eradicate zoonoses.[32] Yet these ordinances ought to be amended, as they cannot be read in any way other than the outdated notion that animals are regarded as pests and treated as such, without much consideration. More balance would be welcome in the means for human health protection as an end.

The anti-cruelty law stipulates, under Section 2, that (a) "no person shall torture, treat cruelly or in any way abuse any animal;" (b) "no person shall incite one animal against another;" (c) "no person shall organize a contest between animals" making it clear that animal fighting and any other sport or competition involving animals is strictly forbidden;[33] and (d) "no person shall cut into a live tissue of an animal for cosmetic purposes" prohibiting animal vivisection for teaching purposes as well as prohibiting in 2001 practices such as cropping the ears and tails of purebred dogs. In 2015, an amendment prohibited tattooing. However, because another particular law has been designed specifically to regulate experimentation on animals, this anti-cruelty law does not apply to animals in laboratories used for experimentation.

Additionally, the law protects animals used for work, following the traditional view that Man can use animals to help him when carrying out useful tasks, as both have evolved to cooperate through and benefit from working relationships due to their mutual needs. It aims to ensure that Man respects the natural limitations imposed upon the animal, requiring care for an animal's physical condition, that must be accounted for when prohibiting unfit animals to work. Working any animal to exhaustion is equally forbidden under Section 3. This provision is particularly impregnated with Jewish spirit. For example, it requires that animals rest on Shabbat, just like Man must. The scope of the law does not privilege one category of animals over the other; companion animals, captive animals, farm and wild animals are entitled the same level of protection through a system of prohibition of human behaviors.

The law also mentions the interdiction of killing by poison, notably quoting strychnine, a neurotoxin, which is toxic especially to birds, cats, dogs, mice, rats, rabbits and other small vertebrates. The toxin kills animals by causing muscular convulsions leading to asphyxia, particularly painful and cruel. An exemption applies to veterinarians killing animals through means of poison for prevention of rabies and other zoonoses under authorization and control of the Veterinary Services of the Ministry of Agriculture according to the Rabies and Prevention of Animal Diseases ordinances.

---

[32] Rabies Ordinance (1934) http://extwprlegs1.fao.org/docs/pdf/isr20790e.pdf, *Animal Diseases Ordinance (1985)* http://extwprlegs1.fao.org/docs/pdf/isr21179.pdf.

[33] For example, there is not and has never been in Israel horse racing or dog racing, nor bullfighting.

The law establishes powers to search and investigate any offense under the Law in Section 6, in which case, according to Section 8, the animal can be seized as a protective measure when it is suspected that abuse has been committed. Section 13 stipulates that, should the state of an animal justify the need to end its sickness or suffering, euthanasia should be carried out without causing unnecessary suffering, essentially meaning, in the most humane way possible.

Moreover, Section 15 institutes the right for animal protection organizations, duly approved by the Minister for the Environment, to file complaints regarding offenses to the law, i.e. cruelty to animals. There is no issue of legal standing as far as animal defense organizations are concerned in Israel; organizations are entitled to defend the interests of animals in the courts whether it is a civil, administrative, or criminal process. Following an amendment to the Animal Protection Law in December 2015,[34] these offenses are punishable by up to 4 years of imprisonment for cruel treatment (Section 2), and up to 1 year of imprisonment for breaching the prohibition on working animals (Section 3) or poisoning (Section 4), coupled with fines of up to NIS 226 000.[35] Progress was heavily welcomed by civil society, members of the Knesset, the government, and even the Jerusalem Post, although perhaps mistakenly, speaking of stricter animal rights measures.

Covering the main areas pertaining to the protection of animals, Section 14 establishes a Fund for Animals, which is in charge of the education, information, training, and assistance regarding animal cruelty issues. Moreover, when punishment is decided, but does not amount to prison for an offense committed under the Law on Protection of Animals, the fine granted is systematically given to the Animal Fund with the objective of promoting the purpose of this law.

Significantly, the Knesset amended the Law in 2015 to establish the duty of care of the animal's guardian, as well as a provision for the basic needs of an animal as a question of welfare.[36] These laws ensure that abandonment can result in sanctions when perpetrated by a non-owner. The law is to be applied both to the owner and to the holder of the animal, regardless of ownership. Additionally, there is a clause adding that shelters have the obligation to spay and neuter their animals before putting them up for adoption.

In addition, another new and major provision was introduced

[34] Sharon Udasin, Knesset passes stricter animal rights measures: more jail time, increased fines for violators, THE JERUSALEM POST (December 15th, 2015), http://www.jpost.com/Israel-News/Politics-And-Diplomacy/Knesset-passes-stricter-animal-rightsmeasures-More-jail-time-increased-fines-for-violators-437396.

[35] About 57 000 euros as of June 12th, 2017.

[36] Knesset approves amendments to Animal Welfare Law calling for harsher punishment for abusers, THE KNESSET (Dec. 15, 2015), https://knesset.gov.il/spokesman/eng/PR_eng.asp?PRID=11818.

by the 2015 amendment, singling out the responsibility of senior executives of corporations that handle animals, such as slaughterhouses, to do everything in their power to prevent abuse against animals. This provision emphasizes their responsibility of supervising animal welfare from the top down. This puts the burden on the executive to prove that they did everything they could to prevent cases of abuse. The promoter of the amendment, MK Itzik Shmuli from the Zionist Union, said the next aim was to extend this responsibility to the managers of such corporations.

After the approval of the first reading of this amendment, Dov Lipman, from the Yesh Atid party acknowledged that there is a spirit of change in the air regarding progress on preventing the suffering of animals in Israel, highlighting that, "[w]e now have an agricultural minister, Uri Ariel, who truly cares about the issue and, as this law shows, he plans to take action, [while] the current public security minister, Gilad Erdan, is someone who will, . . . without a doubt, be strict with enforcing the laws in this realm. This creates a real window of opportunity for real progress on this important Jewish and human value."[37]

b. Companion and Stray Animals: Cat and Dog Legislation

The Dog Regulation Law of 2002, regulating the guardianship of dogs, asserts that all dogs must be licensed, micro-chipped, and vaccinated annually against rabies.[38] The Prohibition on Declawing Cats of 2011[39] forbids onychectomy,[40] amounting mutilation or amputation, unless it is vital for the health of the animal or its owner, imposing a $20,000 fine and up to a year of prison on violators. The question of animal spaying and neutering is a hot topic in Israeli society, not only because it questions questioning the religious validity of such procedure,[41] but also because the serious overpopulation and predicament of stray animals in the country calls for more effective measures to manage the street population.

Following a pilot project conducted by Israel's Ministry of the

[37] Sharon Udasin, Knesset approves strict amendments to animal welfare law in first reading, THE JERUSALEM POST (Jul. 28th, 2015), http://www.jpost.com/Israel-News/Knesset-approves-strict-amendments-to-Animal-Welfare-Law-in-firstreading-410426.

[38] Main pieces of legislation and regulations can be accessed from the *SPCA* platform at http://spca.co.il/newsite/pageen.asp?pid=41.

[39] Erin Skarda, In Israel, declawing your cat could get you jail time, TIME (Dec. 9th, 2011), http://newsfeed.time.com/2011/12/09/declawing-your-cat-could-get-you-a-year-in-jail-in-israel/.

[40] *Id.*

[41] Schlomo Brody, Ask the Rabbi: neutering animals, THE JERUSALEM POST (May 14, 2009), http://www.jpost.com/Jewish-World/Judaism/Ask-the-Rabbi-Neutering-animals.

Environment in 2005, several municipalities in Israel have provided all or part of the funding for trap/neuter/vaccinate/release (TNR) programs for feral cats. In 2007, government officials proposed a law providing such funding throughout the country.[42] In 2013, the Agriculture Ministry launched a 4.5 million shekels program to spay and neuter 45,000 stray cats in cooperation with local authorities.[43] This number is insufficient regarding the wide population of cats in Israel, representing a serious animal welfare issue. Cat overpopulation is due in part to the massive import of cats to deal with rat infestation under the British mandate, coupled with the warm climate allowing female cats to have up to three litters a year.[44] Cat activists estimate there are up to two million stray cats in Israel.

Israel recently decided to allocate a 4.5 million shekels budget.[45] Yet the budget was allocated only to the spaying and neutering of stray dogs to avoid putting thousands down as a means to reduce dog population and the risk of diseases, leaving stray cats behind[46]. The adoption of the bill was motivated by the consideration that in the long run, it would cost less to manage the population through spaying and neutering than maintaining kennels and putting healthy animals to sleep, the cost of which is estimated to be around thirty three million shekels a year.

c. Animal Experimentation

Along with the Animal Protection Law on Cruelty to Animals, the Animal Protection Law on Animal Experiments of 5754 regulates animal experiments in Israel. The law is based on voluntary guidelines set by the Academy of Sciences and Humanities. Experimentation on animals for cosmetic and household cleaning purposes has been banned since 2007. Surprisingly, any other experiment is allowed without any review or authorization process other than that of the company itself, which does not impose any serious limitation or monitoring on the experimentation on animals. Nonetheless, as of January 1st 2013, Israel decided to stop importing and selling cosmetics and detergents tested on animals, which is a good step forward.[47]

---

[42] Feral cats in Israel, CHAI ONLINE, http://www.chai.org.il/en/companion/overpopulation_feral.htm (last visited Jan. 29, 2019).

[43] Sharon Udasin, *Israel Plans Mass Spaying Campaign to Combat Street Cat Proliferation*, The Jerusalem Post (Oct. 28, 2013), http://www.jpost.com/Enviro-Tech/Israel-plans-massspaying-campaign-to-combat-street-cat-proliferation-329973.

[44] Derek Stoffel, *Scrambling Every Day: Stray Cats Struggle to Survive in Jerusalem*, CBC News (Aug. 27, 2016), http://www.cbc.ca/news/world/jerusalem-stray-cats-1.3732282.

[45] Jonathan Lis, *In Groundbreaking Move, Israel Creates Budget to Fix Stray Dogs Rather Than Putting Them Down*, Haaretz, (Mar. 22, 2017), https://www.haaretz.com/israel-news/1.778818.

[46] *Id*.

[47] Michelle Kretzer, *Israel Bans Animal-Tested Products*, Peta (Jan. 3, 2013),

d. Wild Animals Protection and Biodiversity Conservation

Furthermore, the recognition of the need to protect Israel's exceptionally diverse biodiversity led to the enactment of laws for the protection of nature, assets, wildlife, and their habitats. Leopards, gazelle, ibex, and vultures have been declared protected species, with projects being initiated to reintroduce animal species in wildlife reserves. Although Israel has never had a whaling industry, it joined the International Whaling Commission in order to vote against any resumption of commercial whaling. The Wildlife Protection Law 5715,[48] which protects species rather than individual animals, includes welfare provisions, such as banning hunting and catching animals with traps, snares and nets, and poison, and also introduces *CITES*[49] into Israeli domestic legislation. The Law permits hunting pursuant to a license or express permit; furthermore, hunting is allowed only for scientific purposes, reproduction, maintaining balance in nature, preventing damage to agriculture, humans or animals, and to prevent infectious diseases. In other words, one cannot hunt for sport.[50]

Moreover, the National Parks, Nature Reserves, National Sites and Memorial Sites Law 5752[51] instituted national parks, which are defined as areas serving the preservation of nature among others, and nature reserves,[52] defined as "an area in which animals, vegetation, abiotic objects, soil, caves, water or landscape, which are of scientific or educational interest, are preserved from undesirable changes in their appearance, in their biological composition or their development process" to be declared by the Minister of the Interior, and established the protection of natural assets regarding their worth or danger of extinction. Notably, causing damage or bothering animals, altering the shape or natural position of animals, and interfering with animal reproduction is prohibited and punishable by six months to three years of imprisonment.

Finally, the Fisheries Ordinance of 1937 pre-State Law, consolidated in 2000, established a licensing system and minimum requirements regarding sizes and methods of fishing, some of which are forbidden. In particular, there is a strict prohibition on fishing for blind shrimp and marine turtles, both protected species.

---

http://www.peta.org/blog/israel-bans-animal-tested- products/ http://extwprlegs1.fao.org/docs/pdf/isr14268.pdf.

[48] Wildlife Protection Law, 5715-1955 (as amended) (Isr.).

[49] Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 3, 1973, 993 U.N.T.S. 243 [hereinafter CITES].

[50] *Id.*

[51] National Parks, Nature Reserves, National Sites and Memorial Site Laws, 5758-1998 (Isr.).

[52] According to the Minister of Foreign Affairs, there are more than 150 nature reserves. Israel Ministry of Foreign Affairs, https://mfa.gov.il/mfa/aboutisrael/land/pages/the%20-land%nature.aspx.

e. Further Developments and Draft Bills

In 2009, a member of Knesset, Nitzan Horowitz, introduced a bill to ban fur; however, the bill has yet to be passed although it has wide public, religious, and political support.[53] Israel could become the first country in history to forbid not only the raising of animals for fur, but also the mere selling of it.

IV. Case law on animal cruelty in Israel

Only a few cases of institutionalized animal cruelty have been brought to court. The need to protect animals was stated by the court to constitute a part of Jewish culture, with an obligation to protect every living being created on this planet.[54] The Supreme Court of Israel has long adopted a cost and benefits approach, balancing the interests of the protagonists at stake, which could reveal itself to be an incredible step towards the upholding and advancement of animal rights, if used strategically, that we will envision through the Crocodile and Foie Gras cases. Modern Israeli legislation concerning animals adopts the balancing principle, which is reflected in the case law relative to the treatment of animals.

a. The Crocodile Case

In 1997, the Jerusalem-based Court banned human fights with crocodiles on the grounds that the cost of suffering to the animal outweighed the (questionable) benefit of entertainment.[55] Alligator battles against man were was judged to be crossing the boundaries of the Animal Protection Law on Cruelty to Animals prohibition under Section 2, with the lower court determining that

> "[I]t is absolutely clear that that the performance causes the alligator physical suffering, since it involves the use of much force, pressure, pulling, dragging, and shaking. Furthermore, throughout the show, the alligator is forced into unnatural, violent, and frightening movements, which may even be harmful."

[53] Michelle Kretzer, *Are Dirty Politics Holding Up Band on Fur in Israel?,* Peta (May 5, 2015), http://www.peta.org/blog/are-dirty-politics-holding-up-ban-on-fur-in-israel/.

[54] *See, e.g.,* The Cat Welfare Soc'y of Isr. v. Mun. of Arad, [1996] HCJ. 6446/96 (Isr.).

[55] *See* Court of Civil Appeals June 22, 1997, Let the Animals Live v. Hamat Gader Rec. Enterprises, LCA 1684/96 (Isr.).

To conclude in first instance that the performance did indeed cause grave physical suffering and stress, hence finding it contrary to the provisions set out in Section 2, without the financial gain of the show being a sufficient ground for performing such behavior, reinforced by the fact that financial gain simply does not justify cruelty. Yet, the lower court's ruling was overturned by the District Court on grounds of a failure to satisfy the burden of proof relying on the petitioner, an animal defense organization Let the Animals Live.[56]

In order to interpret meaningfully the terms "torture" (*inui*), "cruelty" and "abuse," the Supreme Court turned to the criminal law definition of abuse of minors or helpless persons[57] combined with biblical references from Exodus, Deuteronomy, Genesis and Samuel regarding "torture," from Jeremiah and Isaiah to define "to treat cruelly" (lehitahzar) and from Samuel, Judges and Jeremiah to define "abuse" (hitolelut). As part of the judgment, a three-stage test was set out to determine whether an act is proscribed by law. Firstly, the act has to be such that it would be seen by a bystander as constituting either torture, cruelty, or abuse. Secondly, the extent of pain or suffering caused to the animal are appreciated widely, so there is no requisite of especially great suffering. Thirdly, the means that cause the suffering must be disproportionate to the purpose for which they are employed to constitute animal abuse.

The first judgement confirmed that, as to the third element of the test—the show's purpose—was to entertain the audience. The value at stake was not one that justified the suffering of the crocodile, meaning it was disproportionate to cause suffering to an animal for the mere purpose of entertainment, while other means that do not involve animal abuse are available. It would be ideal that such reasoning be applied in cases challenging the necessity and proportionality of causing animals to suffer for food production, following the example of the Foie Gras case.

b. The Foie Gras Case

There are an ever-increasing number of vegans among secular, as well as Conservative, Reform and Orthodox Jews that, in spite of a wide-range of considerations, all converge to the same conclusion—that exploiting animals and treating them cruelly is wrong. This, in addition to the balance of interests legal approach, provided for another major victory for animal welfare in 2003. Presented with the question "does force-feeding constitute torture, cruelty, or abuse?"[58] the Supreme

[56] *See generally* Let the Animals Live, http://www.letlive.org.il/eng/ (last visited Jan. 31, 2019).

[57] Penal Law, 5737-1977, 368(c) (Isr).

[58] The meaning of these terms was defined in the aforementioned decision.

Court ruled that the production of foie gras was illegal as it violated the provisions of the Animal Protection Law on Cruelty to Animals Section 2, when applying the test designed in the Crocodile case.

Justice E. Rivlin said:

> As for myself, there is no doubt in my heart that wild creatures, like pets, have emotions. They were endowed with a soul that experiences the emotions of joy and sorrow, happiness and grief, affection and fear. Some of them nurture special feelings towards their friend-enemy: man. Not all think so; but no one denies that these creatures also feel the pain inflicted upon them through physical harm or a violent intrusion into their bodies. Indeed, whoever wishes to may find, in the circumstances of this appeal, prima facie justification for the acts of artificial force feeding, justification whose essence is the need to retain the farmer's source of livelihood and enhance the gastronomic delight of others.... But this has a price — and the price is reducing the dignity of Man himself.[59]

The Court reasoned as follows, applying the test of animal cruelty to the production of foie gras. First, to a bystander, this process constituted torture, cruelty, or abuse. Second, it is scientifically proven that force-feeding animals causes suffering. Third, the means used are disproportionate to the purpose of enlarging the liver of the animal beyond its normal size to produce food for human consumption. Nonetheless, the Court did state that food production is a more important purpose than entertainment, thus to be appreciated with more scrutiny. Moreover, the fact that force-feeding is the only way of producing foie gras most likely strengthened the claim for its prohibition.

The Court defined this to be a case about the way that animals are raised. Taking this further, it would have ramifications for other agricultural methods used to raise animals for food consumption. This was the opportunity for the Court to specifically mention calf meat (veal), which requires the raising of the calf in a specific way so that they lack iron, thus giving the meat a pale color, as well as the forced molting of feathers from or starving hens to increase their egg production. We can assume that these will be the next targets of the Court, if appropriately presented with these issues by a coalition of animal defense organizations. The Court, indeed, acknowledged the

[59] Noah v. A.G., [2003] 9232/01 (Isr.).

shift in attitudes toward animals that finds expression in new legislation, prohibiting certain uses of animals, and directed towards bettering the conditions in which they are raised.

Even though it took time for the State to enforce the verdict, as the Court took into account the need for farmers to reorganize and foresaw the consequences of outlawing a practice from one day to the other, by providing the industry with a transitional period to adapt to the ruling, the Supreme Court ordered the State to do so again in 2006, and the ban came into force from then onward. According to the theory of relative invalidity, the court could modulate the consequences of the annulment by deciding the time of its entry into force, as its effects can either be retroactive, immediate, or prospective.

Before the ban, some limitations applied to force-feeding through the Cruelty to Animals regulations on geese force-feeding of 2001,[60] that included freezing the industry, i.e. prohibiting opening new establishments or expanding existing ones. Since 2013, it is against the law to import and sell foie gras in the State of Israel,[61] as its production methods amount to animal cruelty. This is a major step in acknowledging and working towards minimizing and ending animal suffering, as Israel was one of the major foie gras producers and exporters in the world.

V. Further Welfare Concerns in Judaism and in the State of Israel

Sadly, there is still no ban on confining hens in battery cages in Israel, nor of dehorning without anesthesia. The main problem lies with abuses taking place in slaughterhouses, the shipments of live animals to be slaughtered, coupled with the suffering inherent in the ritual slaughter under *kashrut*[62] and religious sacrifice customs.

[60] *Cruelty to Animals Regulations (Animal Protection) (Geese Force-Feeding)*, Animal Law (2001), https://www.animallaw.info/sites/default/files/stisreal_geese_force_feeding.pdf.

[61] *Preliminary Approval: The import and sale of foie-gras will be forbidden*, Knesset (July 10, 2013), https://www.knesset.gov.il/spokesman/eng/PR_eng.asp?PRID=10824.

[62] The kashrut is the system of dietary rules, a mitzvah to be fulfilled by Jewish people. for example, land animals must have cloven hooves and chew their cudd; fish must have fins and scales, amongst others. also, it requires the separation of meat from milk.

a. Animal Sacrifice

Yom Kippur is the day of atonement in Judaism and considered the holiest day when Jews fast, pray, and repent.[63] On this day an old and controversial custom takes place, the kaparot. During this, one swings a chicken over one's head as a sign of penance to transfer Man's sins to the animal, that is then slaughtered and traditionally given to charity. It has been opposed by Sages for centuries and has begun receiving particular consideration recently.[64]

Karparot is only practiced in traditional communities, yet can still understandably be regarded as animal cruelty by some. Some people seem to be more outraged by the killing of animals for religious purposes, which occur once a year in much smaller numbers, than they are by the huge number of animals killed in slaughterhouses for food every day. All acts of killing the animals should be judged on the same level when it comes to assessing their "necessity," and it is unjustified to assert that it is "more" necessary to kill animals for food than for religious observance; everyone is free to replace the animals in both situations.

Israel's Ministry of Agriculture launched a powerful campaign last year, before Yom Kippur, to leave the chickens alone by encouraging people not to perform kaparot with the slaughter, but only by donating money to the poor on this holiest day of the year, using a cartoon video featuring a chicken fighting for its release.[65] Three cities in Israel have already banned the performance of kaparot in public places: Tel-Aviv, Petah Tikva and Rishon Letzion.[66]

---

[63] *See* Rabbi Dr. Reuven Hammer, *Kapparot, Swinging a Chicken Over One's Head,*http://www.myjewishlearning.com/article/kaparot/; *The Kaparot Ceremony*, http://www.chabad.org/holidays/JewishNewYear/template_cdo/aid/989585/jewish/Kaparot.htm.

[64] *Israel's ultra-Orthodox Rethink Yom Kippur Animal Sacrifice,* Haaretz (October 7th, 2011), http://www.haaretz.com/jewish/israel-s-ultra-orthodox-rethink-yom-kippur-animal-sacrifice-1.388636.

[65] Sharon Udasin,*Agriculture Ministry Introduces Campaign Against Kaparot Ritual*, The Jerusalem Post (October 1st, 2016), http://www.jpost.com/Business-and-Innovation/Environment/Agriculture-Ministry-introduces-campaignagainst-kaparot-ritual-469249 ("For centuries, the custom of kapparot has been part of our tradition on Yom Kippur," said Agriculture Minister Uri Ariel. "In recent years, we have been putting in an effort to encourage the public to continue this important custom, yet not through chickens that are transported to slaughter, but instead by donating money. It is right two times—once from the standpoint of preventing cruelty to animals, and again by giving tzedaka to those in need."). *See also* https://youtu.be/KkJoeIM6yXo (cartoon video featuring a chicken fighting for its release).

[66] Haim Lev, *More Towns Ban Kaparot in Public Places ,* Arutz Sheva, (Oct. 10, 2016), http://www.israelnationalnews.com/News/News.aspx/218846.

b. Animal Slaughter

In spite of Jewish law stipulating that animals may be eaten, provided they are humanely slaughtered, ritual slaughtering remains painful even though Jewish authorities determined shehita, the religious regulations that proscribe the killing of an animal by cutting its throat using a sharpened knife, as being the least painful method of slaughter. In 2000, the Rabbinical Committee on Jewish Law banned the "shackling and hoisting" method of slaughtering, where the conscious animal is pulled into the air by a chain before having its throat cut, because this method violates the Jewish laws forbidding the causing of unnecessary suffering to animals. Notably, shehita was discussed in a book from the 13th century anonymously published in Spain, known as Sefer haChinnukh, and considered to be designed for minimizing animal suffering.

Israel's Ministry of Agriculture went one step further by banning the import of meat in cases where the animals were considered to be slaughtered inhumanely, from June 1st, 2018.[67] This ban relates primarily to produce that comes from South American slaughterhouses. After investigations were aired on television, two slaughterhouses were shut down amid increasing scandals over meat production, factory-farming and ritual slaughter in Israel, in conjunction with concern for animal conditions during live shipment.[68]

One report showed workers at the Deir al-Assad kosher meat factory in northern Israel, the largest in the country, beating the animals in an effort to hurry them toward slaughter. The men were seen to be kicking and hitting the cattle with sticks, dragging them across the floor by their legs, and repeatedly hitting them with a metal gate to push them forward. The workers were fired; however, instead of condemning the system itself, the reason given was that the workers acted against the policies of the company. It is for this reason that amendments that target those with most responsibility in companies is essential. It is very easy to fire the workers every time a scandal goes viral; however, it would be far more beneficial to improve the practices and punish those who are aware of the abuse and who overlook it in favor of profit. One month later, another television report showed workers at Soglowek facility in Shlomi bashing and kicking chickens, dunking the birds into trash cans

[67] Yaakov Schwartz, *As Israel bans "schackle and hoist" slaughter, activists ask: What about the US?*, , The Times of Israel (May 23rd, 2017), http://www.timesofisrael.com/as-israelbans-shackle-and-hoist-slaughter-activists-ask-what-about-the-us/.

[68] *Slaughterhouse ordered offline amid TV cattle abuse scandal*, The Times of Israel (June 10th, 2015), http://www.timesofisrael.com/slaughterhouse-ordered-offline-amid-tv-cattle-abuse-scandal/.

while still alive, and using them as makeshift weapons in fights. The slaughterhouse was then shut down.[69]

"Is meat even kosher?" some asked, considering current animal suffering to conflict with the principles of animal compassion in Judaism.[70] David Rosen, former Senior Rabbi of the largest Orthodox Jewish congregation in South Africa and Chief Rabbi of Ireland, currently American Jewish Committees International Director of Interreligious Affairs in Jerusalem, makes the powerful argument that kashrut "involves more than the way an animal's throat is cut and the checking of vital organs"; rather, "it involves the whole relationship between humans and the animal world.[71] "Indeed the mitzvot were only given in order to refine people."[72] Thus, Rosen asks: "If at point Z the animal's throat was cut the right way and its internal organs checked, but from A to Y all injunctions and prohibitions have been ignored and desecrated, how can that product really be called kosher?"[73]

c. Live Shipments

Another negative point of animal welfare in Israel is the transport, including, specifically, the import of a large number of animals in live shipments from European countries and Australia, which often entails horrible and long journeys in terrible conditions for the animals.[74] Hence, protestors have gathered in the streets of Tel-Aviv and Jerusalem to denounce their suffering,[75] supported by organizations such as Israel Against Live Shipments.[76] A petition was launched three years ago to end the live shipments to the city of Eilat.[77]

---

[69] Rabbi David Rosen, *Second slaughterhouse shuttered over animal cruelty*, The Times of Israel (July 7, 2015), http://www.timesofisrael.com/second-slaughterhouse-shuttered-over-animal-cruelty/.

[70] Rabbi David Rosen, *Is any meat today kosher?*, The Times of Israel (March 16, 2017), http://blogs.timesofisrael.com/is-any-meat-today-kosher/.

[71] *Id.*

[72] *Id.*

[73] *Id.*

[74] Sue Surkes, *Stop shipments of live animals to Israel for slaughter, protesters urge court*, The Times of Israel (Jan. 31, 2017), http://www.timesofisrael.com/stop-shipments-of-live-animals-to-israel-for-slaughter-protesters-urgecourt/.

[75] *Id.*

[76] *See*, Israel Against Live Shipments, Facebook, https://www.facebook.com/IsraelAgainstLiveShipments/ (last visited Jan. 21, 2019).

[77] *See, Israel Against Live Shipments*, *Petition: End all live shipments to Eilat, our tourist city in Israel*, https://www.change.org/p/uzi-landau-end-all-live-shipments-to-eilat-our-tourist-city-in-israel-stop-theunbearable-stench-from-maggots-feces-and-rotting-animal-bodies (last visited Jan. 19, 2019).

To this regard, Member of Knesset Zandberg submitted a bill to stop such shipments.[78] Efforts are also being sought at international levels through international treaties.[79] Additionally, judges recently discussed a petition presented to the court by animal rights groups, Anonymous for the Animals and Let the Animals Live, asking that the shipments of live animals to Israel for slaughter be stopped.[80] Judges concluded that neither the market, consumer demand, nor costs allowed for banning the import of live animals altogether, pending an update from the government on the implementation of policies to reduce the suffering of animals during transport.[81]

To minimize the suffering of animals imported for slaughter, MK Eitan Broshi from the Zionist Union will soon submit a bill to restrict live cattle shipments to Israel, with the goal of enabling journeys by ship of six days or less and ensuring that air transport cannot exceed 6 hours.[82] However, animal defense organizations argue the bill is both inefficient and ineffective, and instead call for a total ban on live shipments. More than thirty percent of animals arriving in Israel are imported from Australia, a large supplier of cattle to the Israeli market and the world's biggest live animal exporter. The rest of Israeli animal imports come mainly from Eastern Europe and Portugal. Australia demands fair and humane treatment of the animals even after they have left its territory. After becoming aware of the footage of abused animals, Australian officials demanded an investigation by the Israeli Agriculture Ministry. Australian veterinarian, Lynn Simpson, who served as the official on-board vet for 57 live export journeys, including some to Israel, published a report describing animals in cramped conditions, passing the journey covered in their own excrement, calves cooking from the inside in the boiling temperatures of the Red Sea, and animal corpses being tossed into the ocean.[83]

---

[78] *Press Release: Economic Affairs Committee Chairman on live animal shipments: "Treatment must change immediately"*, Knesset.gov.il (July 25, 2016), https://main.knesset.gov.il/EN/News/PressReleases/Pages/Pr12185_pg.aspx.

[79] *Id*.

[80] Sue Surkes, *Court orders reduced suffering in animal shipment*, The Times of Israel (Feb. 3, 2017).

http://www.timesofisrael.com/court-orders-government-to-reduce-suffering-on-animal-shipments/.

[81] *Id.*

[82] *Legislation to Restrict Live Cattle Imports Underway*,The Cattle Site (Jun. 8, 2017), http://www.thecattlesite.com/news/51543/legislation-to-restrict-live-cattle-imports-underway/.

[83] https://www.rspca.org.au/uploads/ASEL-Submission-Dr-Lynn-Simpson_web.pdf.

VI. The Future of Religious and Legal Consideration of Animals: Veganism?

From the vegetarian diet at the time of the creation, to medieval scholars such as Joseph Albo and Isaac Arama, who regarded vegetarianism as a moral ideal, a school of thought has emerged in Judaism. This school of thought, incarnated in the modern era by such figures as Richard H. Schwartz, author of Judaism and Vegetarianism,[84] states that God's original plan is for mankind to be vegetarian, as stated in *Genesis 1:29*. Some also assert that the prophet Isaiah was vegetarian, while Daniel, Shadrach, Meshach, and Abednego were vegan. According to passages from the Bible, those partaking in a vegan diet were in better health than those eating a non-vegan diet.[85] Several prominent rabbis such as Abraham Isaac Kook and his disciple, Rabbi David Cohen, editor of A Vision of Vegetarianism and Peace, also advocated a vegetarian lifestyle.[86]

Indeed, arguments for a vegan diet can be found in both tzaar ba'alei chayim and bal tashchit principles as, on the one side, it spares animal suffering, and on the other side, it is the least wasteful compared to other diets. It is worth mentioning another fundamental principle, venishmartem meod lenafshoteichem, maintaining oneself in good health. This principle leads to the promotion of a vegan diet, as animal products are regarded to be, as science increasingly supports, detrimental to human health.[87] It has even been said that the complexity of the kashrut was meant to discourage the eating of meat.

As a matter of fact, it seems doubtful that the Torah would sanction factory farming, as this method of raising animals treats them as machines, as underlined by Rabbi Aryeh Carmell, and not as living, sentient beings created by God. For this reason, conservative Judaism among others, advises people to not buy products from factory-farms, as they do not respect animals' capacity to experience enjoyment or suffering, and thus deprive animals of their natural life. It follows that adopting a vegan way of life is a valid personal and religious choice as veganism is consistent with the teachings and ideals of Judaism, while mass production and consumption of animal products contradict many

---

[84] Richard H. Schwartz, Judasim and Vegetarianism (Lantern Books 2001), https://www.jewishveg.org/JudaismAndVegetarianism/JudaismandVegetarianism2001.pdf.

[85] *Daniel* 1:8-16.

[86] Rav Avraham Yitzhak Hacohen Kook, A Vision of Vegetarianism and Peace, (Rabbi David Cohen ed., Jonathan Rubenstein trans.,1961).https://www.jewishveg.org/AVisionofVegetarianismandPeace.pdf.

[87] Ian Sample, *Diets high in meat, eggs and dairy could be as harmful to health as smoking*, The Guardian (Mar. 5, 2014), https://www.theguardian.com/science/2014/mar/04/animal-protein-diets-smoking-meat-eggs-dairy.

Jewish values. Indeed, religion plays a prominent role in Israeli life, Jewish dietary laws and how they relate to animals, and the way they are killed in factories does not align with the Torah.

Even the Israeli army now acknowledges this ethical lifestyle and provides for vegan meals and clothes due to the growing number of vegans in the Israeli population.[88] Surveys generally estimate that around 13% of Israelis are vegetarians or vegans as of the current data available from 2015,[89] with more than 400 food establishments certified vegan friendly in Tel-Aviv, including Domino's Pizza, the first in the global chain to sell vegan pizza topped with non-dairy cheese.[90] Israel is home to the largest percentage of vegans per capita in the world and renewed surveys would definitely witness an even higher percentage.[91]

Last but not least, Israel is host to the on-going, and indeed promising, research on cultured meat, the future of humane meat, as a means to replace the necessity, if any, of mistreating, exploiting and killing animals. Cultured meat entails the growing of animal cells separate from any living being, with the aim of getting rid of the need to raise and kill animals for food anymore, thus avoiding the causing of suffering. In addition to this, it has powerful and crucial environmental implications, and the potential for fighting world hunger. The Modern Agriculture Foundation (MAF) is the first company in the world to research mass production of cultured chicken breast deriving from a single cell of a real bird.[92] What if fairly priced cultured meat could satisfy the world's growing demand for meat while eliminating the ethical and environmental problems of raising animals for food? Would we have an ethical problem getting rid of this ethical problem? MAF cofounder, Shir Friedman, argues that everybody becoming vegan would be what the world needs, but this is not realistic; hence when they heard about cultured meat, they " realized this is a way to reduce harm to animals and the environment while giving people the meat they want to eat."[93] Rabbinic authorities consulted by MAF moreover believe cultured chicken will be inherently kosher.

---

[88] Jessica Steinberg, *IDF adopts new, vegan-friendly menu,*The Times of Israel (Feb. 1, 2015) http://www.timesofisrael.com/idf-adopts-new-vegan-friendly-menu/; JNi.Media, *Cutting Edge Army: IDF issues Vegan combat rations, shoes, berets*,The Jewish Press (May 31, 2016) http://www.jewishpress.com/news/breaking-news/cutting-edge-army-idf-issues-vegan-combat-rationsshoes-berets/2016/05/31/.

[89] *Vegetarianism by country*, Wikipedia, https://en.wikipedia.org/wiki/Vegetarianism_by_country#Israel.

[90] Tova Cohen, *In the land of milk and honey, Israelis turn vegan*, Reuters (July 21, 2005, 3:31 PM), https://www.reuters.com/article/us-israel-food-vegan-idUSKCN0PV1H020150721.

[91] *Id.*

[92] *See*, The Modern Agriculture Foundation, https://www.futuremeat.org.

[93] Abigail Klein Leichman, *Coming soon: chicken meat without slaughter*, Israel 21c (Nov. 19, 2015, 7:00 AM), https://www.israel21c.org/coming-soon-chicken-meat-without-slaughter.

VII. Conclusion on the Current Protection of Animals in Israel

Animals are still considered to be property in Israel, as everywhere in the world. The law is well implemented when it comes to individuals abusing animals, yet industries at the root of cruelty that make a profit from the abusive exploitation of animals still remain unpunished and out of reach, for there are currently no means for animal protection organizations to introduce actions on behalf of animals exploited by industries. Indeed, the food industry seems to be the major obstacle blocking the improvement of animal welfare and animal rights in Israel—a case where it is still largely agreed and accepted that human economic and social interests in animal products, mainly food, are legitimate, despite being challenged on a more regular basis as more and more people become vegan. In consideration of these shortcomings, a commission was created to ensure welfare requirements at all stages of animals' lives that are raised for food according to Jewish ethical values, beyond the time of their slaughter deemed to be the most humane. The Heksher Tzedek Commission hence created the Magen Tzedek Seal, visible on kosher products that meet the Commission's standards, the world's first certification of the kind, to ensure the avoidance of gratuitous animal suffering before and during slaughter.

The strongest basis for animal welfare is found in Jewish law, with the Jewish principle of *tzaar ba'alei chayim*, which means the suffering of living creatures forbidding unjustified cruelty, or causing unnecessary pain to animals as a biblical mandate commonly accepted by the *Talmud*.[94] *Kashrut*, at the very least, requires the humane slaughter of the animal. A further step ahead has been taken in this regard with the Ministry of Agriculture ordering the equipment and monitoring of slaughterhouses with 24/7 video cameras amid scandals,[95] a year before France just decided to do so and only as an experimental provisory measure.[96] Could the gap between animal welfare (implementation of animal welfare basic Jewish principles) and animal rights (putting an end to the slaughtering at all) be closed by to a cautious, selective and animal-friendly interpretation of Jewish Laws that, historically, have put

[94] Babylonian Talmud, *Baba Metzia* 32b. (The Talmud is the central text of Judaism).

[95] Michelle Kretzer, *Israel Orders Slaughterhouses to Install Cameras*, Peta (Jan. 12, 2016), https://www.peta.org/blog/israel-orders-slaughterhouses-to-install-cameras/.

[96] Alexa Erickson, *France Passes Historic Bill Requiring All Slaughterhouses to Be Equipped With Cameras*, Collective Evolution (Jan. 16, 2017), https://www.collective-evolution.com/2017/01/16/france-passes-historic-bill-requiring-all-slaughterhouses-to-be-equipped-with-cameras/.

human interests first, by trumping the speciesism that has been inherent to most religious interpretations? A bridge could be under construction under the lead of vegan Orthodox, Conservative and Reform rabbis, hand in hand with secular views and democratic activism, for non-human animal's interests to override human greed, as nothing ever seems impossible even in the land of milk and honey.

By drawing a comparison with Man's dignity himself, in infringement of nonhuman animals' dignity, the Supreme Court of Israel might have found the way to animals' fundamental right: the dignity of a living creature of God. A nation that made human dignity the Basic Law on which the State is founded provides hope for favorable interpretations of the law on the ground of a potential extension of the concept of dignity to all sentient beings. Last but not least, it is believed that with the arrival of the Messiah, humanity will go back to being vegetarian.[97]

[97] *Isaiah 11:9.*

The De-Objectification of Animals in the Spanish Civil Code[1]

Marita Giménez-Candela

I. Introduction

As I have already covered on previous occasions,[2] the movement to de-objectify animals is a reality that has begun with the Civil Code in most countries. As part of this movement, a modification to the legal status of animals in the Spanish Civil Code has been proposed and has since been unanimously approved by the Congress of Deputies on 14 February 2017.[3]

This proposal (a transactional amendment to the non-legal proposal on the modification of the companion animal legal framework in the Civil Code of the "Grupo Parlamentario Ciudadanos," Expedient no. 162/000200) urged the Government to:

1. "Promote the legal reforms necessary for creating a special category in the Civil Code referring to animals, different from those planned, where they are defined as sentient beings endowed with sensibility;"

2. "Plan the necessary legal reforms to ensure that companion animals cannot be considered as seizable objects in any legal procedure."[4]

---

[1] This work forms part of the MINECO investigation Project DER2015-69314-P «Legal status of animals: origin, development and policies» (2015-2019), which the IP belongs to the author, and which forms part of other national and international investigations. Between them, the authors of the included work as a thematic dossier in this number of the dA Derecho Animal (Forum of Animal Law Studies) 9/3 (2018), Nuria Ménéndez de Llano, https://doi.org/10.5565/rev/da.343 and Loïs Lelanchon, https://doi.org/10.5565/rev/da.344.

[2] Teresa Giménez-Candela, *The De-Objectification of Animals (I)*, 8 Derecho Animal, no. 2, 2017, https://doi.org/10.5565/rev/da.318; Teresa Gimenez-Candela, *The De-Objectification of Animals (II)*, 8 Derecho Animal, no. 3, 2017, https://doi.org/10.5565/rev/da.250; Teresa Gimenez-Candela, *Dignity, Sentience, Personality: the Legal Relationship between Animals and Humans*, 9 Derecho Animal, no. 2,2018), https://doi.org/10.5565/rev/da.346; Oliver Le Bot, *El Derecho Animal: Ayer, Hoy y Mañana*, Derecho Animal, 8/2 (2017), https://doi.org/10.5565/rev/da.16 [Spain].

[3] *See* Giménez-Candela, Es Alguien, no Algo, in dA 9/1 (2018) 5ss. https://doi.org/10.5565/rev/da.251.

[4] Official Bulletin of the General Courts. Congress of Deputies, Series D, Number 108), 22 February 2017, Pages 6 & 7, http://www.congreso.es/public_oficiales/L12/CONG/BOCG/D/BOCG-12-D- 108.PDF#page=6.

In this sense, the first and foremost reflection that it offers—as a question that frames the corresponding adaptation of the Civil Code article that has been proposed—deals with the need not only to modify the relevant aspects of the Civil Codes relating to the property and possession of animals, but also of considering, in its totality, the proposal approved in Parliament that refers to "the creation of a special category in the Civil Code different from those planned, where they are defined as living beings endowed with sensibility,"[5] which is a linguistic phrase used in the recent Civil Code reforms of France and Portugal to translate the expression "seres sensibles."[6] It does not properly reflect the expression "sentient beings," whose equivalent in Castilian would be "seres sintientes" or "sentientes"—an expression that is neither, however, accepted by the Royal Spanish Academy Dictionary, despite the fact that its use is becoming more and more widespread, nor accepted when applied to animals, although it has been used in Castilian when referring to the capacity of humans to feel.[7]

It is shocking that the key terms "sentience" or "sentient beings"—instruments for understanding the movement of renovating the European Civil Codes in recent years—have still not been integrated into our technical legal language when speaking about animals.[8] For animal welfare science—the place from where the term is derived—the term "sentience," as in the term "sentient beings," refers to the capacity of animals to feel not only pain, but also suffering and positive emotions. This scientific claim, which has inexorably continued to open the way, includes all vertebrate animals, as well as cephalopods.[9]

---

[5] *Cf*. Meeting minutes of the Congress of Deputies, plenary session and permanent council, 2017, Nº 29, XII Legislature, plenary session Nº 27, Tuesday, 14 February 2017, pages 43-50. http://www.congreso.es/public_oficiales/L12/CONG/DS/PL/DSCD-12-PL-29.PDF; *see* CODINA, J.I., *Unanimidad en el Congreso de los Diputados para Instar la Reforma del Código Civil Español y Reconocer a Los Animales Como Seres Dotados de Sensibilidad*, Derecho Animal, 14 Feb. 2017, https://derechoanimal.info/es/actividades/2017/unanimidad-en-el-congreso-de-los-diputados-para- instar-la-reforma-del-codigo-civil.

[6] *See infra* Sections II.1, II.2.

[7] Cf. X. Zubiri, *Inteligencia Sentiente: Inteligencia y Realidad* (Madrid 1980), that the trilogy uses the term "sentient" to refer to the theory of knowledge applied to the human being, as a theory of intelligence that is not just rational—according to the traditional understanding—but as knowledge that requires the senses to be able to complete the act of knowing. *See* F. Guell y J.I. Murillo, Leonardo Polo and Xavier Zubiri, Fenomenología, Realismo y Filosofía Transcendental, in Studia Poliana 17 (2015) 5ss.

[8] Cf. Giménez-Candela, El Estatuto Jurídico de los Animales: Aspectos Comparados, in BALTASAR, B. (Coord.) El Derecho de los Animales (Madrid 2015) 167ss.

[9] Vid. Point (8) of Directive 2010/63/UE of the European Parliament and of the Council of 22 September 2010 on the protection of animals used for scientific purposes: "In addition to vertebrate animals including cyclostomes, cephalopods

It should not come as a surprise that in 2010 the Directive 2010/63/EU of the European Parliament and Council, of 22nd September 2010, on the protection of animals used for scientific purposes, did not expressly include cetaceans, as it is only recently that not only scientific, but also legal and jurisprudential support, has begun to include them within the concept of sentient beings, as has been the case in recent Swiss legislation[10] and Italian jurisprudence.[11]

The scientific advancement on the topic of animal sentience is a primary motivator for the changes that the Law has experienced in the last decades, no matter how much the resistance to officially accepting the terms sentience / sentient beings excludes them from the proposal of changing the legal status of animals in the Spanish Civil Code and uses, instead, the phrase "living beings endowed with sensibility." Overall, this circumlocution—showing affirmative character—is preferable to the negative expression ("not things," "nicht Sachen"), with which the movement of de-objectifying animals began in Europe in the 1980's, particularly in the Civil Codes of Austria, Switzerland, and Germany.[12]

However, these expressions have been used already in Latin-American legislative texts relating to animal protection. I am referring particularly to the Constitution of Mexico City (art. 13,B,1)[13] and to the Law of Rights and Protection of Animals in the State of Michoacan of Ocampo (art. 2),[14] also in Mexico, and approved recently in April 2018.

---

should also be included in the scope of this Directive, as there is scientific evidence of their ability to experience pain, suffering, distress and lasting harm," https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010L0063&from=EN.

[10] Switzerland has recognized crustaceans as sentient beings in the Ordinance that prohibits the boiling alive of lobsters and exhibiting them alive in buckets of ice in fisheries or catering establishments. In its reunion on 10 January 2018, the Swiss Federal Council decided to adapt the veterinary ordinances in this sense. In particular, it tries to improve the way in which it treats animals. The primary texts are the Ordinance on animal protection (OPAn) and the Ordinance on the slaughter of animals and the control of meat (OabCV). The modifications came into power on 1 March 2018. Order on the protection of animals (OPAn) amendment of the 10 January 2018, Swiss Confederation, RO 2018, pp. 573-626, accessible at: https://www.admin.ch/opc/fr/official-compilation/2018/573.pdf (link accessed 13/07/2018).

[11] *See* Carla Campanaro, Crustaceans as Sentient Beings and their Mistreatment. Sentence n. 30177/2017 of the Third Criminal Section of Italian Supreme Court, 8 Derecho Animal 3 (2017).

[12] *Cf*. Teresa Giménez-Candela, An Overview of Spanish Animal Law, in FAVRE, D. & GIMÉNEZ-CANDELA, *Animals & the Law* 221; also, n.1, 2 and 7 (Tirant Lo Blanch 2015).

[13] The Constitution of Mexico City, in Article 13, which refers to the Habitable City, part B, suggests the following: B. Protection of Animals 1. "This Constitution recognizes animals as sentient beings and, for this reason, they must receive the respective treatment" (http://www.cdmx.gob.mx/constitucion).

[14] Law of rights and protection for non-human animals in the State of Michoacán, passed on 2 April 2018, Art. 2: "With this law, the State recognizes that

It is not only a question of linguistics, as, in my opinion, it goes further. Regarding this proposal, it is interesting to observe that Consideration (9) of the cited Directive includes fetuses of mammals,[15] since there exists "scientific evidence that these forms, in the last third of their development period, have a greater risk of experiencing pain, suffering and distress, which can negatively affect later development…." The observation regarding the negative impact of the suffering (the regulations repeat the triad: "pain, suffering and distress"), that the fetuses of mammals can have in later development, is offered as an undeniable scientific outcome, in which the fetus is considered a being separate from the mother (revealing the inconsistency that persists when animal offspring are treated as an indelible extension of the property of the "productive thing" (that is to say, the mother)), in those Civil Code articles referring to the products,[16] whose modification and adaptation to the principle that animals are sentient beings and not mere things, denominated by the doctrine "anticipated moveable things,"[17] is absolutely essential and, of course, figures in the modification proposal.

One of the traditional obstacles to considering animals as sentient beings and not mere things in property, resulting from the anthropocentric conception of the Law, comes from a reluctance to attribute to them not only the capacity for a physical reaction toward stimuli (which appears to have been widely demonstrated by the scientific community), but intellectual and cognitive capabilities also.[18] Thus, the use of the term intelligence when referring to animals is only used figuratively, and there are few authors that refer to animal intelligence in the typical sense. In 1882, a contemporary (as well as co-worker and friend) of Darwin published a book that in both title and content made reference

non-human animals are sentient beings that feel different physical and emotional sensations, for which reason the present law recognizes them as objects of guardianship, imposing the obligation on physical or legal entities to ensure their protection, respect and wellbeing, according to the ethical principles contained in this Law, their Regulation and other applicable provisions,"; The legislative text of Art. 3.1 defines what it is to be a non-human animal by the following: "Non-human Animal: sentient being, endowed with a central nervous system that enables it to feel various physical and emotional sensations."

[15] Directive 2010/63, of the European Parliament and of the Council of 22 September 2010 on the Protection of Animals Used for Scientific Purposes.

[16] Civil Code. art. 355 ss. https://www.boe.es/buscar/act.php?id=BOE-A-1889-4763.

[17] *But see* Carlos Rogel Vide, Los Animales en el Código Civil 37-39 (Reus 2017); *See also* Carlos Rogel Vide, *Personas, Animales y Derechos* (Reus 2018); *See also* Maofang Hui, *La Modificación de los Códigos Civiles Clásicos para Elevar el Status de los Animales: El Caso de España*, 6 (Reus 2018).

[18] *Cf*. David S. Favre, Respecting Animals: A Balanced Approach to Our Relationship with Pets, Food, and Wildlife 21 (Prometheus Books 2018).

to the intelligence of animals.[19] This reference, although having no significant impact at the time, was later brought up and affirmed by other authors[20] and has ultimately been the main outcome of the Cambridge Declaration of 2012 on the cognitive capacities of animals.[21] It has had a great scientific impact and is gradually being incorporated in legal texts.

Consequently, the object of the proposal sent to the Government by the Parliament, which was conducted in the Legal Proposal for the Modification of the Civil Code, Mortgage Law and Civil Procedure Rules,[22] is the creation of a legal regime unique to animals that clearly separates and distinguishes them from the consideration of "things." The proposal establishes a differentiated category existing between inert things and human beings as holders of subjective rights, integrally protected by the legal system.

This differentiated category can be none other than that of animals, a category *a se* or a category *sui generis*.[23] In other terms, these reflections, along the lines of the legal proposal approved by Parliament, stand first and foremost for the creation of a category proper to animals whereby the traditional, roman, bipartite classification of persons and things, with which I have dealt on many occasions,[24] would become a

---

[19] George J.Romanes, Animal Intelligence (London 1882).

[20] G. Chapouthier, *Animal Intelligence to Animal Rights*, *in* Animals & the Law 147, 150 (Valencia 2015). *See also* J. Vauclair, *L'intelligence de L'animal* (Paris 1995, reimp 2017).; Poudeybat, E., L'intelligence Animale (Paris 2017).

[21] The Cambridge Declaration on Consciousness, Published 7 July 2012, Signed by a group of eminent neuroscientists (Philip Low, Jaak Panksepp, Diana Reiss, David Edelman, Bruno Van Swinderen, Christof Koch), proposes, in its final paragraph: "The absence of a neocortex does not appear to preclude an organism from experiencing affective states. Convergent evidence indicates that non-human animals have the neuroanatomical, neurochemical, and neurophysiological substrates of conscious states along with the capacity to exhibit intentional behaviors. Consequently, the weight of evidence indicates that humans are not unique in possessing the neurological substrates that generate consciousness. Nonhuman animals, including all mammals and birds, and many other creatures, including octopuses, also possess these neurological substrates." *The Francis Crick Memorial Conference, Cambridge Declaration on Consciousness* (July 7, 2012) http://fcmconference.org/img/FrancisCrickMemorialConferenceInformation.pdf.

[22] The proposal by law for the modification of the Civil Code, the Mortgage Law and the Rules of Civil Procedure was presented by the Popular Parliamentary Group, on 13 October 2017, and was unanimously approved, Proposición de Ley de Modificación del Código Civil, la Ley Hipotecaria y la Ley de Enjuiciamiento Civil, Sobre el régimen jurídico de los animales. (B.O.E. 2017, 167-1) (Spain) http://www.congreso.es/public_oficiales/L12/CONG/BOCG/B/BOCG-12- B-167-1.PDF#page=1.

[23] The origin of this proposal can be found in the study of Roman sources (legal and literary documents about animals with which I have often dealt in other works (see n. 1, 2, 7) and is conducted in an article for review

[24] In comprehensive form, T. Giménez-Candela, Le Statut de L'animal

tri-partition. This change of category is much more coherent with societal changes, the law, and European legislation in relation to the consideration of animals as beings, which cannot continue to be entrenched by the legal status of things that, these days, do not correspond adequately. This tri-partition would therefore include persons, things, and animals.

The historic law,[25] particularly Roman Law, which constitutes the foundation and roots of the legal conception of animals as things in property, offers a surprise for any convinced of the decisive, and erroneous, affirmation that slaves and things included animals as things of the same standing. Instead, evidence shows that the relevant legal sources did not in fact treat slaves and animals the same,[26] except in procedure relating to the assumption of noxal responsibility.[27]

II. The De-Objectification of Animals in the European Civil Codes

However, the recent modifying experiences of the legal status of animals in the Civil Codes of France and Portugal produce various answers in relation to the structural question considered here. We will consider them separately:

a. France[28]

On 10th May 2005, Mme. Suzanne Antoine, *Présidente de Chambre honoraire à la Cour d'Appel de Paris et trésorière de la Ligue Française des Droits de l'Animal*, broadcasted a report requesting M. le Garde des Sceaux to consult the web of the *Ministère de la Justice de Francia* (the French Ministry of Justice).[29]

---

de Compagnie: Législation Espagnole Comparée, in La Personnalité Juridique de L'animal (I): L'animal de Compagnie, (March 20, 2018), https://calenda.org/437880.

[25] Cfr. Thomas G. Kelch, *A Short History of (Mostly) Western Animal Law: Part I*, *in* Animal Law 24 (2012); Thomas G. Kelch, *A Short History Of (Mostly) Western Animal Law: Part II*, *in* Animal Law 348 (2013); E. Alonso Garcia, & A. Recarte Vicente-Arche, *La Diversidad de Fundamentos de las Distintas Normas que Constituyen el Derecho Animal (I)*, JAL & IAWS (2017) at 17.

[26] Complete reference to the related sources is given in T. Giménez-Candela, Derecho Privado Romano (Valencia reprint. 2011) and also in previously cited works, Vid. supra: n. 1, 2, 7, 22.

[27] Teresa Giménez-Candela, El Régimen Pretorio Subsidiario de la Acción Noxal (1981).

[28] Cf. Loïs Lelanchon, *La Reforma del Estatuto Jurídico Civil de los Animales en el Derecho Francés*, (2018) https://doi.org/10.5565/rev/da.344 (in this dossier a detailed revision of the legal status of animals in the Civil Code of France).

[29] Suzanne Antoine, *Rapport sur le régime juridique de L'animal*, http://www.ladocumentationfrancaise.fr/var/storage/rapports-publics/054000297.pdf.

In this report, Mme. Antoine suggested to the legislature the creation of a third category of goods that would be animals, positioned between those of moveable and immoveable.[30] The justification made by the "Antoine Report" (which from being based on reliable data on current concerns for animals that had been removed from enquiry by legal operators, distinguished members of animal protection associations, and comparative law had an impressive receipt) was based on the following reasoning: animals are living beings endowed with sensibility, which [as Phillippe Reigné observed in his time])[31] could also be claimed for human beings, but the difference with human beings being that, although animals are protected from acts of cruelty and mistreatment through the dispositions of Criminal Code, they continue to be considered as things of unlimited use, ownable, and whose value is measured by the material value of the market.

This idea—rigorously demonstrated by the "Antoine Report"—directly and openly conflicts with the affective value that French society attributes to animals (and especially companion animals) in terms of the respect afforded to animals as part of nature, which constitutes a character unique to French culture; refined, without any doubt for the writings of the representatives of the Enlightenment in the CXVIII, who have so greatly contributed to the change in man's perception as a citizen central to decisions made about our post-revolutionary world.[32] It is well known that animals have not been exempt from this profound transformation; it is, however, advisable that the philosophical considerations do not transcend the entire legal realm. Evidence for this, without further remission, is the Napoleonic Code, which loyally follows the criteria of the Roman inclusion of animals (and of slaves) under the legal status of things in property.

However, Antoine's report affirms with clarity that these premises, this legal situation with animals, is not sustainable in contemporary society, and therefore derives from this the proposal of changing said statute, as well as the creation of a category of animals separate from that of things. Although the creation of this separate category relating to animals has not been achieved, immediately after the publication of the report of reference, France, with the distinct academic impulse demonstrated by the distinguished jurist Jean Pierre Marguénaud,[33]

[30] *Id*.

[31] Ph Reigné, Les Animaux et le Code Civil, La Semaine Juridique édition Générale 2015, nº9, 2.3.2015, 402ss.

[32] Antoine, *supra* note 28.

[33] Jean-Pierre Marguénaud, L'animal en Droit Privé (Limoges-Paris, 1993). Professor Jean-Pierre Marguénaud's doctoral thesis published in 1992 must be counted and in 2009, the creation of the Revue Semestrielle de Droit Animalier which has been approached the academic reflection on the need to change the legal status of animals,

has already set off on a path of progressive admission, within academic and political circles, that the Civil Code must be modernized in terms of animals; "The Glavany Amendment"[34] consecrates the insertion of animal in Art. 2 of the 2015-177 Law of 16th February 2015 ("relating to the modernization and simplification of the right and procedures in the domains of justice and domestic affairs")[35] which would be crystallized by the modification of Art. 515-14 that declares: "Les animaux sont d'êtres vivants doués de sensibilité. Sous réserve des lois qui les protègent, les animaux sont soumis au régime des biens," just as in the consequent reforms of articles 522, 524, 528, 533, 564, and 2051, that result in the eradication of both direct and indirect references to animals as moveable or immoveable things in the Civil Code.

As it has already been observed, from a strictly Civil Law point of view, the new provisions relating to animals continue to be found in Book II, relating to things and the different forms of property.[36] This does not close the debate on the legal status of animals, but has instead facilitated a process of discussion and reforms that strongly indicate that animals, defined now in the Civil Code as living beings endowed with sensibility, do not figure in the category of things, of which there are abundant examples not only in academic literature, but in recent French jurisprudence also.

To show just one example, following the reform of Arts. 515-14 of the Code, Art. 528, which affirms (including after the modifying reform of the Law of 6th January 1999) that "sont meubles par leur nature les animaux et les corps qui peuvent se transporter d'un lieu à un autre, soit qu'ils se meuvent par eux-mêmes, soit qu'ils ne puissent changer de place que par l'effet d'une forcé étrangère" has been modified. In effect, following the 2015 reform, animals no longer figure as "meubles par destination," as France has eliminated the risk of the assimilation of animals with things through a consequent reform of articles related to these categories.

---

already by the first number. *See* Jean-Pierre Marguénaud, *Avant-Propos*, REVUE SEMESTRIELLE DE DROIT ANIMALIER RSDA 1, 7 (2009). http://www.unilim.fr/omij/files/2013/10/50_RSDA_1-2009.pdf; Suzanne Antoine, *Le Projet de Réforme du Droit des Biens—Vers un Nouveau Régime Juridique de L'animal?*, REVUE SEMESTRIELLE DE DROIT ANIMALIER RSDA 1, 11 (2009), http://www.unilim.fr/omij/files/2013/10/50_RSDA_1-2009.pdf.

[34] Amendment No.59, NATIONAL ASSEMBLY (Apr. 11, 2014), http://www.assembleenationale.fr/14/amendements/1808/AN/59.asp.

[35] Decision 2015-710 DC on 12th February 2015.

[36] Jean-Pierre Marguénaud,, *L'entrée en vigueur de "l'amendement Glavany": un grand pas de plus vers la personnalité juridique des animaux*, REVUE SEMESTRIELLE DE DROIT ANIMALIER RSDA 2, 15 (2014), http://www.unilim.fr/omij/files/2015/04/RSDA-2-2014.pdf.

An even more significant example is the elimination of animals from Article 524, in which, with all the historic Roman weight and agricultural nature that remained unaltered during the C XIX, mentions—among "immeubles par destination"—animals linked to cultivation and rural life such as "les pigeons de colombiers, les lapins de garennes, les poisons de certaines eaux…, mais aussi les ustensiles aratoires, les semences, les ruches à miel…." Currently, the agricultural tools and the facilities in which they are kept are still in the cited article, but the mentions of animals have disappeared—it no longer speaks of "des pigeons, des lapins, des poissons," and therefore it would be inconsistent to say that these animals, even though kept by the landowner (in hutches, in birdhouses, in hives) are immovable things "par destination."

Therefore, in France the legislature has not managed to change the "*summa divisio"* persons-things—this remains a calculated ambiguity that will possibly not cause a fracture between economic operators linked to agricultural and farming operatives. This highly-criticized solution of compromise has begun to reveal its weaknesses, as much through the critique of theories of Law as by the application of new criteria for animals consecrated by the Civil Code through the most recent rulings of the French courts. It is possible that it has only been a transitory compromise.

b. Portugal[37]

On 22 December, 2016, the Portuguese Parliament unanimously agreed that animals would no longer be property, such as they had come to be regulated up until this point by the Civil Code in their respective articles, 1302,[38] 1318 and 1323,[39] of book III, referred to as "Direito das Coisas" (in accordance with the Roman tradition that has been expressed in the vast majority of the European and Latin-American continental Codes and has been recognized by the Civil Law treaties).[40] Portugal

[37] Cf. In this dossier a detailed revisión by, A. Reis Moreira, La Reforma del Código Civil Portugués Respecto al Estatuto del Animal, en dA 9/3 (2018) (https://doi.org/10.5565/rev/da.345).

[38] Portuguese Civil Code, art. 1302: "Só as coisas corpóreas, móveis ou imóveis, podem ser objecto do direito de propriedade regulado neste código."

[39] Portuguese Civil Code, art. 1323.1: "Aquele que encontrar animal ou outra coisa móvel perdida e souber a quem pertence deve restituir o animal ou a coisa a seu dono, ou avisar este do achado; se não souber a quem pertence, deve anunciar o achado pelo modo mais conveniente, atendendo ao valor da coisa e às possibilidades locais, ou avisar as autoridades, observando os usos da terra, sempre que os haja."

[40] Cfr. For Portugal, António Menezes Cordeiro,., Tratado de Direito Civil III. Parte Geral III. Coisas (Lisboa 2016), António Menezes Cordeiro dedicates chapter V of his treaty on the Ownership of ("Os Animais"), with an interesting reflection of the legal protection of animals in the realm of property and the justification of legal title over them.

was, up until this change, considering animals as moveable things—the dominant legal status in occidental legal systems.

The process of this important reform of the legal condition of animals has been a long journey,[41] culminating with the success of a proposal that, as we see, displays original characteristics. This is in comparison to other reforms of the legal status of animals undertaken by other countries in the 90s, the CXX and in the first decade of the CXXI. With this reform, Portugal finds itself in a significant place regarding the transposition of the latest advances in Animal Welfare Science into a legal text that solidly affirms that animals are sentient beings.[42]

The initial proposal to modify the Civil Code was presented on 13 May 2016 by the following parties: PAN (Persons, Animals, Nature), Socialist Party (PS), the Left Block (BE) and the Social Democrat Party (SDP). The final draft received an absolute majority of votes following the debate in the Commission of Constitutional Affairs, Rights, Liberties and Guarantees (Comissão de Assuntos Constitucionais, Direitos, Liberdades e Garantias). The proposal was approved by all the parties, without exception (PAN, PSD, PS, BE, CDE and CDS-PP), in favor of the recognition of animals as sentient beings, which was to be included in a separate section of the Civil Code, distinguished from the Book on the rules of property; this amounts to the establishment of a special legal regime for animals.

The modification of the legal status of animals is reflected by Article 1 in the Law 8/2017 of 3 March, 2017,[43] which reads: *"A presente lei estabelece um estatuto jurídico dos animais, reconhecendo a sua natureza de seres vivos dotados de sensibilidade."*

Such a modification does not immediately imply the attribution of legal personality to animals, but entails a new classification and the creation of a new legal concept that places animals in a legal category "*a se,"* which is none other than that of "Animals."[44]

Essentially, the Portuguese Civil Code recognizes that animals do not fit as things in the classification of things in property and, for this reason, it has created a third legal figure—that of animals—that

[41] All the opinions and the various stages of the legislative initiative can be found on the Parliament website: http://www.parlamento.pt/ActividadeParlamentar/Paginas/DetalheIniciativa.aspx?BID=40225.

[42] Teresa Giménez-Candela,, Reforma del Cc. de Portugal: Los Animales como Seres sSntientes, in dA 7/4 (2016) https://doi.org/10.5565/rev/da.255.

[43] Diario da Republica 1ª Serie, Nº45, de 3 de Março de 2017, https://dre.pt/web/guest/home/-/dre/106549655/details/maximized.

[44] It is here that lies one of the most important aspects of the reform. The consequences of a such a change have begun to reveal themselves in the reflection applied to certain aspects of ethics in 0he collective work, Maria do Céu Patrão. Neves,M.D.C & Fernando. Araújo. (Coord.) Ética Aplicada. Animais (Lisboa 2018).

is not to be confused with things or human beings that, legally, we tend to call "persons,"[45] in itself it is nothing more than an abstraction categorized by the representation with which something (a society, an entity, a collective desire, a human being) acts in Law,[46] and hence the great expansion of the concept of "person" in the legal realm.[47]

Therefore, from now on, animals appear in the Portuguese Civil Code as beings endowed with sensibility; this entails, among other things, their recognition as part of an independent legal category that introduces the possibility of compensation in case of death or injuries to the animal, the establishment of the role of a primary caretaker for animals in the case of divorce, and the inability to seize companion animals.

The aforementioned amendment has entailed a systematic reorganization of the Civil Code that takes the following form: Subtitle I-A has been added to Book I of Title II, under the denomination of "Animals," which integrates articles 201-B and 201-D.[48]

Overall, the reform of the Portuguese Civil Code opens an important door for legal reflection, going further than other reforms on animals undertaken by other European and Latin-American Civil Codes[49] (especially that undertaken by Colombia in 2015) by not limiting itself to the "negative" expression of the concept "they are not things," but instead configuring the category in a positive way ("*living beings endowed with sensibility*") and modifying the legal condition of animals by separating them from the condition of things in property.[50]

---

[45] Teresa Giménez-Candela, *Dignidad, Sentiencia, Personalidad. Relación Jurídica Humano-Animal,*11, in dA, (Sep. 2, 2018), https://doi.org/10.5565/rev/da.346.

[46] Bartosz Brozek, *The Troublesome 'Person'*, in LEGAL PERSONHOOD: ANIMALS, ARTIFICIAL INTELLIGENCE AND THE UNBORN, 3, 8 (Springer International Publishing 2017).

[47] With an abundance of literature, the most recent will be referred to, Steffen Augsberg, Der Anthropozentrismus des Juristischen Personenbegrifs— Ausdruck überkommener (religiöser) Traditionen, Speziesistischer Engführung Oder Funktionaler Notwendigkeit?, in Rechtwissenschaft 3 (2016) 338ss.

[48] Book II, Title III, Chapter II, Section II is named "Occupancy of Things and Animals."

[49] The chronology of the status change for animals from things to not things, as a first step toward the "de-objectification" of animals in the Civil Law system is as follows: Austria (ABGB, §285a) 1st July 1988; Germany (BGB §90a) 20th August 1990; Switzerland (ZGB §641ª) 4th October 2002; Lichtenstein (Sachenrecht art.20ª) 14th May 2003. Also Catalonia (Cc. art. 511-1,3) 10th May 2006.

[50] Helena Correia Mendonça, *Reconocimiento de la Sentiencia en el Código Civil Portugués*, 3, in dA. (Aug. 2, 2018) https://doi.org/10.5565/rev/da.12.

III. Justifications for the De-Objectification Proposal[51]

On the whole, the European Civil Codes agree upon the legal classification of animals as things in property, due to the Roman tradition to which I have already referred that permeates European Private Law as its historic foundation.

a. Coherence with European Legislation

It was in the United Kingdom's Common Law that the first animal protection law was passed in 1822 (Richard Martin's Act to Prevent the Cruel and Improper Treatment of Cattle),[52] which broadened its reach until the Animal Protection Act was established in 1911, which remained in force and relatively intact for decades, until finally being substituted in 2006 for the Animal Welfare Act[53] that, for the first time, imposed a duty of care on the owners of companion animal.

The novelty of this legal formula lies in the fact that the owners of companion animals are not only obliged by law to satisfy the basic needs of their companion animals, such as the needs for water and food, but that the law imposes the requirement of veterinary attention, and that the animal lives in a suitable environment for its needs—something that the 1911 Act stipulated only for farmed animals.

Legally speaking, it is to the United Kingdom that EU owes the creation of the term Animal Welfare, its manner of application through the so-called Five Freedoms and, in recent decades, the use of the term "sentient beings" as a standard of treating animals. Therefore, recognizing their capability for not only experiencing physical pain, but for suffering, as well as for pleasure and joy.

On the Government website of the United Kingdom one can find the standards of treatment that must be met by those responsible (it

---

[51] Cf. in this dossier, Benito Aláez Corral, *Algunas Claves de la Reforma del Estatuto Jurídico Civil del Animal en España*, in dA (Sep. 3, 2018) https://doi.org/10.5565/rev/da.342.

[52] Cf. *Cruel Treatment of Cattle Act 1822*, also known as Martin's Act:."..if any person or persons shall wantonly and cruelly beat, abuse, or ill-treat any Horse, Mare, Gelding, Mule, Ass, Ox, Cow, Heifer, Steer, Sheep, or other Cattle...and if the party or parties accused shall be convicted of any such Offence...he, she, or they so convicted shall forfeit and pay any Sum not exceeding Five Pounds, not less than Ten Shillings, to His Majesty...and if the person or persons so convicted shall refuse or not be able forthwith to pay the Sum forfeited, every such Offender shall...be committed to the House of Correction or some other Prison...for any Time not exceeding Three Months."

[53] Animal Welfare Act 2006, c. 45 § 9 (Eng.), www.legislation.gov.uk/ukpga/2006/45/contents.

does not use the term *owners*) for farming operations, clearly set out on the basis that "if you are responsible for a farm animal you must make sure that you care for it properly."[54] It is not just a polite statement, but the result of years of animal welfare culture, of rigorous study and of revelation. It is not in vain that the two main political parties of the United Kingdom undertake and publish in their campaigns the regulations they consider to be necessary for Animal Welfare; the Conservatives under the slogan "Animals have Friends,"[55] and the Labour Party with their brochure, "Labour: Protecting Animals."[56]

Essentially, the United Kingdom has played a crucial role the creation of the current standards that govern Animal Welfare in Europe. In the 60s, the publication of Ruth Harrison's book *Animal Machines*[57] had an immediate impact on society by warning of the precarious living conditions of farmed animal in intensive systems.

The book was a wake-up call and the social response it generated led to the English Government ordering the establishment of a Scientific Commission that was to produce a technical report on the living conditions of farmed animals. As a result, it published a report in 1965 presented by Professor Roger Brambell,[58] known as the "Brambell Report," which set out Animal Welfare through five requirements that ensured not only the physical integrity of animals, but the mental aspect, as well as respect for their unique characteristics, ways of life, and behavior according to their animal natures. From this date onwards, it can be said that the treatment of animals and the defense of their interests and respect for their behavior (their "culture") has permeated the academic vision and public policy to the benefit of animals—a change that has never been looked back on.[59]

As a result of the "Brambell Report," in 1965 the British government created the Farm Animal Welfare Advisory Committee.

---

[54] Dept. for Environment, Food & Rural Affairs, *Farm Animals: Looking After their Welfare,* Gov.UK (Oct. 15, 2015), https://www.gov.uk/guidance/farm-animals-looking-after-their-welfare.

[55] Party Policies on Animals, Animal Aid (2015), http://voteforanimals.org.uk/conservatives/.

[56] Ed Milivand and Maria Eagle, Labour: Protecting Animals, https://b.3cdn.net/labouruk/1c898776c42677bb69_eum6vj1eg.pdf.

[57] Harrison, Ruth., Animal Machines: The New Factory Farming Industry (1964).

[58] Technical Committee to Enquire into the Welfare of Animals kept under Intensive Livestock Husbandry Systems, Report, 1965, HC Cmnd. 2836, at 9 (UK).

[59] *See* Wookey, Oliver, *Legislative Proposal to Increase Sentencing Powers for Cruelty to Nonhuman Animals: Taken with a Pinch of Salt*, (Jan. 2018) https://doi.org/10.5565/rev/da.249; at 16; *See also* Wookey, Oliver, *The Effect of the Brexit on Animal Welfare in the United Kingdom: A Case for Skepticism and Scrutiny*, (Apr. 2018) https://doi.org/10.5565/rev/da.340 at 33.

In 1979 it became the Farm Animal Welfare Committee[60] as a body responsible for the establishment and development of animal welfare policies, conducted through the five principles known as The Five Freedoms.[61] While European Law does not comply with this English perseverance, this evolution of English law has its own origins, and the EU has certainly been heavily influenced by it.[62]

Having said this, one should not understate the reform of the Spanish Civil Code that was aimed at responding to the need to give coherency to our framework. The tendency toward coherence evident in the French and Portuguese cases is really nothing more than an adaptation of the principle that animals are not things, but living beings endowed with sensibility, to the internal law of both countries. The law was "constitutionalized" in the beginning of the 90's. The category of animals as sentient beings was first introduced by declarations, then in protocols, and finally as an article in treaties of the European Community and now of the European Union.[63]

Since 2009, Article 13 of the Treaty on the Functioning of the European Union has essentially stipulated, without distinction between the area of law to which it applies (including in civil law), that:

---

[60] Tina Conklin, *An Animal Welfare History Lesson on the Five Freedoms*, MSU Extension (Feb. 25, 2014), https://www.canr.msu.edu/news/an_animal_welfare_history_lesson_on_the_five_freedoms.

[61] Farm Animal Welfare *Council, Farm Animal Welfare in Great Britain: Past, Present and Future*, (2009), https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/319292/Farm_Animal_Welfare_in_Great_Britain_-_Past__Present_and_Future.pdf ("1. Freedom from Hunger and Thirst: by ready access to fresh water and a diet to maintain full health and vigor. 2 Freedom from Discomfort: by providing an appropriate environment including shelter and a comfortable resting area. 3. Freedom from Pain, Injury or Disease: by prevention or rapid diagnosis and treatment. 4. Freedom to Express Normal Behaviour: by providing sufficient space, proper facilities and company of the animal's own kind. 5. Freedom from Fear and Distress: by ensuring conditions and treatment which avoid mental suffering.")

[62] *See* Teresa Villalba Rodriguez, 40 Años de Bienestar Animal: 1974-2014: Guía de la Legislación Comunitaria Sobre Bienestar Animal (2015) (For Spain); *See also* Teresa Villalba, Código de Protección y Bienestar Animal, Boletn Oficial Del Estado (2018) http://boe.es/legislacion/codigos/codigo.php?id=204&modo=1&nota=1.

[63] Alonso E. Garcia, *El Bienestar de los Animales como Seres Sensibles-Sentientes: Su Valor como Principio General, de Rango Constitucional, en el Derecho Español*, *in* Los Principios Juridicos del Derecho Administrativo, 1427, (Juan Alfonso Santamaria Pastor ed., 2010); Marlene Wartenberg, *Art. 13 Lisbon Treaty/TFUE—Historical, Constitutional and Legal Aspects*, *in* Animales y Derecho 353, (Favre, D. and Gimenez-Candela, T. eds., 2015).

> In formulating and implementing the Union's agriculture, fisheries, transport, internal market, research and technological development and space policies, the Union and the Member States shall, since animals are sentient beings, pay full regard to the welfare requirements of animals, while respecting the legislative or administrative provisions and customs of the Member States relating in particular to religious rites, cultural traditions and regional heritage.[64]

The result is a legal regime for animals in a way they are not regulated by European Law or by regulations. The status awarded to animals by the national Civil Code is residual and anachronistic.[65] It tries to apply the current text to this principal, but stumbles with the conception enrooted in the actual codification—the law that governs individuals is exclusively civil law (which is nothing more than an anachronism itself, as constitutional, administrative, or even general regulations are also used in such relations). This question becomes even more interesting when considering the relation to so-called historic rights of ancient special law regimes in Spain. In some cases, and as it also pertains to Catalonia, the legal status of animals was adapted in 2006 to what was commonly dominant in Europe at the time, in the sense them "not [being] considered things,"[66] according to the model of the Austrian, German and Swiss Codes.[67]

The changes that have taken place in the legal status of animals in the European Civil Codes to differentiate them from the regime of "things" were stimulated by different inspirational motives and principles corresponding to greatly diverging realities, especially in Spain. The commonality was the "animal turn,"[68] at a global level and particularly in Europe, the obligation of member states to incorporate the principles of European Animal Welfare legislation based on the scientific proof of animal sentience on the one hand, and on the other, the deconstruction of the principle of property[69] as the only element generating the relationship

---

[64] Treaty on the Functioning of the European Union, Art. 13, Dec. 13, 2007, 2007 O.J. (C 326) 1, 12.

[65] Nuria Mendez de Llano Rodriduez, La Modernización del Estatuto del Animal en la Legislación Civil Española, Drecho Animal (Forum of Animal Law Studies), vol. 9/3 (2018), https://doi.org/10.5565/rev/da.343.

[66] Book V of the Civil Code of Catalonia, art. 511-1,3.

[67] *See* infra Part III.2.

[68] Harriet Ritvo, *On the Animal Turn,* 136 Daedalus 118, (2007).

[69] Dave Favre, Animals as Living Property, Tier und Recht Entwicklungen und Perspektiven im 21. Jahrhundert (Zürich 2012) 418ss., article based in the 2010 publication in Marquette L. Rev. 93 (2010) 1021ss.; M. Shermaier, Dominus Actuum Suorum. Die Willenstheoretische Begründung des Eigentums und das Römische

between humans and animals.[70] For this reason, it should not come as a surprise that other occidental countries, unaffiliated with the works of the European Union, have introduced changes in the same sense—of considering animals to be sentient beings. This is in reference to countries with a codified legal system, such as in the cases of Colombia,[71] Brazil,[72] Nicaragua[73], or, partially, Mexico,[74] or Common Law countries such as New Zealand[75] or Canada.[76]

In regard to the Spanish Civil Code, the question that now arises and must be considered is that of the opportunity to introduce a change regarding the legal status of animals in our Civil Code, just as society has through the Congress of Deputies that were in unanimous agreement; we see this as much from the coherency of such a change with that planned by European legislation, particularly in reference to Animal Welfare, as from the coherency of the changes undertaken by other countries.[77]

b. Coherency with the Changes Made by Other Countries

This piece has now covered the recent changes introduced in the French and Portuguese Civil Codes regarding the legal status of animals that has come to consider them "living beings endowed with sensibility," and has alluded to the decision of the United Kingdom to set and apply in its own legislation the concept of animals as "sentient beings"- a term that has been used by the ruling regulations of the EU on this topic (that is to say, Article 13 of the TFEU). We now move on to consider the answers to this question in other countries: Austria,

Recht, in SZ 134 (2017) 50ss.

[70] Teresa Gimenez-Candela, *Dignidad Sentiencia, Personalidad: Relacion Jurdica Humano-Animal,* Da (2018), https://revistes.uab.cat/ojs-da/da/article/view/v9-n2-gimenez-candela.

[71] Codigo Ley 1774 de 2016 (affirming that animals are sentient beings).

[72] *See Diario Da Camara Dos Deputados*, Republica Deferativa Do Brasil (Jun. 2017) http://imagem.camara.gov.br/Imagem/d/pdf/DCD0020170620001060000.PDF (describing a legal project presented to the senate in 2015 (nº 352), to modify the status of animals in the civil code from things to "bens moveis" (movable things)).

[73] Alberto Arguello, *Los Animales como Seres Vivos Dotados de Sensibilidad ante el Interés Común en la Ganadería Nicaragüense y los Acuerdos de la OIE y el OIRSA*, Da 9/3 (2018), https://doi.org/10.5565/rev/da.330.

[74] *See generally supra* note 13,14.

[75] *Animal Welfare Act of 1999*, New Zealand Legislation, http://www.legislation.govt.nz/act/public/1999/0142/59.0/DLM49664.html_(referring to title (a)(i)).

[76] *Loi sur la Protection Sanitaire des Animaux*, Publications Quebec (Dec. 4, 2015), http://legisquebec.gouv.qc.ca/fr/ShowDoc/cs/P-42.

[77] Teresa Giménez-Candela, *An Overview of Spanish Animal Law*, *in* Animales y Derecho (D. Favre & T. Giménez-Candela eds., 2015).

Germany and Switzerland;[78] countries that, at the end of the '80s and during the '90s, undoubtedly led the movement that we have called the "De-Objectification" of animals, in an approach that we began with the first MINECO project: "Animals, Law and Society: from Roman Law to Global Society" (DER 2010-2131) and that we have continued, along with other projects, and others within MINECO, and on which we have presented results.[79]

i. Switzerland

A legal change came into effect in 2003 that set a landmark in the history of the country—a change in the corresponding article of the Civil Code, in which it established that animals are not things ("Nicht Sachen"). Of course this change had a visible effect in the law of damages, in the law of successions and title deeds—something that has involved more than a few discussions on whether the term Dignity is applied equally and with the same value to human beings as it is to animals.[80]

In coherence with this, Article 641a of the Civil Code (BGB)[81] established that animals are not things. It is interesting to observe that this article is composed of two parts; in the first, the legislature refers to the contents of property and general principles (Art. 641 A. Inhalt des Eigentums / I. Im Allgemeinen) and in the second, refers to the contents of property and, separately, to animals (Art. 641*a* A. Inhalt des Eigentums / II. Tiere) which, in my opinion, far from being a purely material distinction, reflects a new position for animals that, already seen in the mention by the title, are separate from things.

An express reference to the Dignity of creature ("Würde der Kreatur") as a governing principle of the treatment and consideration that is owed to animals[82] appears only in the Swiss Constitution of 18 April 1999, Art. 120.2;[83] this notion was renewed in 2008, then transformed

[78] Anne Peters, *Tierwohl als Globales Gut: Regulierungsbedarf und -chancen*, MPIL Research Paper Series, 2016-03 (2016).

[79] Teresa. Giménez-Candela, *supra* note 1, 2, and 7.

[80] M. Michel & E. Schneider Kassayeh, *The Legal Situation of Animals in Switzerland: Two Steps Forward, One Step Back—Many Steps to Go*, 7 J. Animal L. 1, (2011).

[81] Schweizerisches Zivilgesetzbuch [ZGB], [Civil Code] Jan. 1, 1912, SR 210, art. 641 a (Switz).

[82] B. Sitter-Liver, *Recht und Gerechtigkeit auch für Tiere. Eine konkrete Utopie*, *in* Tier und Recht (Margot Michel, Daniela Kühne & Julia Hänni eds., 2012).

[83] Schweizerisches Zivilgesetzbuch [ZGB], [Civil Code] Jan. 1, 2000, SR 101, art. 120.2 (Switz) ("Der Bund erlässt Vorschriften über den Umgang mit Keim- und Erbgut von Tieren, Pflanzen und anderen Organismen. Er trägt dabei der Würde der Kreatur sowie der Sicherheit von Mensch, Tier und Umwelt Rechnung und schützt

into "dignity of animals," in the Swiss Animal Protection Act**,** that had been completely revised:[84]

> Art. 1 Zweck dieses Gesetzes ist es, die Würde und das Wohlergehen des Tieres zu schützen.
>
> *The purpose of this act is to protect the dignity and welfare of animals.*
>
> Art. 3 a. Würde: Eigenwert des Tieres, der im Umgang mit ihm geachtet werden muss. Die Würde des Tieres wird missachtet, wenn eine Belastung des Tieres nicht durch überwiegende Interessen gerechtfertigt werden kann. Eine Belastung liegt vor, wenn dem Tier insbesondere Schmerzen, Leiden oder Schäden zugefügt werden, es in Angst versetzt oder erniedrigt wird, wenn tief greifend in sein Erscheinungsbild oder seine Fähigkeiten eingegriffen oder es übermässig instrumentalisiert wird.
>
> *Dignity: Intrinsic value of the animal, which has to be respected when dealing with it. The dignity of the animal is not being respected if overriding interests cannot justify the distress imposed on it. In particular, distress is present if pain, suffering or damages are inflicted upon the animal, if fear is caused or the animal is subject to humiliation, if the appearance or features are significantly changed or if it is excessively instrumentalized.*[85]

Switzerland must be considered to be the absolute precursor and pioneering country in this area.[86] By 1893 the Swiss nation had already voted in favor of a constitutional prohibition of certain methods of slaughter without stunning before exsanguination. Therefore, Switzerland was the first country in the world that imposed the obligation of stunning animals before slaughter, for which reason ritual slaughter continues to be prohibited. Switzerland was also the first European country to include animal welfare as a specific theme in its Constitution, by as early 1973, as can be seen in Article 80 of the Federal Constitution.

---

die genetische Vielfalt der Tier- und Pflanzenarten.").

[84] Schweizerisches Zivilgesetzbuch [ZGB], [Civil Code] Sept. 1, 2008, SR 455 (Switz).

[85] TSchG, Art. 1, Art. 3, (Dec. 16, 2005), https://www.admin.ch/opc/de/classified-compilation/20022103/index.html.

[86] A. Goetschel, Tierschutz und Grundrechte (Zürich 1989).

But what is truly outstanding is that in 1992 a second constitutional order reinforced the position of animal welfare in a very unique way; as a result of a national referendum, Switzerland had to amend the Constitution by adding an order that obliged the legislature to pass laws on the use of genetic and reproductive material of animals, plants and other organisms, and in doing this, the need to bear in mind the dignity of other living beings, including the dignity of animals, as we have already mentioned.[87]

ii. Austria

We briefly see the corresponding regulations of the Austrian Civil Code (ABGB, Allgemeines Bürgerliches Gesetzbuch). This Code broadly defines the concept of *thing* in article §285:

> **Begriff von Sachen im rechtlichen Sinne**
>
> *(Concept of things in a legal sense)*
>
> § 285. Alles, was von der Person unterschieden ist, und zum Gebrauche der Menschen dient, wird im rechtlichen Sinne eine Sache genannt.
>
> *All that differs from the person and serves for the use of man is considered a thing in the legal sense.*

In this way the concept encompasses both corporal as well as non-corporal things. To this § was added § 285°, which excludes *expressis verbis* to the animal of the concept of the thing:

> § 285a. Tiere sind keine Sachen; sie werden durch besondere Gesetze geschützt. Die für Sachen geltenden Vorschriften sind auf Tiere nur insoweit anzuwenden, als keine abweichenden Regelungen bestehen.
>
> *Animals are not things; they are protected by special laws. The orders referred to things are applied to animals if there is no alternate provision.*

[87] The Swiss Constitution refers to animals in the following and separate articles: Art. 80 BV: competence to legislate for the protection of animals; Art. 84,1 BV: protection of animals against the disturbances of alpine transit traffic; Art. 118,2 b. BV: protection against dangerous illnesses; Art. 104,3 b. BV: protection against abusive exploitation in agriculture; Art. 120,2 BV: respect of the dignity of creature.

To complement this rule, in the field of regulating compensation a new section about the costs of recovery of an injured animal was simultaneously added, § 1332 ABGB. Here it says:

> § 1332 a. Wird ein Tier verletzt, so gebühren die tatsächlich aufgewendeten Kosten der Heilung oder der versuchten Heilung auch dann, wenn sie den Wert des Tieres übersteigen, soweit auch ein verständiger Tierhalter in der Lage des Geschädigten die Kosten aufgewendet hätte.
>
> *If an animal is injured, they are owed the actual costs of recovery or of intent to recover, even when this exceeds the value of the animal, so long as the legal owner of the animal has covered the costs in place of the injured party.*

Afterwards, the Austrian legislator changed the Enforcement Regulation in the sense of the exemption from seizure of animals (EO, Exekutionsordnung), but it was done—by consequence of the change introduced in the BGB—within the frame of a broad modification in the year 1996. Effectively, in paragraph § 250 (4) it determined the exemption from seizure of domestic animals that are not to be sold.[88] In contrast to the German regulation, which will be examined a little later, and contains a clause of harshness in favor of the creditor, is limited to the exemption of seizure up to a value of 750 euros.

> § 250 EO (4): Unpfändbare Sachen *Cosas inembargables*
>
> Unpfändbar sind: *They are not seizable*
>
> 1….
>
> 4. nicht zur Veräußerung bestimmte Haustiere, zu denen eine gefühlsmäßige Bindung besteht, bis zum Wert von 750,-€ (10 000 S) sowie eine Milchkuh oder nach Wahl des Verpflichteten zwei Schweine, Ziegen oder Schafe, wenn diese Tiere für die Ernährung des Verpflichteten oder der mit ihm im gemeinsamen Haushalt lebenden

[88] Although I have not elaborated on this, I would like to emphasize that already by 1988 the ABGB included, in the ZPO reform, the inability to seize animals due to the "special bond of affection" that links them to the family they live with. Another is the expression, also employed by the BGB, regarding companion animals; "Familienmitglied," which means family members.

> Familienmitglieder erforderlich sind, ferner die Futter- und Streuvorräte auf vier Wochen;
>
> *Domestic animals that are not for sale, with respect to which there is not emotional attachment, up to the value of 750,-€ (10.000 chelines), as well as a dairy cow or, at the choice of the liable party, two cows, goats or sheep, if these animals are necessary for the liable party to feed, or to feed the members of their family that live in their house, along with the feeding provisions and maintenance of them for 4 weeks.*

iii. Germany

At the time of the Austrian reform, the German legislator also began a reform relating to the legal status of animals in the BGB. The fact that Germany had dealt with this topic was to be expected, as Germany had already made vast changes in the field of animal protection. A new version of the Animal Protection Law came into force in 1986. Through the "[l]aw for the improvement of the legal condition of animals in Civil Law," Germany also modified the Civil Code (BGB), and the regulations of the BGB are very similar to those in Austria.

Chapter 2 of the first book was broadened to include animals, with what remains of the following form: Things. Animals. A1 § 90, in which things are defined, was added § 90ª.

The result is the following:

> 2. Chapter. *Things. Animals*
>
> § 90. [Begriff] Sachen im Sinne des Gesetzes sind nur körperliche Gegenstände.
>
> *(Concept) Things, in the legal sense, only constitute corporal things.*
>
> § 90 a. [Tiere] Tiere sind keine Sachen. Sie werden durch besondere Gesetze geschützt. Auf sie sind die für Sachen geltenden Vorschriften entsprechend anzuwenden, soweit nicht etwas anderes bestimmt ist.
>
> *Animals are not things. They are protected by special laws. The following orders, valid for things, must be applied to them, as long as another thing is not planned.*

It is interesting to observe that, in a different way to how this reform

was addressed in Austrian Law, the BGB signals special treatment for animals, making reference to the rights and duties of the owner, such as in the third chapter, assigned to the property:

> Dritter Abschnitt. 1) Eigentum Erster Titel. Inhalt des Eigentums ***First Title: Contents of property***
>
> **§ 903. [Befugnisse des Eigentümers]** Der Eigentümer einer Sache kann, soweit nicht das Gesetz oder Rechte Dritter entgegenstehen, mit der Sache nach Belieben verfahren und andere von jeder Einwirkung ausschließen. Der Eigentümer eines Tieres hat bei der Ausübung seiner Befugnisse die besonderen Vorschriften zum Schutz der Tiere zu beachten.
>
> *(Powers of the owner) The owner of a thing can make use of it as they like, so long as this does not contravene the law or the rights of a third party and can exclude all others from intervention.* ***The owner of an animal must observe the special provisions for the protection of animals when exercising their power.***

It agrees to mark an important reform operated in the area of compensation, so complements itself in paragraph § 251 BGB—which regulates the compensation in cash and that, in part two, limits the obligation of restitution to adequate costs through a similar regulation to that of Austria, but with greater scope and weight.

> **§** 251(1) Soweit die Herstellung nicht möglich oder zur Entschädigung des Gläubigers nicht genügend ist, hat der Ersatzpflichtige den Gläubiger in Geld zu entschädigen.
>
> (2) Der Ersatzpflichtige kann den Gläubiger in Geld entschädigen, wenn die Herstellung nur mit unverhältnismäßigen Aufwendungen möglich ist. Die aus der Heilbehandlung eines Tieres entstandenen Aufwendungen sind nicht bereits dann unverhältnismäßig, wenn sie dessen Wert erheblich übersteigen.

With its meticulous recognition, the German legislator introduced, at the same time, rules adapted to the new condition of animals in the rules governing forced execution and changed the order of civil procedure to the following:

The § 765 of the ZPO (Zivilprozessordnung), which regulates

the suppression of measures of forced execution in extreme cases, broadens through the following precision instruments, which are a call to the exercise of responsibility that human beings have in respect to animals, in coherence with the spirit that impregnates German animal protection legislation that, as it is well known, began with National-Socialism:[89]

> § 765a ZPO. Betrifft die Maßnahme ein Tier, so hat das Vollstreckungsgericht bei der von ihm vorzunehmenden Abwägung die Verantwortung des Menschen für das Tier zu berücksichtigen.
>
> *If the measure affects an animal, the Enforcement Court must bear in mind, in its evaluation, the responsibility of man in relation to animals.*

The new § 811c ZPO refers to the exemption of animals from seizure in the following terms:

> *Abs. 1:* Tiere, die im häuslichen Bereich und nicht zu Erwerbszwecken gehalten werden, sind der Pfändung nicht unterworfen.
>
> *Abs. 2:* Auf Antrag des Gläubigers läßt das Vollstreckungsgericht eine Pfändung wegen des hohen Wertes des Tiers zu, wenn die Unpfändbarkeit für den Gläubiger eine Härte bedeuten würde, die auch unter Würdigung der Belange des Tierschutzes und des berechtigten Interesses des Schuldners nicht zu rechtfertigen ist.
>
> *(1) Animals kept in the domestic environment and not for profit are not subjects of the pledge.*
>
> *(2) At the request of the creditor, the Enforcement Court will permit the pledge due to the high value of the animal, if the exemption from seizure will for the creditor be of excessive harshness, not justifiable in the appreciation of the interest of the defence of animals nor the legitimate interest of the debtor.*

[89] A recent revision of this little-known aspect of German legal history is attributed to PLUDA, M., Animal Law in the Third Reich (in print).

At the same time, it suppresses the rule of § 811 No. 14 ZPO, which prohibits the seizure of animals with a value of less than 500 marks (~ 250 € or £220).

c. The Constitutionalization of Animals in Germany, Austria and Switzerland

As expected, the modification of the legal status of animals was passed in both Austria and Germany in a very controversial way. On the one hand, it amounted to a great advance in the field of animal protection, as animals were not considered a thing, but on the other hand, there was harsh criticism of the lack of content for and sense in these regulations. However, it is important to recognize that German legislation was modified with consistency and accuracy, to bring into effect the new condition of animals, declared not things, in all concomitant aspects—specifically:

- in relation to the rights and duties of owners (§903, BGB);
- in the area of compensation (§251[2] BGB);
- in cases of forced compliance (§ 765, ZPO);
- relating to seizure (§811c, ZPO).

In fact, with all the difficulties that come with the practical application of a negative concept such as "not things" (nicht Sachen), up until now the German Civil Doctrine refers to animals as "Mitgeschöpfe," which means creatures that share our fate.[90] This conception of respect for animals is that which has driven Germany to include animals in its Constitution. This constitutionalisation of animals made in Germany has made the country a role-model on the topic of animal protection. This change came about through Art. 20 of the Constitution (Grundgesetz, GG), in the part referring to the protection of the natural heritage of life ("Schutz der natürlichen Lebensgrundlagen") in 2002.[91]

[90] OBERGFELL, E.I., Tiere als Mitgeschöpfe im Zivilrecht, in Rechtswissenschaft 3 (2016) 388ss.

[91] Art. 20a GG.

Article 20a
[Protection of the Natural Foundations of Life and Animals]

Mindful also of its responsibility towards future generations, the state shall protect the natural foundations of life and animals by legislation and, in accordance with law and justice, by executive and judicial action, all within the framework of the constitutional order.[92]

The constitutionalization of animals in Austria and Switzerland came about rapidly. The chronology of the legislative changes that led to the reform of the animal-thing status by the respective Civil Codes and the Constitution in Austria, Germany and Switzerland is summarized here:[93]

Simultaneously, and successively, the aforementioned countries reformed their respective constitutions with the objective of including animal protection as a fundamental value.

Country	Modification to the Civil Code	Modification to the Constitution
Austria	1988	2004
Germany	1990	2002
Switzerland	2000	2004

The influx of these changes in the legal status of animals has been reflected in the undertaking of corresponding changes, not only in France and Portugal,[94] but in Liechtenstein[95] and in 2102 in the Czech Republic also.[96]

---

[92] *Id*.

[93] Catalonia must be included in this chronology, as, like it has been said, in 2006 it reformed book Vof the Civil Code of Catalonia to declare animals are not things. Codi Civil de Catalunya [CCC] [Civil Code of Catalonia] bk. V, tit. 1, art. 511-1, § 3. http://civil.udg.edu/normacivil/cat/CCC/pdf/L5.pdf.

[94] *See supra* Sections II.1, II.2.

[95] *See* Sachenrecht [SR] [Property Code] Feb. 1, 1923, SR, art. 20a, para. 2, https://www.gesetze.li/konso/pdf/1923004000?version=2 (Liechtenstein).

[96] Občanský zákoník [Civil Code], Zákon č. 89/2012 Sb., § 494, http://www.sagit.cz/info/sb12089 ("Živé zvíře má zvláštní význam a hodnotu již jako smysly nadaný živý tvor. Živé zvíře není věcí a ustanovení o věcech se na živé zvíře použijí obdobně jen v rozsahu, ve kterém to neodporuje jeho povaze."). *See also* Civil Code, Law no. 89/2012 Sb. § 494, http://obcanskyzakonik.justice.cz/images/pdf/Civil-Code.pdf ("A living animal has a special significance and value as a living creature endowed with senses. A living animal is not a thing, and the provisions on things apply, by analogy, to a living thing only to the extent in which they are nor

IV. Conclusion

The preceding reflections set out the "de-objectification" of animals in our Civil Code in line with the proposal voted for unanimously by the Spanish Parliament on the 14th February 2017 (and that they then unanimously voted in favor of) urging the Government to reform the Civil Code.[97]

The formulated proposal sets out three fundamental elements:

1. The creation within the Civil Code of a "*sui generis*" category relating to animals that considers them as what they are: living beings endowed with sensibility. Consequently, a detailed adaptation of the Civil Code article is proposed, where the mention of animals is separated from that of things in property, without limits to their condition as being "sentient beings" as recognized by science and European Animal Welfare legislation, which obliges us—as a Member State of the EU—to adapt our legislation to this reality.

2. The possibility of establishing, in the case of family conflict (divorce or separation), a regime in which companion animals benefit from treatment in harmony with a respectful of their welfare and the desires of family members to share, through custody, the animals that have lived with them prior to the separation or divorce.

3. The adaptation of the article relating to the LEC, referring to the inability to seize companion animals.

At this time, the text has been subject to 115 amendments to be considered by the Commission of Justice of the Congress of Deputies.[98] At its last meeting on the 12th of June, 2018, they agreed, at the request of PSOE (the party that is currently in power), to request a new report on

contrary to its nature.") (unofficial English translation).; Hana Mullerová, *Animals Finally Above Objects and Stricter Criminalization of Cruelty: Some Insights in Czech Animal Legislation*, 3 Derecho Animal F. of Animal L. Stud. Mar. 2012, https://revistes.uab.cat/da/article/view/v3-n1-mulerova/179.

[97] See Gimenez-Cándela, *supra* note2, at 7; *see also* sources cited *supra* note 1.

[98] *See generally* Congreso de los Diputados, *Comisiones*, Congreso, http://www.congreso.es/portal/page/portal/Congreso/Congreso/Organos/Comision?_piref73_7498063_73_1339256_1339256.next_page=/wc/composicionOrgano&idOrgano=303 (last visited Feb. 2, 2019).

the presented amendments,[99] although the initiative to change the legal status of animals in the Civil Code continues to come from the Popular Party (el Partido Popular), which began the reform process during their period in Government up until 1st June 2018.

Country *(*or Autonomous Community)*	**Year**	**Civil Code Provision**
Austria	1988	« Not things » (Negative formulation)
Germany	1990	« Not things » (Negative formulation)
Switzerland	2000	« Not things » (Negative formulation)
*Catalonia	2006	« Not things » (Negative formulation)
France	2015	« Living beings endowed with sensibility » (Positive formulation)
Colombia	2015	« Living beings endowed with sensibility » (Positive formulation)
Portugal	2016	« Living beings endowed with sensibility » (Positive formulation)

[99] *See* Congreso de los diputados, *Enmiendas e índice de enmiendas al articulado*, Boletín Oficial de las Cortes Generales , Mar. 27, 2018, http://www.congreso.es/public_oficiales/L12/CONG/BOCG/B/BOCG-12-B-167-1.PDF.

Decarbonizing the Energy Sector

Rafael Leal-Arcas,[1] Mariya Peykova,[2]
Victoria Nalule,[3] Pinar Kara[4]

I. Introduction

This Article will attempt to assess the eligibility of four European Union (EU) countries (Bulgaria, Poland, France, and Finland) and readiness for the implementation of smart grids, a move that is in line with the EU's attempts to promote the gradual shift towards energy decentralization and democratization, which is done in the context of decarbonizing the economy. The Article will also look at what steps have been taken to digitalize the economy to prepare these four countries for the implementation of smart grids, and will assess the current data protection and cyber security framework in place. Section II analyzes the situation in Bulgaria, Section III provides an analysis of Poland, whereas Section IV offers an analysis of France and Section V of Finland. Section VI concludes.

[1] Jean Monnet Chaired Professor in EU International Economic Law and Professor of Law, Queen Mary University of London (Centre for Commercial Law Studies); Member, Madrid Bar. Ph.D., European University Institute; M.Res., European University Institute; J.S.M., Stanford Law School; LL.M., Columbia Law School; M.Phil., London School of Economics and Political Science; J.D., Granada University; B.A., Granada University. The financial help from two European Union (EU) grants is greatly acknowledged: Jean Monnet Chair in EU International Economic Law (project number 575061-EPP-1-2016-1-UK-EPPJMO-CHAIR) and the WiseGRID project (number 731205), funded by the EU's Horizon 2020 research and innovation program. Email: r.leal-arcas@qmul.ac.uk

[2] Judicial Assistant at the Court of Appeal; Research Associate at Queen Mary University of London, WiseGRID project; former intern at International Criminal Court; future pupil barrister (2019); Queen Mary University of London (LL.B), Centre for Commercial Law Studies (LL.M in Public International Law); Bar of England and Wales, Gray's Inn (2013), New York Bar (2016) (admission pending in 2019).

[3] Research Associate at Queen Mary University of London, WiseGRID project; PhD in International Energy Law and Policy, CEPMLP, University of Dundee.

[4] Research Associate at Queen Mary University of London, WiseGRID project.

II. Bulgaria

a. General Overview

i. Greenhouse Gas Emissions and Targets

The most significant greenhouse gas in Bulgaria is carbon dioxide. In 2015 Bulgaria had the second highest greenhouse gas emission intensity in the EU;[5] greenhouse gas emissions totaled 61,483 Gg CO2 without reporting of sequestration from the Land-Use, Land Use Change and Forestry sector ('LULUCF').[6] The EU target for greenhouse gas emissions for 2020 is 20% less compared to 1990 targets.[7]

The highest amounts of greenhouse gas emissions, particularly carbon dioxide, emanate from the energy sector in Bulgaria, followed by the agriculture sector, industrial processes and product use, waste, and finally LULUCF.[8] According to the National Inventory Report for 2017, emissions from the energy sector decreased by 43.84% in 2015; the main reasons for this decrease were said to be a transition from a centrally planned economy to a market-based economy, as well as the reconstruction of the economy, leading to an economic slowdown. As a consequence, there was a sharp drop in demand for electricity production from thermal power production.[9]

Reduction was also observed in the emissions from industrial processes and product use, with some fluctuations throughout the years, mainly due to the economic crisis in 2009 and later, the development of better technologies on plant level.[10] The relevant reduction of emissions in the agricultural sector was mostly attributed to the gradual decrease of agricultural land, while the decrease in emissions from waste was attributed to a steady decline in population in the country.[11]

---

[5] *Trends and projections in Bulgaria 2017: Tracking progress towards Europe's climate and energy targets*, European Env't Agency (2017), https://www.eea.europa.eu/publications/trends-and-projections-in-europe-2017.

[6] *National Inventory Report 2017, Greenhouse Gas Emissions 1988 2015*, Republic of Bulg. Ministry of Env't and Water (Mar. 2017), http://eea.government.bg/bg/dokladi/dokumenti/BG_NIR_2017_12042017.pdf.

[7] *Europe 2020 Targets: Statistics and Indicators for Bulgaria*, European Comm'n, https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-your-country/bulgaria/europe-2020-targets-statistics-and-indicators-bulgaria_en.

[8] European Env't Agency, *supra* note 1.

[9] Republic of Bulg. Ministry of Env't and Water, *supra* note 2.

[10] *Id*.

[11] *Id*.

The latest estimates reported by Member States in 2017 indicate that Bulgaria is one of fourteen countries that projected a constant decrease of emissions under the Effort Sharing Decision ('ESD') for the years 2016-2020.[12] A comparative assessment of the country's records on greenhouse gas emissions leads to a rather bleak conclusion; the country appears to have consistently underperformed in comparison to its EU counterparts. However, by looking at the country's records in context, and comparing them to its performance in previous years, one discerns a clear upward trajectory which cannot and should not be completely disregarded.

b. Renewable Energy

Recent Eurostat statistics indicate that Bulgaria has exceeded its targets for production and consumption of electricity from renewable sources set in the Europe 2020 strategy.[13] For example, there has been a gradual increase in the use of renewables in the electricity sector; a double-edged sword for vulnerable consumers who are still plagued by higher electricity prices, despite government efforts to introduce preferential prices for those who are unable to afford it.[14] Eco-innovation in the country has been slow. The main challenges include the move towards a low carbon economy and the promotion of resource efficiency.[15]

The difficulties in this area are due to a number of factors, such as the use of outdated energy infrastructure and equipment/technologies, limited funding and limited investment opportunities, energy poverty, and an underdeveloped transport infrastructure.[16] These difficulties are further compounded by the fact that for the ambitious EU decarbonization targets to be achieved by states in South Eastern Europe, such as Bulgaria, the region needs to replace more than 30% of its current fossil fuel generation capacity by the end of 2030, and more

[12] European Env't Agency, *supra* note 1.

[13] Stoimen Pavlov, *Bulgaria among EU countries with highest consumption of electricity from renewables*, Radio Bulgaria (Feb. 12, 2018), http://bnr.bg/en/post/100932162/bulgaria-among-eu-countries-with-highest-consumption-of-electricity-from-renewables.

[14] *Bulgaria Power Sector: Making the Transition to Financial Recovery and Market Liberalization*, World Bank (Nov. 2016), https://www.me.government.bg/files/useruploads/files/wb_ras_i__summary_report_en.pdf.

[15] *Eco-innovation in Bulgaria, EIO Country Profile 2016-2017*, European Comm'n Eco-Innovation Observatory, https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/field/field-country-files/bulgaria_eio_country_profile_2016-2017_1.pdf [hereinafter Eco-Innovation Observatory].

[16] *Id*.

than 95% by 2050.[17] This sets some challenging objectives for policy-makers in terms of setting up a framework for decarbonization of the economy in line with the EU targets.

In 2017, the country was ranked last under the Eco-Innovation Scoreboard, although changes implemented since 2013 have led to modest but steady improvements. The objective is to reach the moderate innovators group by 2020.[18] There were concerns in 2017 that the government had illegally subsidized coal-fired and other plants, which hindered the transition from fossil fuels to renewable energy.[19] Even though it is not clear yet whether the European Commission has concluded its investigation on this matter, the negative publicity has undoubtedly had an impact on investment opportunities with respect to renewable energy projects in the country.

A study conducted by the Centre for the Study of Democracy concluded that Bulgarian policy-makers have been late to define new ways to foster the decarbonization of the electricity system while maintaining security of supply.[20] It found that existing support mechanisms were purposefully mismanaged to the benefit of a few well-connected companies and politicians, and the bad governance of the first-generation renewable energy policy failed to bring about the democratization of electricity generation that was hoped for. In fact, the study continues, it has produced a popular social backlash fueled by rising electricity prices and exacerbated by widespread energy poverty, which has rendered the case for renewables politically toxic. For the abovementioned reasons, and despite evidence of gradual improvement, the move towards the use of renewable energy sources has been slow.

c. Smart Grid Status

There are a number of small projects underway which have started to explore the possibilities for smart grid development.[21]

---

[17] *Roadmap to a Decarbonised Electricity Sector in South East Europe and in Bulgaria*, Ctr. for the Study of Democracy (Mar. 2018), https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjD3-T8-pjgAhUySxUIHTwkD1cQFjAAegQICRAB&url=http%3A%2F%2Fwww.csd.bg%2FfileSrc.php%3Fid%3D23431&usg=AOvVaw0yZuv_w8w8-MXswtlPbbPd.

[18] Eco-Innovation Observatory, *supra* note 11.

[19] Barbara Lewis &Tsvetelina Tsolova, *Bulgaria accused of illegal aid to fossil fuel power providers*, Reuters (June 15, 2017), https://www.reuters.com/article/us-bulgaria-energy-stateaid/bulgaria-accused-of-illegal-aid-to-fossil-fuel-power-providers-idUSKBN1961CY.

[20] Centre for the Study of Democracy, 'Decentralisation and Democratisation of the Bulgarian Electricity Sector: Bringing the Country Closer to the EU Climate and Energy Core', 2018, available at http://www.csd.bg/artShow.php?id=18291

[21] My Smart Energy, available at www.my-smart-energy.eu

Although Bulgaria's energy strategy foresees the eventual replacement of ordinary power transmission networks with smart grids, there are few advancements in the field at present; the country lags behind in comparison to other EU Member States.

d. Energy Profile

i. Energy Mix, Production and Reliance on Imports

Bulgaria does not have major sources of oil and gas on its territory, which means that it needs to rely on imports from other states. Eurostat statistics indicate that the Bulgarian economy was reliant on imports for 37.2% of its energy demand in 2016.[22] In 2007, Bulgaria officially liberalized its electricity markets, a slow process that has stifled the country's move towards a more secure, competitive and sustainable energy market. The energy market is dominated by electricity. Bulgaria is one of the main exporters of electricity in Southeast Europe.[23] As depicted in Figure 1, the electricity market is still dominated by traditional sources for the generation of energy, with renewable energy sources making up only a small percentage of the electricity generation structure, slowing down the process of decarbonization in the country. Significant sources for the generation of electrical power are local coal and nuclear fuel.[24] Coal provides about half of the electricity in the country, with nuclear providing just over a third. The rest is covered by renewable energy sources such as hydro, solar and wind.[25] "Compared to the EU average, the energy mix of Bulgaria has a higher use of solid fuels (34.1% vs 16.2%) and nuclear (20.5% vs 13.6%) and lower share of petroleum…(21.6% vs 34.5%) and gases (13.4% vs 22%) whereas the share of renewables is similar (10.3% vs 12.9%)."[26]

[22] *Energy Dependence*, Eurostat, https://ec.europa.eu/eurostat/tgm/table.do?tab=table&plugin=1&language=en&pcode=t2020_rd320.

[23] *See European Network for Research, Good Practice and Innovation for Sustainable Energy*, European Comm'n Cordis, https://cordis.europa.eu/project/rcn/205823/factsheet/en.

[24] *Bulletin on the State and Development of the Energy Sector in the Republic of Bulgaria*, Gov't of Bulg. (2015), https://www.me.government.bg/files/useruploads/files/eoos/buleti_-energy-_2015-eng.pdf.

[25] *The energy sector in Bulgaria*, Bankwatch Network, https://bankwatch.org/beyond-coal/the-energy-sector-in-bulgaria.

[26] *Energy Union Factsheet: Bulgaria* (Eur. Comm'n, Staff Working Document 2017), https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-bulgaria_en.pdf.

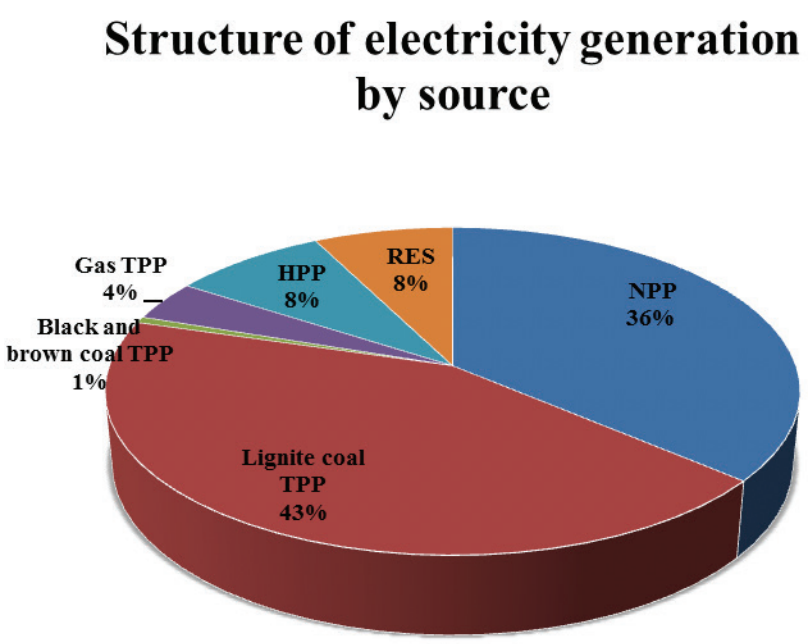


FIGURE 1: Structure of Electricity Generation by Source

Source origin: National Report 2017— Energy and Water Regulatory Commission, Bulgaria

In respect to Bulgaria's dependence on solid fuels, the country produced approximately 18,000 tons of lignite coal in the first seven months of 2018, and relied on some imports of hard coal and coke of coal.[27] Production of oil and petroleum products is generally low in Bulgaria, especially in the field of heating and miscellaneous use, where Bulgaria is heavily dependent on imports.[28] In addition, all of Bulgaria's crude oil and large quantities of refined products are imported from Russia, whose imports from Bulgaria are marginal, creating an uneven playing field, and further slowing down the country's move towards a more sustainable energy market.[29]

Even though the gas market was liberalized in 2016, data published by the National Statistical Institute for 2018 reveals that production of natural gas is equally insignificant, with Bulgaria still being heavily dependent on imports, mainly from the Russian Federation.[30]

---

[27] *Production and Deliveries of Solid Fuels*, Nat'l Stat. Inst. of Bulg., https://infostat.nsi.bg/infostat/pages/reports/result.jsf?x_2=596.

[28] *Production and Deliveries of Oil and Petroleum Products*, Nat'l Stat. Inst. of Bulg., https://infostat.nsi.bg/infostat/pages/reports/result.jsf?x_2=643.

[29] D.D. Popova, *Economic Factors for the Development of the Bulgarian Oil and Gas Industry*, 3 Open J. of Yangtze Oil and Gas No. 2 (2018), https://file.scirp.org/Html/5-2890064_84116.htm.

[30] *Production and Deliveries of Natural Gas*, Nat'l Stat. Inst. of Bulg., https://infostat.nsi.bg/infostat/pages/reports/result.jsf?x_2=617.

Independent research indicates that Bulgaria's current energy strategy does not incorporate a very prominent role for gas in its energy system, which could have a useful role in the country's efforts to decarbonize the economy, diversify supply, and ensure affordability.[31] According to Bulgartransgaz EAD, there was a very high energy dependency in Bulgaria in 2016 regarding natural gas supplies 97.7%, a figure that, based on forecasts, was expected to remain more or less the same for the foreseeable future.[32] The country's reliance on coal and its crippling dependence on imports, particularly from the Russian federation, are key impediments to its effective transition towards a clean and sustainable energy market.

e. Main Market Participants

The Bulgarian power market has historically been dominated by state-owned producers, although there has been a steady stream of reform and liberalisation since 1999. Bulgarian Energy Holding ('BEH') is the holding company for a number of companies principally engaged in the generation of electricity, supply and transmission, supply and storage, natural gas transmission, and coal mining.[33] BEH generates 60% of the electricity in the country and is 100% state-owned.[34] Soon after reform of the energy sector began in 1999, BEH was split into six independent generators, a national transmission system operator (TSO) and seven regional distribution system operators (DSO).[35]

Bulgartansgaz EAD and Bulgargaz EAD are subsidiaries of BEH, with the former being the largest Bulgarian natural gas distribution company, and the latter a natural gas transmission/storage company and the country's current TSO.[36] Most of the gas purchased by Bulgargaz EAD, the only regulated public provider, is imported from Russia under

[31] *New Energy Strategy, Focused on Natural Gas, Vital for Bulgaria to Hit 2030 Climate Targets*, Baringa (May 2018), https://www.baringa.com/getmedia/d376bbf6-2c0d-4f7b-a2cb-39b334ed0554/New-energy-strategy-focused-on-natural-gas-vital-for-Bulgaria-to-hit-2030-climate-targets-FINAL_1/.

[32] *Ten-Year Network Development Plan of Bulgatrangaz EAD, 2017-2026*, Bulgartransgaz EAD, https://www.bulgartransgaz.bg/files/useruploads/files/amd/tyndp%202017/TYNDP_2017-V.63.F.en.pdf.

[33] Kostadin Sirleshtov and Raya Maneva, *CMS Guide to Electricity: Bulgaria*, CMS Legal, https://eguides.cmslegal.com/electricity/1.0/print.aspx?chapter=bulgaria.

[34] Kostadin Sirleshtov and Raya Maneva, *CMS Guide to Electricity: Bulgaria*, CMS Legal, https://eguides.cmslegal.com/electricity/1.0/print.aspx?chapter=bulgaria.

[35] Kostadin Sirleshtov and Raya Maneva, *CMS Guide to Electricity: Bulgaria*, CMS Legal, https://eguides.cmslegal.com/electricity/1.0/print.aspx?chapter=bulgaria.

[36] *Id.*

long-term contracts with Gazprom. This is problematic when it comes to the country's prospects of diversifying its energy sources.[37] Only approximately 15% of the gas purchased by Bulgargaz comes from a local producer.[38]

BEH also holds the capital of Natsionalna Elektricheska Kompania EAD ('NEK'), a single-owned joint-stock electric company, which was split into six independent generators, a national transmission system operator (the current TSO is the Electroenergien Systemen Operator ('ESO')), and seven regional distribution system operators ('DSOs').[39] NEK's main activities include the generation, purchase, sale, export and import of electrical energy.[40] Most of the government-owned electricity generation and distribution businesses were privatised between 2002 and 2012.[41] The liberalised electricity market in the country is still in its infancy; despite the formal implementation of the Third Energy Package in Bulgarian legislation in 2012, the final unbundling of the TSO from NEK was only effected in February 2014.[42]

The relationship between the main market participants and the rate of unbundling demonstrate that despite the steady stream of reforms and gradual liberalisation of the market, in practice there are obviously clear barriers to achieving full liberalisation. This could be partly due to the fragmented nature of the energy sector in the country, relevant issues surrounding supply monopoly, the interdependence between state and private interests, and more problematically, strong state influence over key participants in the market.

f. Governance System: Government Approach to Smart Grids

The energy governance system in Bulgaria has been plagued by a number of serious issues throughout the years, such as widespread corruption at all levels of the energy system, mismanagement of state-owned energy enterprises, and irregularities associated with public procurement contracts.[43] The existence of widespread problems such

---

[37] *Ten-Year Network Development Plan of Bulgatrangaz EAD, 2017-2026*, Bulgartransgaz EAD, https://www.bulgartransgaz.bg/files/useruploads/files/amd/tyndp%202017/TYNDP_2017-V.63.F.en.pdf.

[38] Bulgartransgaz *at 15.*

[39] *Guide to Electricity: Bulgaria*.

[40] *Id.*

[41] *Id.* Three distribution regions in western Bulgaria, including the region of Sofia, are owned and operated by CEZ, two distribution regions in northeast Bulgaria are owned and operated by Energo-Pro, and two distribution regions in southeast Bulgaria are owned and operated by EVN. EVN and Energo-Pro own 100% of the shares of the subsidiary companies, while CEZ owns over 90%. Id.

[42] *Id.*

[43] *Energy Sector Governance and Energy Security in Bulgaria*, Centre for the Study of Democracy (2014), http://www.csd.bg/artShow.php?id=16984.

as political corruption has had a severe impact on energy governance and energy security in the country. Regulatory changes implemented after a prolonged period of political unrest in 2013-2014 were aimed at removing political influence over regulators and conflicts of interest within key energy institutions.[44] According to the International Energy Security Risk Index, the country's energy security risk score has been gradually improving since 2012, which suggests that the relevant changes have been effective in addressing some of the key problems contributing to bad energy governance.[45] However, significant problems remain, which cannot simply be washed away by an array of regulatory changes. The Centre for the Study of Democracy reports that thus far, corruption and waste in the public sector and within energy policies has cost Bulgarian consumers at least a third of the energy price increases they have experienced, excluding the long-term effects of bad policy choices and monopoly rents.[46]

Bulgaria has not yet decided to roll out smart meters to all customers.[47] Even though there are no plans of a mandatory roll-out, the country's DSOs are gradually deploying smart meters to selected customers.[48] "EVN Bulgaria plans to invest 68 million levs over a period of 3 years to deploy 373, 000 smart meters in its service area."[49] According to the latest version of Bulgaria's energy strategy, main efforts in the field of developing the energy sector are directed towards energy efficiency, energy self-sufficient buildings, electric road vehicles, renewable energy and building of smart grids.[50] Even though the implementation of smart grids is clearly a component of the government's energy strategy, it is not a priority at present. It is not clear which institution is in charge of smart grids, and there are no particular projects related to smart grid

[44] *International energy Security Risk Index*, Global Energy Inst., https://www.globalenergyinstitute.org/international-energy-security-risk-index.

[45] *International energy Security Risk Index*, Global Energy Inst., https://www.globalenergyinstitute.org/international-energy-security-risk-index.

[46] *A Roadmap for the Development of the Bulgarian Electricity Sector within the EU until 2050: Focus on Fundamentals,* Centre for the Study of Democracy, https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=2ahUKEwjv5L6ZrJrgAhWmUxUIHUXyC1MQFjACegQIBxAC&url=http%3A%2F%2Fwww.csd.bg%2FfileSrc.php%3Fid%3D23263&usg=AOvVaw065Xjk0VQz3lo4hLTLQcEz.

[47] *My Smart Energy*, EDSO for Smart Grids (2018), http://my-smart-energy.eu/my-country/bulgaria#country-area.

[48] *Smart Metering in Europe,* Cision, PR Newswire, https://www.prnewswire.com/news-releases/smart-metering-in-europe-300541546.html.

[49] *My Smart Energy*, EDSO for Smart Grids (2018), http://my-smart-energy.eu/my-country/bulgaria#country-area.

[50] *European Network for Research, Good Practice and Innovation for Sustainable Energy, Country Report: Bulgaria*, Energise, http://www.energise-project.eu/sites/default/files/content/D2.5_Bulgaria.pdf.

implementation specifically.[51] This is perhaps unsurprising, as the rising level of household 'energy poverty' is among the biggest challenges to the government's energy efficiency policy, making it a priority for the government.[52] Thus, current policies focus on cutting down household energy consumption, stimulating energy savings, reducing greenhouse gas emissions, promoting green transport, and introducing more energy-efficient habits among consumers.[53]

g. Electricity Market

i. Regulatory Framework

At the national level the main statutory instrument regulating the electricity market is the Bulgarian Energy Sector Act (previously the 'Energy Act').[54] The Act is supplemented by the Energy Efficiency Act and the Renewable Energy Sources Act.[55] The statutory framework in place is complemented by regulations and mandatory rules issued by the Energy and Water Regulatory Commission (EWRC). The Renewable Energy Sources Act introduced a feed-in tariff, which supports renewable energy generation in the country and implements an obligation to purchase and dispatch electricity from renewable sources.[56] Plant operators are contractually entitled against the grid operator to the connection of a renewable energy plant to the grid,[57] and to the purchase of their electricity.[58] In an effort to further liberalize the market, the right to priority connection was abolished by the Energy from Renewable Sources Act.[59] In addition, plant operators are statutorily entitled against the grid operator to the expansion and development of the grid to enable the connection of a renewable energy plant to the grid .[60]

A number of legislative and regulatory amendments have been

[51] *See generally, Id.*

[52] *See generally, Id.*

[53] *Id.*

[54] *Id* at 11.

[55] *See*, Bulgarian Ministry of Energy, www.me.government.bg.

[56] Ivana Naydenova *Legal Sources on Renewable Energy*, RES LEGAL (Jan. 23, 2019), http://www.res-legal.eu/search-by-country/bulgaria/tools-list/c/bulgaria/s/res-e/t/promotion/sum/112/lpid/111/.

[57] Energy Sector Act, SG 107/9, art. 116, (2003), *amended by* SG 83/9 (2018) (Bulg.), https://www.me.government.bg/en/library/energy-act-256-c25-m258-1.html (previously called "Energy Act.").

[58] Energy from Renewable Sources Act, SG 35/3, art. 17, (2011), *amended by* SG 38/8 (2018) (Bulg.), https://www.me.government.bg/en/library/energy-from-renewable-sources-act-167-c25-m258-1.html.

[59] Navdenova, *supra* note 42. *See also* Energy from Renewable Sources Act.

[60] Energy Sector Act, art. 116.

introduced by consecutive governments, aimed at implementing EU legislation and transforming the regulatory framework of the electricity market. For example, recent amendments have been implemented with a view towards improving the governance structure and functions of the EWRC, in an attempt to increase its financial independence and objectivity.[61] The high number and frequency of amendments, however, render the electricity market unpredictable, a trait that makes it unattractive to potential investors looking for stability. A stable legislative framework is necessary for the existence and functioning of a steady market that attracts investors, which in turn is a prerequisite for the effective implementation of smart grids.

The abovementioned problems are further compounded by existing "burdensome administrative and regulatory procedures," which prevent the "widespread implementation of decentralized RES-based power generation capacity."[62] According to the Centre for the Study of Democracy, "Bulgaria has so far failed to unlock its decentralized power generation potential of at least 5 GW or around 40% of the current installed power generation capacity in the country due to governance deficits related to the issuing of permits, the connection to the District System Operators (DSO)s' grids and the allocation of subsidized feed-in tariffs."[63]

The Centre for the Study of Democracy further reports that current laws "do not distinguish between small and large RES producers, [hence] giving advantage to multi- million investments in utility-scale RES capacities, [which comes] at the expense of energy democratization."[64] Administrative requirements for households and small businesses are similar to those for industrial-scale producers; this makes it more difficult for small RES-producers and households to install renewable energy facilities, and subsequently prevents the decentralization of power generation.[65] Another related issue is the absence of specific provisions in the national legislation for prosumers or energy cooperatives.[66] Projects built on arable land enjoy an advantage, "as they do not have to fulfill some of the administrative procedures

[61] *Important Changes to the Bulgarian Energy Act*, CMS Law Now (May 14, 2018),http://www.cms-lawnow.com/ealerts/2018/05/important-changes-to-the-bulgarian-energy-act.

[62] *Roadmap to a Decarbonised Electricity Sector in South East Europe and in Bulgaria,* Ctr. for the Study of Democracy, 3 (Mar. 2018), https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwjo3dunvprgAhXmSxUIHZjPA3wQFjAAegQICRAB&url=http%3A%2F%2Fwww.csd.bg%2FfileSrc.php%3Fid%3D23431&usg=AOvVaw0yZuv_w8w8-MXswtlPbbPd.

[63] *Id*.

[64] *Id*.

[65] *Id*.

[66] *Id.*

related to the modification of existing buildings when rooftop projects are implemented."[67] "[E]xisting cross-subsidies in the regulated electricity sector" have a negative impact on small RES investments, which "make consumption from the grid way more attractive than investment in [personal] generation" of electricity.[68]

It is obvious that a number of changes are needed in the electricity regulatory framework if smart grids are to be successfully implemented in Bulgaria. For example, administrative requirements for small RES producers need to be relaxed and made less onerous and complicated; this will enable the gradual growth of a prosumer-oriented electricity market, as it will make it easier for small and individual producers to understand and work around the administrative rules relating to small-scale RES production. However, further amendments to the regulatory framework need to be introduced gradually, as a further string of regulatory amendments could harm investment in the energy market and contribute to the existing instability and public mistrust in energy institutions in the country.

ii. Liberalisation of the Market and the Status of Unbundling in the Country

In relation to unbundling and the restructuring of electricity generation, transmission, and system operation, Bulgaria chose the Independent Transmission Operator model (ITO), in which the transmission operator and network assets are separated into a legal entity within the vertically integrated undertaking, which carries out the generation and supply activities. "In pursuance of the requirements of Directive 2009/72/EC, after the performed unbundling procedure for Electricity System Operator EAD (ESO EAD) from Natsionalna Elektricheska Kompania EAD (NEK EAD) in 2014, ESO EAD became an owner and operator of the whole electricity transmission network in Bulgaria."[69] "ESO EAD is a certified independent transmission operator certified by EWRC Decision in 2015…."[70] The distribution operators were also legally unbundled, but "given that there [was] only one licensed supplier in each area (the supply branch of their vertically integrated undertaking), they [had] no choice but to grant them access to the network, [effectively] creating a monopoly."[71] Historically, Bulgaria

[67] *Id*.

[68] *Id*.

[69] Ivan. N. Ivanov, *Annual Report to the European Commission*, Energy and Water Reg. Commission 9 (July 2017), http://www.dker.bg/PDOCS/EWRC-Report-EC-ACER-2017-en.pdf.

[70] *Id.*

[71] Ruslan Stefanov et al., Energy Sector Governance and Energy

has operated a 'single buyer' model, which means that the single buyer —in this case NEK—buys large quantities of electricity from producers and then sells it to end suppliers, who in turn sell it to smaller and smaller customers. It is obvious how this can stifle competition. The government has now announced its plans to remove the 'single buyer' model; "the National Electricity Company ("NEK"), will no longer be acting as the single off-taker paying the produced energy at feed-in-tariffs ("FiT")."[72]

Liberalization of the electricity market has been slow. "Challenges in the…sector include a highly concentrated market structure, persistence of long-term power purchase agreements and [the] usage obligations for indigenous coal."[73] Although changes were implemented with a view to increasing the independence and transparency of the EWRC, for example see above, "some of its post-reform decisions [have] raised concerns regarding its independence from the government…and state-owned companies in the…sector."[74] "[P]olitical pressure to preserve the household consumer electricity prices [has] affected and continues to affect regulatory decisions, despite the aims of the reform."[75] "The country's regulated electricity market has declined [considerably] over the past decade"; according to the regulator, "in 2016 the free market made up 52% of the total market."[76] Big companies have to buy energy on the free market, with smaller companies doing it "voluntarily because of the cheaper prices."[77]

However, although all companies have been required to sell their electricity on the local energy exchange since January 2018, most producers already have long-term contracts and feed-in tariffs that prevent this from happening.[78] The largest coal power plants, central

---

(In) Security in Bulgaria 79-80 (Ognian Shentov et al. eds., Ctr. for the Study of Democracy rev. ed. 2014), https://cdn.csd.bg/fileadmin/user_upload/publications_library/files/22314.pdf.

[72] *Regulatory Changes in the Bulgarian Electricity Sector*, Dinova, Rusev & Partners, 1 (Mar. 2018), https://www.drp-legal.com/images/pdf/Legal%20alert%20DRP_180316.pdf.

[73] European Parliament Parliamentary Questions E-000882/2018, Answer Given by Mr. Arias Cañete on Behalf of the Commission (Apr.,20, 2018), http://www.europarl.europa.eu/doceo/document/E-8-2018-000882-ASW_EN.html?redirect.

[74] Iliya Grozdanov, Dinova, Rusev & Partners, Electricity Regulation in Bulgaria: Overview 2 (2019), Westlaw 2-523-7911, https://uk.practicallaw.thomsonreuters.com/2-523-7911?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1.

[75] *Id.*

[76] *Bulgaria Accelerates Energy Market Liberalisation*, The Economist (Feb. 6, 2018), http://www.eiu.com/industry/article/416471025/bulgaria-accelerates-energy-market-liberalisation/2018-02-06.

[77] *Id.*

[78] *Id.*

heating companies, and renewable energy producers sell their electricity to the state-owned electricity firm, NEK, at preferential prices.[79] At the end of 2017 the prices offered on the free market surged—in some cases by 40-50%.[80] This led to protests by the four largest business organizations, which incentivized the government to speed up the liberalization of the electricity market. The main goal at present is to move all producers onto the free market, but this process is complicated by the existence of such long-term contracts; any changes to the current contractual arrangements could lead to suits against the government for breach of contract.[81] The government is already expected to cancel its Power Purchase Agreements (PPA's) with some coal-fired plants, who will now have to sell their energy on the free market.[82] These will be replaced by contracts for premium (CP).[83]

A fully liberalized electricity market is a key component of decentralization and democratization, and is ultimately a prerequisite for the successful implementation of smart grids. The government needs to take a more active role in pushing forward the liberalization process. An open and transparent consultation process with key organizations and stakeholders could help to address some of their concerns, increase trust in the government, and attract further investment. A detailed consultation process could also help to identify various incentives and individual interests that could be exploited in persuading the relevant producers and suppliers to renegotiate the terms of long-term contracts and feed-in-tariffs that are currently stifling the process of reform, where those cannot be successfully cancelled without legal repercussions and/or cannot be replaced with other types of agreements, as envisaged by the government. Finally, there needs to be a clear dividing line between the regulator, the government, and private actors. Although changes have already been implemented in this field, the regulator must not only be objective and independent, it must also be *seen* to be objective and independent, to ensure that public trust is restored.

---

[79] *Id.*

[80] *Id.*

[81] *Id.*

[82] Ivaylo Mihaylov, *Bulgaria to cancel PPAs with power plants of AES, ContourGlobal by end 2018 MP,* SeeNews (May 15, 2018), https://seenews.com/news/bulgaria-to-cancel-ppas-with-power-plants-of-aes-contourglobal-by-end-2018-mp-612579.

[83] *Regulatory Changes in the Bulgarian Electricity Sector*, DINOVA RUSEV & PARTNERS (Mar. 2018), https://www.drp-legal.com/images/pdf/Legal%20alert%20DRP_180316.pdf.

iii. Energy Security Dimension

According to the EU Commission, Bulgaria's energy security has been among the most vulnerable among Member States.[84] Key issues that have affected the country's energy security over the years include delays in the construction of critical infrastructure, over-reliance on lignite coal, the slow development of a transparent wholesale electricity market, poor governance, and lack of innovation.[85] In September 2016, proposals were made that the Central East South Europe Gas Connectivity (CESEC) High Level Group, of which Bulgaria is a member, should be extended to electricity, covering issues such as electricity trading and market coupling, coordinated planning and development of power grid infrastructures, and renewable energy and energy efficiency.[86] CESEC has been a platform for coordinating efforts to facilitate cross-border projects and diversity supply in the gas sector; its application to the electricity market could enable the country to increase its interconnectivity, participate in additional projects, and potentially attract further investment opportunities. Bulgaria's current electricity interconnections include two 400kV lines with Turkey, two 400kV lines with Romania, one 400kV line with Greece, and one 400kV line with Macedonia.[87]

However, the electricity interconnection level of Bulgaria was assessed at 7.1% in 2017, which is well below the 2020 10% target.[88] It is believed that the country is on its way to reaching the 10% target by 2020, through the completion of Projects of Common Interest (PCI) currently on the way, particularly the interconnection between Maritsa East 1 in Bulgaria and Nea Santa in Greece. The project envisages the construction of a new AC 400 kV single-circuit interconnector (OHL) with a length of 151 km, composed of 122 km on Bulgarian territory and 29 km on Greek territory, and a capacity of 2000 MVA between Maritsa East (BG) and Nea Santa (EL) onshore.[89] The cluster aims to increase

[84] *Assessment of country performance and opportunities from the Energy Union*, European Commission https://ec.europa.eu/commission/sites/beta-political/files/bulgaria-benefits_of_the_energy_union_en.pdf (last visited Mar. 29, 2019).

[85] *Id.*

[86] *See Energy Union Factsheet: Bulgaria, Third Report on the State of the Energy Union*, European Commission (Nov. 23, 2017), https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-bulgaria_en.pdf.

[87] *See* Kostadin Sirelshtov and Raya Maneva, *CMS Guide to Electricity: Bulgaria*, Cameron McKenna Olswang LLP, https://eguides.cmslegal.com/electricity/1.0/bulgaria.html (last visited Mar. 29, 2019).

[88] *See Energy Union Factsheet: Bulgaria, Third Report on the State of the Energy Union*, European Commission (Nov. 23, 2017), https://ec.europa.eu/commission/sites/beta-political/files/energy-union-factsheet-bulgaria_en.pdf.

[89] *Projects of Common Interest*, Energy and Water Regulatory Commission,

the Grid Transfer Capacity at the Greece-Bulgaria border in the North-South direction by means of the construction of the new interconnection between Bulgaria and Greece and other enhancements in the South part of the 400kV Bulgarian transmission system.[90] It is estimated that the interconnection will increase Bulgaria's interconnectivity to 18%, it will enhance energy security by increasing the flow of renewable energy between the two countries, accelerate market coupling, and increase competitiveness.[91] Other current PCIs in the electricity sector include the hydro pump storage in Yadenitsa, and an internal line between Dobrudja and Burgas which is part of the Bulgaria-Romania interconnector.

The vulnerabilities in Bulgarian electricity interconnections are far fewer than those in the gas sector, where the country is highly dependent on Russian gas. A number of issues arose in the electricity sector during the winter of 2017, when unusually low temperatures in the area forced the Bulgarian government to impose a ban on electricity exports in order to meet the rising domestic demand at the time.[92] The cold weather conditions highlighted weaknesses in interconnections in Southeast Europe, such as the need for stronger cooperation between TSO's and the vulnerabilities of existing interconnections in the face of unusual or unprecedented weather conditions.

In relation to the integration of renewable energies into the grid, the country is still facing the problem of overcapacity in the electricity market.[93] This can be resolved through an increase in transmission capacity and grid expansion, by encouraging and attracting investment in the renewable energy sector. As seen above, however, there are a number of issues which stifle investment opportunities in the country. Dealing effectively with the problem of overcapacity is imperative, as it will enable further integration of renewable energies into the grid.

---

http://www.dker.bg/en/projects-of-common-interest.html (last visited Mar. 29, 2019).

[90] *See Cross-Border Cost Allocation Decision between the Regulatory Authority for Energy and the Energy and Water Regulatory Commission for the Project of Common Interest 3.7.1 for interconnection between Maritsa East 1 (BG) and Nea Santa (GR)*, Energy and Water Regulatory Commission and Regulatory Authority for Energy (Aug. 8, 2018), http://www.dker.bg/uploads/en/Projects-of-Common-Interest/EWRC-RAE-common-decision-PCI-3.7.1.pdf.

[91] *Id.*

[92] *EU Electricity Markets in January and February 2017*, S&P Global Platts (Dec. 20, 2017), https://ec.europa.eu/energy/sites/ener/files/documents/platts_report_final_version_rrr.pdf.

[93] *Bulgaria Power Generation*, United States Department of Commerce, (last published Aug. 23, 2017), https://www.export.gov/article?id=Bulgaria-Power-Generation-Oil-and-Gas-Renewable-Sources-of-Energy-and-Energy-Efficiency.

h. Smart Metering Systems

Smart metering systems are still in their infancy in Bulgaria. It is the responsibility of the EWRC to assess the economic feasibility of introducing smart metering systems in the country. There is, however, limited official information on smart meters in Bulgaria, and there is currently no evidence of existing roll-out plans or prospective legislation dealing with the deployment of smart meters. There are a number of other pressing issues and more immediate problems which the government needs to tackle prior to directing significant efforts and investment to this aspect of energy policy, such as the modernisation of electricity networks, energy poverty, and the introduction of an efficient and effective regulatory scheme that will support future roll-out plans. Efforts are underway to modernise the electricity transmission networks in Bulgaria, especially interconnectors with neighbouring countries. A number of projects aimed at the modernization of electricity transmission networks in the country have been implemented in recent years;[94, 95] progress is slow but steady. A particular issue which highlights underlying problems in electricity transmission networks in the country is the restricted access of Roma people to basic commodities, such as electricity. According to official sources, Roma people amounted to nearly 5% of the Bulgarian population in 2011.[96] This percentage is believed to be higher now. Roma people live in segregated areas, where they face social isolation due to poor infrastructure and low level of accessibility to electricity and water.[97] Apart from the issue of energy poverty, this further highlights the lamentable state of electricity transmission networks in some parts of the country, and sends a clear message to policy-makers that modernisation is urgently needed to ensure widespread transmission.

Although a number of smart meters have already been introduced in Bulgaria, those have only been put in use for a remote metering of power consumption.[98] Bulgaria has not planned a mandatory rollout of

---

[94] *See BSTDB Invests EUR 50 million in Modernization of Bulgarian Energy Holding*, Black Sea Trade & Development Bank, (Oct. 17, 2018), https://www.bstdb.org/news-and-events/press-releases/press-releases_4549.htm.

[95] *See INTERVIEW EBRD Plans To Invest 1.5 Bln Euro in Renewable Energy and Energy Efficiency Projects in CEE*, Renewables Now (Nov. 19, 2019), https://renewablesnow.com/news/interview-ebrd-plans-to-invest-15-bln-euro-in-renewable-energy-and-energy-efficiency-projects-in-cee-221195/.

[96] *Bulgaria: Situation of Roma, including access to employment, housing, healthcare, and education; state efforts to improve the conditions for Roma (2013-October 2015)*, Refworld (last updated mar. 29, 2015), https://www.refworld.org/docid/565bf40f4.html.

[97] *Id.*

[98] *CEZ installs smarts meters in Bulgaria*, Thomas Reuters (Oct. 13, 2011), https://www.reuters.com/article/cez-bulgaria-idAFL5E7LD2YP20111013

smart meters, but the country's DSOs have been gradually deploying them to selected customers.[99] Recent studies indicate that Bulgaria has not yet submitted any evidence of a cost benefit analysis and/or any results of such.[100] There is currently no official data available regarding the roll-out status by 2020, the expected diffusion date, deployment strategy, details about responsible parties, or any details regarding financing. This lack of information is telling and it sends a loud message to policy makers: the country is not there yet.

i. Demand Response

The Bulgarian electricity market does not include Demand Response yet, as this is contingent on the full liberalization of the electricity market, a process that has been very slow and fraught with complications.[101] Regulatory changes introduced to the Energy Act in 2013 and 2015 were driven mainly by political pressure to reduce electricity prices, address the grave financial situation of the National Electricity Company, complete the liberalization of the electricity market, and transpose the Energy Efficiency Directive.[102] Under these changes powers were moved from the Ministry to the EWRC and among other things, new electricity trading mechanisms were introduced.[103] Even though demand response is not dealt with in this policy, some requirements in Article 14 and Article 15 of the Energy Efficiency Directive were transposed with the Energy Act.[104] Voluntary agreements exist which can form the basis for Demand Response actions; these can be concluded between the Sustainable Energy Development Agency and the energy sales companies or the owners of industrial systems.[105] In 2016 there were 4 such agreements with the biggest electrical supplying companies. It is arguable that such voluntary agreements cannot have the same impact as government-mandated policies on demand response.[106]

---

[99] Cision, PR Newswire,Smart Metering in Europe, (Oct. 23, 2017),https://www.prnewswire.com/news-releases/smart-metering-in-europe-300541546.html.

[100] UK Government, Energy market investigation, (2016), Annex II: What is the evidence from the international experience of smart meters, https://assets.publishing.service.gov.uk/media/56ebdf6540f0b60385000002/Appendix_5.2_-_What_is_the_evidence_from_the_international_experience_of_smart_meters.pdf.

101 European Commission, JRC Science for Policy Report, Demand Response Status in EU Member States (2016), http://publications.jrc.ec.europa.eu/repository/bitstream/JRC101191/ldna27998enn.pdf

[102] *Id.*

[103] *Id.*

[104] *Id.*

[105] *Id.*

[106] *Id.*

The relevant domestic legislation introduces dynamic tariffs for end users to enable them to optimize their electricity consumption, such as tariffs which take into account the period in which energy is used and tariffs for critical peak load periods which are accompanied by discounts for energy consumption during peak periods.[107] The EWRC, which is in charge of assessing the economic feasibility of smart metering, is guided by the principle that electricity transmission and distribution prices should allow increased end-user involvement in the improvement of efficiency of the power system by optimizing consumption. It also makes efforts to encourage transmission and distribution system operators to offer system services for electricity demand response, demand management and distributed generation on organized electricity markets and improve the efficiency in networks design and operation.[108]

Bulgaria has not adopted legislation to support Demand Response yet. Although there are bilateral contracts between producers and consumers which were concluded before the relevant EU requirements were introduced, these involve major producers and consumers and do not constitute real Demand Response. Full liberalization of the electricity market, which was anticipated to have occurred as early as 2016, was expected to open up the market to demand response. However, the slow process of liberalization has made this process more difficult.

j. Data Protection

i. Current Legal Framework

The General Data Protection Regulation (Regulation (EU) 2016/679) ("GDPR") came into force in 2016 and became directly applicable in all EU Member States on May 25, 2018. There are more than 50 areas covered by GDPR where Member States are allowed to legislate differently in their own domestic legislation.[109] Bulgaria implemented the EU Data Protection Directive 95/46/EC with the Personal Data Protection Act, promulgated in the State Gazette No. 1 of January 4, 2002, as amended periodically ('Act'). The Act came into force on January 1, 2002. The last time the Act was amended was by the State Gazette, Issue No. 103 of December 28, 2017, which came into force on January 1, 2018.[110]

---

[107] *Id.*

[108] Ministry of Energy, Bulgaria, National Energy Efficiency Action Plan 2014-2020, (July 2017), http://www.seea.government.bg/documents/TRA%20BG%20NEEAP%202017%20EN.pdf

[109] DLA Piper, Data Protection Laws of the World Handbook (2018) https://www.dlapiperdataprotection.com

[110] *Id.*

On April 4, 2018, a draft law amending and supplementing the Personal Data Protection Act ('Draft Law') was introduced for public discussion.[111] This complements the GDPR by providing regulation to matters in the field of personal data processing that have not been explicitly covered by the GDPR, or where the GDPR has left room for the exercise of legislative discretion.[112] As the regulation has direct effect and is applicable in all EU Member-States without the need of adopting a designated act, the Bulgarian legislator adopted the approach of directly referring to and implementing the GDPR without repeating the core provisions of the regulation in the Draft Law.[113] The Commission for Personal Data Protection ('PDPC') is designated as the sole supervisor responsible for protecting the fundamental rights and freedoms of individuals with regard to the processing and free movement of personal data within the European Union.[114] The Draft Law regulates the legal remedies in cases of violation of personal data law, the accreditation and certification in the field of personal data protection, the administrative liability and the administrative measures in cases of violations. On 18 July 2018, the Council of Ministers submitted the Draft Law ('Bill') to the Bulgarian Parliament for a vote.[115] The Bill is still sitting with Parliament.

ii. Third Party Control

The new legislation introduces more stringent controls on third party data processors, who are now obliged to comply with the GDPR, although to a lesser extent than data controllers. The relationship between a controller and a data processor must be governed by a legal instrument that is binding on the controller, or by a data processing agreement provided under Article 28 GDPR, defining the scope of the duties assigned by the controller or data processor.[116] Under the current Bill the PDPC will not be notified of standard contractual clauses concluded by controllers. Unless a transfer of data is conducted to a country or organisation that ensures an adequate level of data protection, data may only be transferred if the legislation in the receiving country or an

[111] *Id.*

[112] *Id.*

[113] *Id.*

[114] *Id.*

[115] CMS Legal, R. Maneva, M. Alexandrova, and T. Yosifova, Bulgarian Parliament to vote on Personal Data Protection Amendments Bill (July 24, 2018), https://www.lexology.com/library/detail.aspx?g=269eb6ce-dfba-4ab3-aea1-afeacbb09274 .

[116] CMS Law, Data Law Navigator: Bulgaria, (2018), https://cms.law/en/INT/Publication/Data-Law-Navigator/Bulgaria .

international agreement between the receiving country and Bulgaria, or some other regulation, provide for appropriate measures and guarantees of data protection, or where the data controller in question has assessed the transfer and concluded that proper guarantees exist.[117] In the latter scenario, the controller must document the transfer, notify the PDPC, and provide additional information, if requested.

The implementation and successful operation of smart grids requires the active participation of a number of actors, whose role in the process may not be entirely clear at first. While the legislation defines the role of 'data controller' and 'data processor,' it is not yet clear whether some of the potential actors in the chain of supply and transmission will be classified as 'data controllers,' 'data processors,' or simply third parties with some control and/or access to personal data. This could affect the efficiency of control exercised over such third parties. While it may be easier to identify data controllers and certain data processors, it may not be as easy or practical to precisely define the role of smaller intermediaries that don't quite fit the definitions provided for by the legislative scheme. Questions could also arise regarding the specific types of agreements that are needed to regulate the relationship between data controllers and data processors with other third parties whose role is less clear.

iii. The Effects of Smart Metering on the Current Legal Framework

The introduction of smart metering might require the clarification of certain terms and definitions introduced by the GDPR as adopted in the current version of the Bill. As smart metering produces vast amounts of data, it may be necessary to clarify the extent to which such data falls under the definition of 'personal data' as defined under the GDPR. For example, data on the daily production and consumption of energy by a prosumer could potentially fall under the definition of 'personal data' if it is inextricably linked to the individual who is responsible for the production and consumption of that energy. In addition, as seen above, there may be further clarification needed on the role and extent of the duties of certain third parties involved in the operation of smart grids.

[117] CMS Legal, R. Maneva, M. Alexandrova, and T. Yosifova, (2018), Bulgarian Parliament to vote on Personal Data Protection Amendments Bill, https://www.lexology.com/library/detail.aspx?g=269eb6ce-dfba-4ab3-aea1-afeacbb09274.

iv. Consumer Protection

Like all EU Member States, Bulgaria is covered by EU Consumer Directives put in place to protect consumers. There is additional protection at the national level, which has been introduced through a number of legislative Acts and various regulations aimed at bolstering already existing consumer protections. The Law On Consumer Protection guarantees a number of safeguards, including the right of information regarding goods and services, the right of legal defense against risks of acquiring faulty goods, a right of defense with respect to misrepresentation and guarantees of fitness for use, the right of compensation, and mechanisms for the settlement of consumer disputes.[118] Further protection is provided by the Tourism Act, which regulates public relations connected to the process of carrying out electronic commerce. In May 2016, the Ministry of Energy announced a new mechanism for protection of vulnerable consumers of energy in Bulgaria, including financial, non-financial, and long-term measures.[119] The definition of vulnerable consumers was re-written to include three additional groups of vulnerable consumers to the already existing 17 groups covered by the targeted assistance for heating, which has been in effect since 2003. The added groups include elderly people over 70 years of age who live alone (whose income is derived solely from their pension), persons with over 90% reduced ability, and families with disabled children.[120]

Even though the introduction of consumer protection measures aimed at vulnerable consumers is a positive development in the field, the term 'energy poverty' is not defined in Bulgarian law, and there is no official strategy for eradicating it. The government needs to define the term and introduce more robust measures, such an official strategy on how to deal with poverty in the energy sector. The country's current anti-poverty strategy contains no specific provisions on energy, which is clearly a highly problematic area. As Bulgaria is still lagging in terms of its policies and legislation, specifically aimed at smart grid implementation, it is still early to assess the efficiency of existing consumer protections in this context. However, what is clear is that a particularly vulnerable group of consumers is that of those who are mostly affected by energy poverty; this again highlights that the government needs to focus more immediately on tackling energy poverty and protecting those who are most susceptible to it.

---

[118] European Consumer Centre for Services, Bulgaria: Your consumer Rights, https://www.ukecc-services.net/BGycr.cfm .

[119] *Mechanism for Protection of Vulnerable Consumers in Bulgaria*, Eu Energy Poverty Observatory (Oct. 18, 2016), https://www.energypoverty.eu/news/mechanism-protection-vulnerable-consumers-bulgaria.

[120] *Id*.

v. Protection from Cyber Attacks

In October 2018, the Bulgarian parliament passed the Cyber Security Act, which implements EU Directive 2016/1148 ('NIS' Directive) for sustaining a high level of security for networks and information systems across the EU.[121] The Act has introduced a number of changes aimed at bolstering cybersecurity in the country. For example, the Act has created a unified legal framework in the field of cybersecurity, which will remove all or most of the complications associated with a fragmented system and will enable the relevant authorities to deal with cybersecurity threats more efficiently. The Act further establishes competent authorities whose role and functions have been defined, and regulates the network and informational security of the administrative authorities by setting and controlling the requirements that must be met to ensure network security.[122] The Act also introduces fines for non-criminal non-compliance.

The introduction of the new Cyber Security Act is a positive development as it will enable a smoother deployment of smart meters in Bulgaria. As the Act requires Bulgarian-based operators of critical infrastructure to deploy state-of-the art technology and processes[123] in order to deal effectively with potential cyber-attacks, electricity distributors, suppliers, and transmission network operators will have to reorganize and modernize their systems in order to ensure compliance. As the legislation is still at its very early phase, it is not possible to accurately assess its effectiveness at this stage. However, the provisions of the Act have the potential to offer more robust protection through the introduction of fines, mandatory reporting requirements, and the requirement to keep thorough records of cyber-attacks, as well as the establishment of a national computer emergency response team and a national incident management structure tasked with responding to cybersecurity incidents.[124]

---

[121] *Bulgaria adopts new Cyber Security Act,* CMS Law-Now (Nov. 13, 2018), http://www.cms-lawnow.com/ealerts/2018/11/bulgaria-adopts-new-cyber-security-act.

[122] Maya Alexandrova, *Bulgaria to adopt new Cyber Security Act,* CMS Law-Now (July 13, 2018), https://www.lexology.com/library/detail.aspx?g=5a3b861f-fff1-4577-b157-12c3b081d2f7.

[123] *Mandatory Cyber Security Standards Apply to Operators of Critical Infrastructure, Digital and Public Service Providers in Bulgaria*, Kinstellar (Dec. 2018), https://www.kinstellar.com/insights/detail/822/mandatory-cyber-security-standards-apply-to-operators-of-critical-infrastructure-digital-and-public-service-providers-in-bulgaria?utm_source=Mondaq&utm_medium=syndication&utm_campaign=View-Original.

[124] *Data Law Navigator: Bulgaria*, CMS Law (Oct .8, 2018), https://cms.law/en/INT/Publication/Data-Law-Navigator/Bulgaria.

k. Electric Vehicles and Storage

i. Electric Vehicles

While Bulgarian businesses have been exploring the electric vehicles market, several changes are still needed to make the market more attractive to a wider population in the future. Current issues are the high prices (electric vehicles remain more expensive than traditional vehicles, which includes both the purchase price and the relevant insurance coverage), as well as the lack of sufficient power stations and charging systems throughout the country, which significantly restricts mobility. Even though a number of additional charging stations have recently been introduced in larger cities, the cost of introducing them is still very high. The government needs to focus more on securing funding for the deployment of electric vehicles in the public sector, such as the introduction of electric buses in cities where buses are the main mode of public transport.

There are currently 3,300,000 vehicles registered in Bulgaria.[125] The number of 'ultra-low emission' vehicles registered in the first quarter of 2017 was 241 (2 plug-in hybrid electric vehicles + 239 hybrid electric vehicles).[126] There are incentives in place for electric vehicles owners, such as preferential tax treatment and the waiver of parking fees in paid areas.[127] In addition, owners of certain types of electric vehicles are also exempt from paying the annual local tax for these types of vehicles.[128] Although the relevant incentives put in place by the government represent a step in the right direction, they only have an effect on a relatively small percentage of the population, predominantly those living in larger and well-connected cities, and those who already have a standard of living which is above average. Those living in urban areas and are on minimum wage or unemployed cannot, in any way, benefit from these incentives, as their priorities inevitably lie elsewhere.

Several legislative and regulatory changes aimed at providing tax and other benefits for the owners of electric vehicles were made to primary and secondary legislation, including changes to the Local Tax and Fees Act, the Road Traffic Act, the Spatial Development Act, and the Ordinance for the Design of the Communication-Transportation System of the Urbanized Territories. The National Plan for the Actions for the Promotion of the Production and Enhanced Implementation of Ecologic

[125] K. Sirleshtov, D. Dudevska, *CMS guide to Electric Vehicles: Bulgaria*, CMS Law (last updated Mar. 11, 2019), https://eguides.cmslegal.com/electric_vehicle#.

[126] *Id.*

[127] *Id.*

[128] *Id.*

Motor Vehicles, including Electricity Mobility in the Republic of Bulgaria, was adopted for the period 2012-2014. An inter-governmental work group was created in November 2017 to develop a national work program together with a road map for developing electricity mobility in Bulgaria up to 2025, with an extended horizon of 2030.

There are other measures in place aimed at introducing electric vehicles in the public sector and the provision of public services. For example, the National Trust Eco Fund manages the Climate Investment Project and the Promotion of the Use of Electric Vehicles Program.[129] The program provides grants for projects concerning the use of electric vehicles by public authorities. The Minister of Environment and Water distributes the relevant funds to state and municipal institutions.[130] The focus is predominantly on vehicles that may be used for public service activities, including: cleaning; maintenance of parks; social services; inspections; and ensuring the provision of in-town public transport in small settlements with small passenger flows.[131] The list of electric vehicles eligible for purchase under the program has also been significantly expanded.[132] Unlike incentives introduced for the promotion of personal use of electric vehicles, policies and incentives aimed at the public sector are more useful in the context of the current economic state of the country and will have an immediate and more lasting impact on a larger percentage of the population, including those who live in urban areas, and those who are more susceptible to poverty, as they are more likely to be dependent on certain public services, such as public transport. For example, the European Bank for Reconstruction and Development and the Green Energy Special Fund have extended a joint loan to Sofia Electrical Transport Company for the acquisition of electric buses and charging stations, which are to be deployed in 2019, contributing to efforts to make public transport more sustainable and environmentally friendly.[133]

ii. Storage

There are currently three operational pumped hydro storage projects in Bulgaria with a combined capacity of around 1.4 GW.[134] All the projects are operated by the National Electricity Company EAD. The

[129] *Id.*

[130] *Id.*

[131] *Id.*

[132] *Id.*

[133] Olga Rosca, *Electric Buses Coming to Sofia*, Eur. Bank for Reconstruction and Dev. (Oct.19, 2018), https://www.ebrd.com/news/2018/electric-buses-coming-to-sofia.html.

[134] Munir Hasan & Louise Dalton, *CMS Guide to Energy Storage: Bulgaria*, CMS Law (24 Apr. 24, 2018), https://eguides.cmslegal.com/energy_storage#.

largest of the projects, called Chaira PHPP, is the biggest underground plant in the Balkans. The National Electricity Company EAD is an active participant on the Bulgarian Independent Energy Stock Exchange, where it sells the electricity produced in Chaira.[135] Yadenitsa, a pumped storage project, is one of the projects of common interest in the country. The project was started by the National Electricity Company EAD in 1997 and was then put on hold in 2009 due to lack of financing.[136] The European Commission has decided to fund 50% of the project so it can finally be completed. The expected completion period is 7 years from 2015. The project is expected to increase the energy efficiency of Chaira PHPP, as well as extend the time it could operate at full capacity. [137]

A number of storage solutions are currently in the process of being developed. The Bulgaria market is actively trying to encourage the use of battery storage technologies. However, currently there are only a few small projects to cover the needs of the wind and solar projects, as these additional investments are not currently sufficiently competitive.[138] A private company called Monbat AD is a producer of such batteries in the Bulgarian market, but it still has not put in operation any significant battery storage projects.[139]

The AES Corporation, which is one of the leaders in the field of conventional and alternative energy sources, is the biggest investor in Bulgaria.[140] As part of its expansion, the company is planning to develop a battery storage project in Bulgaria.[141] In 2015, the company presented its proposal for the development of the battery storage technology in the country to the Minister of Energy.[142] The company has not yet started any specific projects, but it is anticipated that it will.[143] There are also a number of smaller projects where consumers utilize battery storage technology for domestic purposes, such as reducing the demand charges of large energy users.[144]

Energy storage is regulated under the Energy Act.[145] There is no separate legislative framework which governs electricity storage in the country.[146] Gas storage is specifically regulated by the Energy Act,

---

[135] *Id.*
[136] *Id.*
[137] *Id.*
[138] *Id.*
[139] *Id.*
[140] *Id.*
[141] *Id.*
[142] *Id.*
[143] *Id.*
[144] *Id.*
[145] *Id.*
[146] *Id.*

and it is subject to licensing and specific regulations.[147] In practice, developers of electricity storage projects over 5 MW must obtain a generation license and comply with the provisions of the Energy Act.[148] Recently the Energy Efficiency Agency has been renamed to Agency for Sustainable Energy Development ('ASED'), empowering it with additional functions related to renewable energy and energy storage.[149]

A number of legal and other challenges currently facing energy storage projects include the lack of revenue, the high prices of and administrative complications associated with licensing, the various regulatory changes, and the cross-subsidized electricity sector.[150] The various regulatory changes enacted since 2014 have introduced a cap on the electricity produced under the Feed-in-Tariff, and therefore this support mechanism no longer exists.[151] The fact that electricity prices are still cross-subsidized means that investors are less willing to invest in storage projects.[152] Storage is regulated by the EWRC, a body that is still in the process of regaining public trust.[153] This credibility stigma could be harming storage investment opportunities.

Storage projects receive funding from a variety of sources, including public, EU, and private funding from foreign investors or companies looking to develop such projects in the country (i.e. AES).[154] As seen above, there are plans for developing battery storage technologies, but these will mostly be funded by private companies,[155] thus any issues identified as harming investment opportunities need to be tackled before more such projects are brought to fruition.

II. Poland

a. General Overview

Massive investments in the energy sector are required to diversify the Polish energy mix, which is currently dependent on coal.[156] In this respect, it is worth discussing briefly the Polish investment climate. In 2015, Poland was considered the 5th most attractive investment

[147] *Id.*
[148] *Id.*
[149] *Id.*
[150] *Id.*
[151] *Id.*
[152] *Id.*
[153] *Id.*
[154] *Id.*
[155] *Id.*
[156] Warsaw Business Journal, Investing in Poland 24 (2017) https://ahk.pl/fileadmin/AHK_Polen/Publikationen/Investing-in-Poland-2017_wersja-elektroniczna.pdf.

destination in Europe, with 23 percent more Foreign Direct Investment (FDI) projects than the year before and with 15,485 workplaces created (3rd in Europe).[157] Additionally, Polish public debt is among the lowest in the whole of the EU at 52.5 percent of GDP while the unemployment rate is at 7 percent—slightly higher than that of Germany. [158] There are various factors that make the country competitive for investors and these include among others: its strategic position in the middle of Eastern and Western markets, its relatively low electricity price, availability of important facilities for investments, and lower labor costs.[159] Whereas the coal industry has attracted a lot of investments in the past, we note that the sector has been struggling in recent years.[160] In 2016, for instance, the Polish coal sector recorded nearly a PLN 2 billion net loss.[161] The poor performance of the coal sector is due to under-investments; difficult geological conditions; and closure of various mines, just to mention but a few.[162] New investments, however, may support an increase in Renewable Energy Sources (RES) including wind, solar and hydro. Investments in RES may also influence investments in electric vehicles and smart meters especially considering the global de-carbonization campaign and efforts taken both at the regional and national level to reduce greenhouse gas emissions.

b. Energy Profile

Poland has vast energy resources including both conventional and unconventional energy. Poland's energy mix is dominated by coal, which is the primary energy source for electricity generation.[163] The country hosted the 24th Conference of the Parties to the United Nations Framework Convention on Climate Change (COP24) in Katowice from 2-14th December 2018.[164] COP24 involved the most important climate talks and negotiations since the COP21 Paris Agreement which was reached in 2015.[165] It was at COP21 that world leaders agreed to make sure global warming stayed below 2 degrees Celsius above pre-industrial

[157] *Id.* at 2.
[158] *Id.* at 9.
[159] *Id.*
[160] *Id.* at 22.
[161] *Id.* at 23.
[162] *Id*.
[163] *Id*. at 23.
[164] Agenda for the Twenty Fourth Session of the Conference of the Parties, December 2018.
[165] Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 13, 2015, in Rep. of the Conference of the Parties on the Twenty-First Session, U.N. Doc. FCCC/CP/2015/10/Add.1, annex (2016) [hereinafter Paris Agreement].

levels.[166] Commitments were also made at COP21 to increase financing for climate action and the development of 'national climate plans' by 2020.[167] In the same spirit, COP24 focused on discussions of how to put the 2015 Paris Agreement into practice, including how governments will measure, report on and verify their emissions.[168]

Despite being the host of COP24, which aims at reducing greenhouse emission by reducing dependence on fossil fuels, Poland is heavily reliant on coal.[169] In 2015, Poland's total primary energy supply was dominated by coal (50.8%), oil (24.5%), gas (14.6%), wind (1.0%) and hydro (0.2%).[170] In the same year, gross power production increased to 164.8 TWh.[171] Additionally, hard coal fire power plants generated 79.9 TWh (48.4%) of electricity while lignite-fire power plants generated 52.9 TWh (32.1%).[172] Other sources of energy also contributed to the electricity generation including wind at 11.0 TWh (6.7%); solar at 0.04%; biofuels and waste at 6.1%; oil and gas at 5.1%; and hydro at 1.5%.[173] Poland is also among the countries in the EU with an independent energy sector, with a 28.6% energy import dependency which is far below the EU average of 53.3%.[174]

Diversification of the Polish energy mix is essential as it will improve the country's energy security and help to face unpredictability in time of energy transition. At the present, the Polish energy mix is the least diversified in the EU, as most of the installed capacity is provided by coal-fired conventional units.[175] Figures 2 and 3 give a summary of the installed capacity in the Polish energy system as well as electricity production as of 2017.

[166] Paris Agreement, *supra* note 138 at art. 2.

[167] Paris Agreement, Art. 2, 2015.

[168] United Nations, Draft Report of COP24, December 2018, https://unfccc.int/sites/default/files/resource/l01_5.pdf.

[169] Warsaw Business Journal, *supra* note 132d.

[170] European Association for Coal, *Poland* (2017), https://euracoal.eu/info/country-profiles/poland/.

[171] *Id*.

[172] *Id*.

[173] *Id.*

[174] *Id*.

[175] Forum Energii, *Energy Transition in Poland* (2017) http://forum-energii.eu/en/analizy/polska-transformacja-energetyczna.

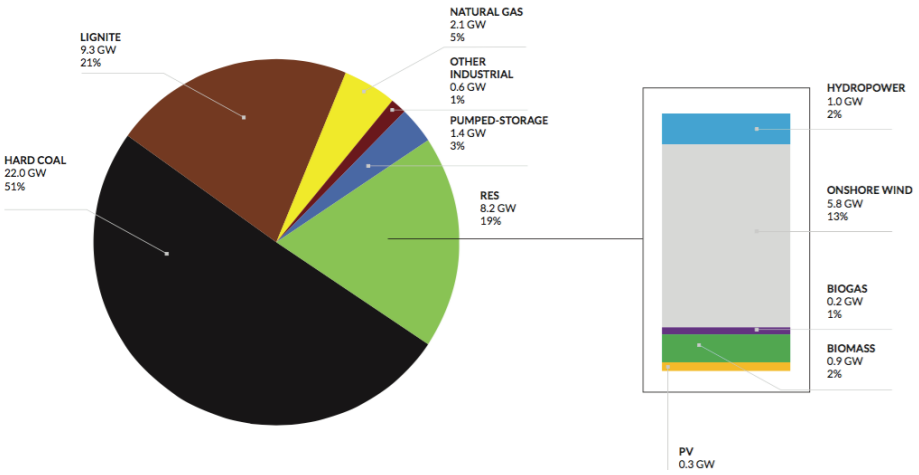


FIGURE 2: Installed Capacity in the Polish System in 2017 (GW and %)

Source: Forum Energii: Energy Transition in Poland, 2017

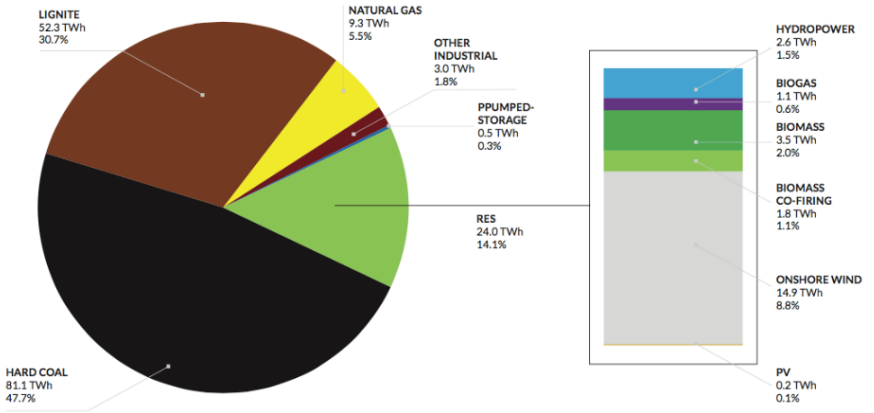


FIGURE 3: Electricity Production in 2017 (TWh and %)

Source: Forum Energii: Energy Transition in Poland, 2017

As illustrated in Figures 2 and 3 above, in 2017, coal was still the dominant electricity source, however, its share decreased by one percentage point compared to 2016.[176] Additionally, there is potential for RES, especially wind energy.[177] The offshore wind on the Baltic Sea is considered to have great potential, as it could add up to 8 GW-12 GW in Poland in the coming years. [178] With regard to consumption, the industry and transport sectors are the main consumers of energy in Poland, and energy demand is anticipated to grow steadily until 2030.

[176] *Id* at 13.
[177] *Id*. at 14.
[178] *See Id* at 13-16.

TABLE 1: Forecast of Demand for Final Energy by Sectors (Mtoe) by 2030

Source: Ministry of Economy 2009

	2015	2020	2025	2030
Industry	19.0	20.9	23.0	24.0
Transport	16.5	18.7	21.2	23.3
Agriculture	4.9	5.0	4.5	4.2
Services	7.7	8.8	10.7	12.8
Households	19.1	19.4	19.9	20.1
Total	**67.3**	**72.7**	**79.3**	**84.4**

As illustrated in Table 1 above, the industry sector will consume more energy followed by transport, agriculture, services and households. The increasing demand in energy will be met by coal with demand estimated at 56%; oil at 25%; gas at 13% and biomass at 6%.[179] Additionally, coal will be the most demanded energy source followed by gas, as illustrated in Figure 4 below:

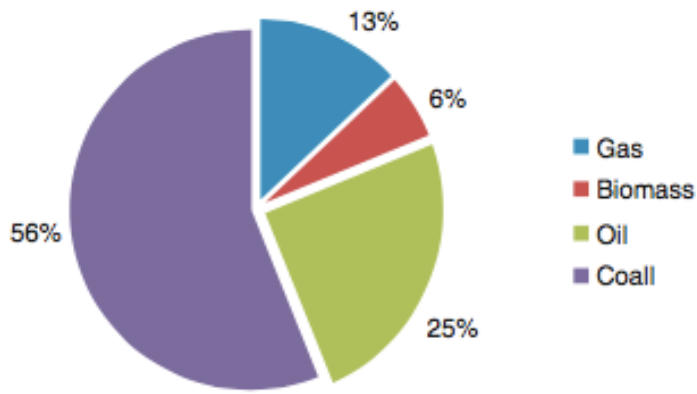


FIGURE 4: Demand for Primary Energy by Source

Source: Ministry of Economy 2011

Figure 4 above makes it clear that coal will continue to meet the energy demands in Poland. Over reliance on coal raises environmental concerns including: air pollution from burning coal in power and district heating plants, water pollution related to coal mine dumping of saline water into the Vistula and Ober rivers and refinery effluents of insufficiently treated water, and solid waste from coal mines and power plants.

[179] *Energy Sector in Poland*, Polish Information and Investment Agency, 2012, at 1.

Coal is expected to retain its major role in the Polish energy mix for many years, primarily due to low potential in replacing it with other energy sources.[180] In the EU, Poland and Germany are the biggest consumers of coal.[181] The coal resources in Poland are worth exploring given the country's history of opposing EU carbon reduction goals.[182] For instance, in June 2011, Poland was the only EU member state to oppose a more ambitious 25 percent 2020 emissions reduction target.[183] The country also opposed the EU energy talks in Durham when it refused to back a plan that would reduce the surplus of Kyoto carbon permits.[184] The country's defense for coal has always been based on two main reasons including coal's role in employment and power generation.[185] The three tables below summarize the role of coal in the Polish economy:

TABLE 2: Primary Energy Consumption, 2015

Source: European Association for Coal, 2017

Total primary energy consumption	Mtce	135.1
Hard coal consumption	Mtce	51.2
Lignite consumption	Mtce	17.5

TABLE 3: Power Supply, 2015

Source: European Association for Coal, 2017

Total gross power generation	TWh	164.8
Net power imports (exports)	TWh	(0.3)
Total power consumption	TWh	164.5
Power generation from hard coal	Twh	79.9
Power generation from lignite	TWh	52.9
Hard coal power generation capacity	MW	19,348
Lignite power generation capacity	MW	9,290

[180] *The Voice of Coal in Europe*, European ass'n for Coal, (Dec. 31, 2015), https://euracoal.eu/info/country-profiles/poland/

[181] *Id*.

[182] *Off Target: Ranking of EU Countries' Ambition and Progress in Fighting Climate Change*, Climate Action Network Group, (June 18, 2018), http://www.caneurope.org/docman/climate-energy-targets/3357-off-target-ranking-of-eu-countries-ambition-and-progress-in-fighting-climate-change/file.

[183] *Id*.

[184] *See Id*.

[185] *Id*.

TABLE 4: Employment, 2015

Source: European Association for Coal, 2017

Direct in hard coal mining	thousand	89.924
Direct in lignite mining	thousand	9.574

Tables 2-4 illustrate the importance of coal in Poland in both power generation and also as a source of employment. As indicated in Table 4, the coal industry employs more than eighty thousand people in the country. In this regard, it becomes essential when planning the energy mix for Poland, to take into account the costs and the possibility of raising capital for investments, ensuring jobs, as well as reducing the environmental and health impact.

i. Energy Resources in Poland

1. Coal Resources

According to the World Energy Council, global proven hard coal resources are estimated at 665 billion tons and Poland accounts for 8.3% of these (676 billion tons).[186] As of 2016, total proven hard coal resources in Poland amounted to 58,579 million tons and economic reserves were 2,982.72.[187] In 2017, out of the 81 million tons of hard coal produced in Europe, 65.5 million tons were produced from Poland.[188] Additionally, the country produced 61.0 million tons of lignite in 2017.[189] Poland exports about five times as much steam coal as cooking coal, and its coal exports go primarily to countries in Europe and the former Soviet Union. Approximately 97% of Poland's hard coal production comes from the Upper Silesian Basin in southern Poland, one of Europe's most important coal basins.[190] There are two other coal producing basins, Lower Silesia and Lublin.[191]

With respect to ownership, the State Treasury owns the coal deposits and it is responsible to issue out concessions, which are granted for a definite time of minimum 3 and maximum 50 years.[192] As of 1

[186] *Energy Resources*, World Energy Council, (2017), https://www.worldenergy.org/data/resources/resource/coal/.

[187] Pol. Geological Inst., (2019) https://www.pgi.gov.pl/en/data-bases.html#dane-przestrzenne.

[188] *The Voice of Coal in Europe, supra* note 147.

[189] *Id.*

[190] *Id*.

[191] *Id.*

[192] *See* Global Legal Group*, Poland: The Mining Law 2019*, The International Global Legal Group, (Sept. 28, 2018), https://iclg.com/practice-areas/mining-laws-and-regulations/poland.

January 2018, there were in Poland: 6 active hard coal prospecting and exploration concessions; 23 active hard coal exploration concessions; 5 active hard coal and methane prospecting and exploration concessions; 61 active concessions for hard coal extraction and for extraction of hard coal and methane as associated product; and 28 active concessions for hard coal extraction.[193] The Polish coal also plays a big role in the energy security of other EU countries. This is due to the fact that the country is an important exporter of coal albeit the exports are falling in recent years. For instance, in the 1960's and 1970's, Poland accounted for 19% of the global coal exports, but in recent years its share fell to 1-2%.[194] In 2016, Poland exported 9.099 million tons of hard coal, or 13.7% of the total domestic output. Polish hard coal is exported to various countries including Germany, Czech Republic, Finland, Austria, Ukraine, Slovakia, United Kingdom, Italy, Norway, Belgium, Denmark, Egypt, Morocco and Turkey.[195]

Also important to note is that Poland has made efforts to improve the combustion and gasification of coal, and in this regard it established a Clean Coal Technology Centre (CCTW) in Katowice.[196] CCTW is co-financed with EU funds and co-managed by the Central Mining Institute (GIG) and the Institute of Chemical Processing of Coal (IChPW).[197] Additionally, as will be discussed in the next section, Poland has invested in RES, especially wind energy.

2. Oil and Gas Resources

Besides coal, the country also has proven oil reserves of 115 million barrels, and production is mainly in the western and southern regions. The country also produces refined petroleum products, though the exports of such products are minor. Poland has two major refineries located at Gdansk and Plock. There are other minor refineries which are located in southern Poland and these include: Silesian Refining Works in Czechowice; Trzebinia Refinery in Trzebinia; Refining Works in Jaslo; Oil Refinery Jedlicze in Jedlicze; and Oil Refinery Glimar in Gorlice. Oil firms including the German firm EuroGas, and the national oil company POGC are some of the companies involved in the exploration of oil in Poland. Other key players in the downstream and upstream oil industry include, Nafta Polska (Polish Oil); Petrobaltic; and Naftobazy.

[193] Pol. Geological Inst., *supra* note 149.
[194] *Id.*
[195] *Id.*
[196] *The Voice of Coal in Europe*, *supra* note 147.
[197] *Id.*

3. Natural Gas

In addition to coal and oil, Poland is also endowed with natural gas resources with reserves estimated at 5.1 trillion cubic feet (TCF). Poland also has large coalbed methane reserves. However, production costs are relatively high and the full economic potential is yet to be assessed. Estimates for recoverable reserves in the Upper Silesian Basin are 3.4 TCF, while estimates for total coalbed methane reserves in Poland range as high as 35 TCF.[198] In the past, the country has relied mostly on the Russian Federation for natural gas imports. For instance, in 1998, to meet its natural gas needs of 444 billion cubic feet (BCF), Poland produced 181 BCF and imported 281 BCF, mostly from Russia. In a bid to reduce energy dependence on the Russian Federation, Poland is considering importing liquefied natural gas (LNG) from Qatar, Nigeria, Norway, and Algeria. Natural gas demand is expected to increase given the country's target to reduce reliance on coal. The most important player in Poland's gas industry is POGC, which is responsible for exploration, development and operation of natural gas deposits; production, processing, dispatching gaseous fuels; and import/export activities concerning natural gas. As will be discussed in section 1.5, Poland is also endowed with renewable energy sources including wind, solar and hydro energy.

ii. Energy Transition and Greenhouse Gas Emissions

1. Energy Transition

Energy transition involves the long-term structural change to energy systems. It is basically determined by the availability of energy resources, the costs of obtaining energy carriers as well as their usefulness, and in recent years, by efforts to protect the climate.[199] There are global efforts to shift from dirty fuels including oil and coal, to cleaner energy resources including renewables such as wind, solar and hydro. Some countries have been able to reduce their reliance on coal as shown in Figure 5.

[198] Richard Lynch, *An Energy Overview of the Republic of Poland*, U.S. Dept. of Energy, (Jan. 7, 2003), https://www.geni.org/globalenergy/library/national_energy_grid/poland/EnergyOverviewofPoland.shtml.

[199] *The Contribution of the Polish Energy Sector to the Implementation of Global Climate Policy*, Polish Electricity Ass'N, 1, 20 (2018), https://www.pkee.pl/file/repository/RAPORT_COP24_ENG_28_11_FINAL.pdf.

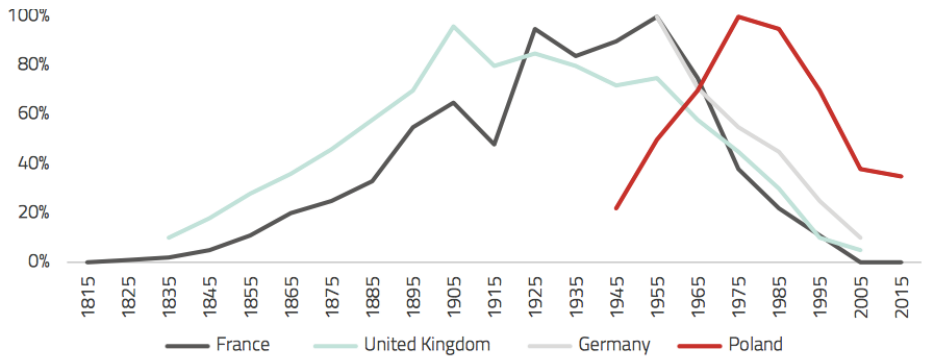


FIGURE 5: The Coal Consumption in Germany, Great Britain, France and Poland (%)

Source: Polish Electricity Association, 2018.[200]

As illustrated in Figure 5 above, coal has for many decades been the basic energy resource for EU countries. However, in some countries like Britain, Germany and France, coal began to lose its importance to hydrocarbon fuels. With the global efforts to protect the environment, many EU countries are now shifting to RES. Energy transition, which focuses on use of clean and sustainable energy, has been hard to achieve in Poland as the country still relies on coal to meet its energy needs.[201]

2. Greenhouse Gas Emissions (GHG)

Although coal is the largest source of greenhouse gas emissions, it still has a major role to play in meeting the Polish energy demand. Nevertheless, there are efforts by the country to utilize natural gas and also shift to renewable energy sources. Additionally, Poland's long-term energy strategy places a strong emphasis on reducing greenhouse gas emissions and air pollution, increasing energy efficiency and decarbonizing the transport system. The shift to renewables will definitely require significant investments in clean energy and also in energy infrastructure to strengthen integration with neighboring markets.

Poland has for many years been an active supporter of international activities aimed at protecting the environment. Besides being a host of the recent COP24 in 2018, Poland ratified the UNFCCC Convention, the Kyoto Protocol, the Doha Amendment and the Paris Agreement. However, due to the country's reliance on coal, Poland has been faced with a challenge of meeting the ambitious reduction targets. The energy sector is considered to have the most substantial share in anthropogenic GHG emission due to fuel combustion, as a

[200] *Id.* at 43.
[201] *Id.* at 97.

result, the main reduction activities are addressed to this sector. This has indeed posed a significant challenge for a coal based country like Poland. The country has nevertheless, made efforts to meet the global and EU requirements relating to the reduction of GHG emissions and air pollution. Consequently, Poland has met EU emission standards and Kyoto targets have been achieved with a large surplus -29% reduction as compared to required 6%.[202]

TABLE 5: GHG Emissions in Poland Broken Down by Sectors (Mt CO2 equiv.)

Source: Polish Electricity Association, 2018.

Sector	1988	1990	2005	2016
Energy	475	382	330	327
Including:				
Energy & heat production	249	229	170	155
Transport	24	20	35	53
Industry	31	23	25	29
Agriculture	48	47	30	30
Waste	16	16	13	11
Total	**570**	**467**	**398**	**396**

Table 5 above summarizes the GHG emissions in Poland and we note that the energy sector takes the lead. Moving forward, in the bid to protect the environment, Poland has invested in RES technologies and innovations including smart grids, smart meters and electric vehicles, as will be discussed in the proceeding sections.

c. Governance System: Political Decentralization and Energy Competences

Polish laws, specifically the Energy Law Act, supports decentralization of the energy sector as envisaged in the unbundling of electricity and natural gas transmission and distribution systems operators and of operators of gas storage facilities (transmission, distribution and gas storage facilities operators).[203] The law sets out regulations implementing the European accounting, management and legal unbundling rules as laid down for transmission, distribution and gas storage facilities operators in the 2009/72 Directive and 2009/73 Directive. The law further provides for ownership unbundling rules

[202] *Id* at 7.

[203] The Energy Law Act of 10 (Pol.).

applicable to electricity and natural gas transmission system operators.[204]

Privatization of companies involved in the production and distribution of electricity in Poland can be traced back to 1999, when the Polish government started selling shares to outside investors. In the distant past, the State Treasury separated the existing transmission assets previously owned by vertically integrated undertakings and established two sole-shareholder companies controlled by the State Treasury: PSE SA, which is appointed as a transmission system operator for electricity; and OGP Gaz-System SA, which is appointed as transmission system operator for natural gas. PSE S.A. has its seat in Konstancin-Jeziorna and it carries out its activities under a license for electricity transmission granted with the decision of the President of the ERO and valid until 31 December 2030.[205]

Additionally, on 4 June 2014 the President of the ERO granted PSE S.A. the certificate of complying with independence criteria determined in Article 9d (1a) of the Energy Law Act.[206] OGP Gaz-System SA on the other hand is also appointed as an independent transmission system operator with respect to the Polish section of the Jamal pipeline owned by the vertically integrated company EuRoPol GAZ SA—a joint venture between Polish company PGNiG and Russian company GAZPROM.

The Energy Law further makes independence mandatory for Distributing System Operators ("DSOs") operating within vertically integrated companies and serving more than 100,000 customers connected to their grids. The most significant of them being local incumbents (ENEA in northwest Poland, ENERGA in northern Poland, TAURON in southern Poland, PGE in central and eastern Poland). Article 9d of the Energy Law requires that DSOs should be independent in terms of legal form, organizational structure and decision-making.[207] As of 2016, 172 DSOs appointed under the decisions of the President of the ERO were involved in electricity distribution, including five entities legally separated from former distribution companies and 167 DSOs not obliged to be legally unbundled.[208] Each company within the 'big five' is legally unbundled and they are controlled and supervised by the Polish State Treasury.[209]

With respect to the Oil and Gas sector, restructuring started in 1994 with the establishment of Nafta Polska, the joint stock holding

---

[204] *Id.*

[205] Pol. Energy Regulatory Office, Nat'l Rep. (2017).

[206] *Id.*at 12.

[207] The Energy Law Act 1997, c. 2 (Pol.).

[208] The President of the Energy Regulatory Office in Poland, National Report, 2017, at 10 (Pol.).

[209] *Id.* at 13.

company for Poland's oil industry, which is ultimately responsible for the privatization of Poland's oil and gas sectors. Privatization milestones in the oil and gas exploration sector were reached in early 1996 when U.S. independent Frontier Oil Exploration was licensed to explore a two-million acre concession in northern Poland, and Texaco and Tenneco Energy were awarded a 1.8 million acre concession in central Poland.

d. Electricity Market

i. Regulatory Framework

There are various laws regulating the energy sector of Poland. These laws are briefly described below:

1. Energy Policy 2030 and 2050

The main act indicating the government policy for the electricity sector is the Energy Policy 2030 adopted by the Council of Ministers in 2009. The country adopted a new Energy Policy of 2050 which aims at facilitating the transformation of coal-based electricity generation system towards more sustainable and diversified energy mix. The Energy Policy 2050 focuses on the following six key objectives: improving energy efficiency; increasing security of fuel and energy supply; diversification of electricity generation through the introduction of nuclear energy; development of renewable energy sources (RES); development of competitive energy and fuel markets; and reducing the energy sector's impact on the environment.

2. Energy Act of 10 April 1997

The most important law is the Energy Act, which implements EU energy regulations. As stipulated in Article 1, the Act regulates the country's electricity sector, midstream and downstream oil and gas sectors including production, transmission, storage and trading.[210] The Act has been amended several times and it established the basis for independent power producers, third-party access, independent electricity and gas system, energy regulatory authority just to mention a few. The Act sets out, among other things, the rules for supply (transmission, distribution and sales) of electricity and its generation, rules for operation of the energy installations, networks and equipment, the obligations and powers of the president of the Energy Regulatory Authority (ERA), as well as rules for licensing and for energy tariffs.

[210] The Energy Law Act 1997, c. 1 (Pol.).

3. The 2016 Act on Energy Efficiency

The Energy Efficiency Act of 2016 implements Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012. Energy efficiency is one of the key elements of the EU policy. It is implemented on the basis of the Europe 2020 strategy of smart and sustainable social development and transformation into the economy based on efficient use of resources. The 2016 Act introduces a number of material changes to the energy efficiency support mechanism, such as doing away with the bidding process, simplification of the white certificate granting procedures, gradual resignation from substitution fees and energy audits. The Act also provides for continuation of the energy efficiency certificate (white certificate) system, which was introduced in Poland in 2013.[211]

4. The 2011 Geological and Mining Law

This law provides for the legal framework governing exploration for and exploitation of fossil fuels including coal, lignite, hydrocarbons, uranium, to mention but a few. The law further provides for the use of underground reservoirs for storage of hydrocarbons, liquid fuels and the carbon dioxide processed in carbon capture and storage projects.

5. The Polish Act on Renewable Energy Sources 2016 (as amended in 2018)

The Renewable Energy Act was adopted in February 2015, and it provides for the regulation of RES. The Act was amended two times and entered into force in July 2016. The law replaces the green certificate system with auction scheme.

6. The Tax Acts

With regard to the taxation of the energy sector, the relevant laws include the 2014 Act on Special Hydrocarbon Tax and the 2012 Act on Tax on Extraction of Certain Minerals.

7. Other Relevant Laws

There are several other laws relevant in the energy sector. These include: the 2007 Act on Reserves of Crude Oil, Petroleum Products, Natural Gas and on Procedures in Cases of Emergency in Security of

[211] *See* Council Directive 2012/27, art. 20, 2012 O.J. (L 315) 4 (EU).

Fuel Supply and Disturbance on the Oil Market (the Act on Reserves); the 2006 Act on the System of Monitoring and Control over the Quality of Fuels; the 2006 Act on Liquid Bio-components and Biofuels; the 2000 Nuclear Law; the 2011 Act on Preparation and Implementation of Investments in Nuclear Power Facilities and Associated Investments; the 2009 Act on Investments with Respect to the Regasification Terminal in Świnoujście; the 2007 Act on Emergency Management; and the 2010 Act on special powers of the minister competent to the State Treasury affairs and their enforcement with respect to certain companies and capital groups conducting their businesses within the electricity, crude oil and natural gas sectors.

There are also rules and regulations governing trading in energy. Trading in electricity and natural gas at the Polish Power Exchange is regulated by the 2000 Act on Commodity Exchange and by internal by-laws developed by the operator of the commodity exchange and subject to the prior approval of the Polish Financial Supervisory Commission. The remaining OTC electricity and gas sale agreements are regulated by the 1997 Energy Law and secondary legislation issued thereupon and by the grid codes that are binding on market participants upon their approval by the President of the Energy Regulatory Office. The Capacity Market Act is also relevant in the electricity sector. This Act is intended to address the generation adequacy concern and determines the rules for providing the service of availability to deliver capacity at times of system stress and rules for rewarding capacity market units (including generation, demand side response and storage units) for their availability.

ii. Energy Security Dimension

Poland has vast energy infrastructure that ensures that the country is connected with other neighboring countries in the EU, thus ensuring energy trade amongst these countries. The electricity market in Poland is dominated by state-owned companies in each of the market sectors of generation, transmission, distribution and sale. The four main capital groups active in the sector of generation, distribution and supply of electricity include PGE, Tauron, Enea and Energa.

PGE capital group maintained the largest market share in the electricity generation sector in 2017, which amounted to 43.5 per cent. On the other hand, Tauron was the leader on the final sales market with a 10.8 percent share. The three largest producers (grouped in capital groups: PGE, Tauron, Enea) had, in total, almost two thirds of the installed capacity and were responsible for almost 70 per cent of electricity production in the country.

The energy transmission infrastructure in the country is reflected in the available electricity grids; oil and gas pipelines; and natural gas pipelines. With regard to electricity grids, Poland is part of CENTREL, a power distribution system which is fully integrated into the Western European UCPTE system. CENTREL comprises of five countries including Poland, Slovakia, Hungary and the Czech Republic. Besides the afore-mentioned countries, Poland also maintains very strong links with distribution systems in the Ukraine and Belarus. This can be attributed to the fact that prior to CENTREL, Poland was part of the POKAJ which is a former power distribution system of the UKRAINE and Eastern European countries. The company responsible for grid operations and power dispatching is the Polish Power Grid Company—Polskie Sieci Elektroenergetyczne (PSE), which owns Poland's high voltage electricity grid.

TABLE 6: Electricity Grids in Poland[212]

Interconnection	Capacity
Germany	
Kraynik-Vierraden	2*408 MVA
Mikulowa-Hagenwerder	2*1386 MVA
Czech Republic	
Dobrzen-Albrechtice	1386 MVA
Wielkopole-Nosovice	1386 MVA
Kopanina/Bujakow-Liskovec	2*400 MVA
Slovakia	
Krosno-Lemesany	2*831 MVA
Ukraine	
Zamosc-Dobrotwor	415 MVA
Rzeszow-Chmielnicka	out of order
Belurous	
Bialysto-Ros	out of order
Sweden	
SwePol DC Link	600 MW
Lithuania	
LitPol DC Link	500 MW

[212] Michal Wierzbowski, Izabela Filipia & Wojciech Lyzwa, *Polish energy policy 2050—An instrument to develop a diversified and sustainable electricity generation mix in coal-based energy system,* 74 Renewable and Sustainable Energy Rev. 51, 60 (2017).

As shown in Table 6, Poland has 10,377MW of interconnections available with Germany, Czech Republic, Slovakia, Ukraine, Belarus, Lithuania, and Sweden. The connections with Sweden and Lithuania are made through DC Links.[213] There are, however, issues related to the transmission lines, as 70% of transmission line is over 30 years old and 47% over 40 years old. Additionally, it has been asserted that the grid's density is not equal on the Polish territory and that it allows for only one-way electricity flows and limits the potential of distributed generation.[214] Another challenge is the theft of electricity infrastructure, which causes losses to the operators. For instance, the total loss of electricity transmission in 2011 reached 10,774 GWh (7.3% of total electricity produced), which represents the loss of almost €0.5 billion.[215] Another challenge relates to the decommissioning of power plants. It has been observed that 59% of turbo generators and over 63% boilers are over 30 years old. Generally, the predicated lifetime of coal power plants is 40-45years old. The Polish government will need to build new units if it is to meet the energy demand in the country which is predicted to reach 30GW in 2035. Despite the urgency of new units, there has been reluctance to invest in these, as was evidenced in the period between 2010 and 2014 where investors who had declared to build 10 units withdrew their offers due to the high uncertainty of future income.[216]

Besides electricity grids, Poland also relies on natural gas infrastructure to meet its energy needs. In this regard, the country relies on imports of Russian natural gas via the Yamal-Europe Transit Gas Pipeline, which is currently under construction across Poland and Western Europe. However, there have been efforts to reduce the country's energy dependence on Russia and in this regard WARSAW, Poland (AP), Poland's main gas company, signed a long-term contract to receive deliveries of liquefied natural gas from the US. The state company PGNiG signed the 24-year deal with American supplier Cheniere during a ceremony in Warsaw attended by U.S. Energy Secretary Rick Perry and Polish President Andrzej Duda. POGC is responsible for construction and operation of gas transmission and distribution system.

e. Renewable Energy Sources (RES) Generation

Poland relies heavily on fossil fuels, especially coal, and the country's energy sector is among the most independent in Europe as it is not heavily dependent on energy imports. Poland's energy system is

[213] *Id.*
[214] *Id.*
[215] *Id.* at 55.
[216] *Id.* at 54.

the sixth largest in Europe, albeit it is also among the least diversified in the region. RES have a big role to play in the transformation of the Polish energy sector. Additionally, if more investments are made, RES can also contribute significantly in the country's electricity production, thus reducing the over reliance on coal.

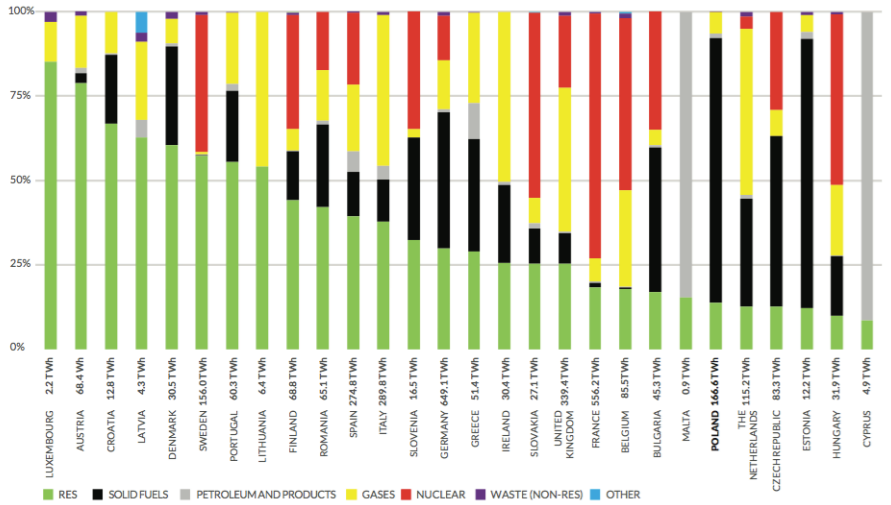


FIGURE 6: Electricity Production Structure in 2016 (TWh and %)

Source: Source: Forum Energii: Energy Transition in Poland, 2017

Figure 6 above note that although Poland's energy system is one of the largest in Europe in terms of electricity production, the country relies mostly on coal. In this regard, RES have a significant role to play in the diversification of the Polish energy mix. As of 2014, RES, including solid biomass, contributed to (76.62 per cent); biofuels (9.23 per cent); water (2.33 per cent); wind (8.18 per cent); biogas (2.57 per cent); photovoltaic (0.21 per cent); and smaller shares of other sources (municipal waste, geothermal and solar heat), with an increasing installed capacity of wind farms.[217]

With respect to electricity production, records indicate that in 2014, 14.8% of capacity was installed in RES (6028 MW) and that RES were responsible for 8% of total electricity production (13,388.26 GWh).[218]

[217] Krzysztof Chichoki & Tomasz Mlodawski, *The Energy Regulation and Markets Review-Edition 5, Poland*, The Law Reviews (Aug. 2016), https://thelawreviews.co.uk/edition/the-energy-regulation-and-markets-review-edition-5/1136392/poland.

[218] Michal Wierzbowski, Izabela Filipia & Wojciech Lyzwa, *Polish energy policy 2050—An instrument to develop a diversified and sustainable electricity generation mix in coal-based energy system,* 74 Renewable and Sustainable Energy Rev. 51, 57 (2017).

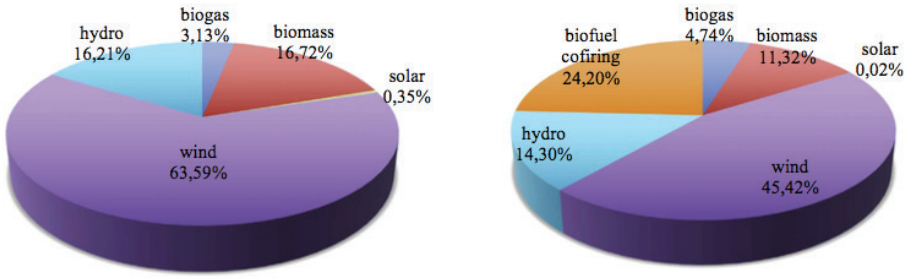


FIGURE 7: Structure Capacity Installed in RES (left chart) and Electricity Generated by RES (right chart)

Source: Renewable and Sustainable Energy Reviews.[219]

As shown in Figure 7, wind energy is the main source of power production as this stands at 64%; followed by biomass at 16.72% and hydro at 16.21%. Hydroelectric power represents 14.30% of electricity generated from RES. Most of the hydroelectric power plants in Poland are located in the southern and western part of the country, and are owned and operated by the Pumped Storage Power Plants Company (PSPP). PSPP's hydroelectric power plants represent about 4.5% of the total installed electricity production capacity in Poland.[220] Additionally, PSPP has about 23 hydroelectric and pumped storage power plants with a cumulative installed capacity of nearly 1,500 megawatts (MWe). PSPP also has 85% of the pumped storage hydroelectric capacity in Poland and 74% of the total hydroelectric generating capacity.[221]

[219] *Id.* at 59.

[220] Krzysztof Chichoki & Tomasz Mlodawski, *The Energy Regulation and Markets Review-Edition 5, Poland*, The Law Reviews (Aug. 2016), https://thelawreviews.co.uk/edition/the-energy-regulation-and-markets-review-edition-5/1136392/poland.

[221] An Energy Overview of the Republic of Poland, Fossil Energy Int'l (Jan. 7, 2003), https://www.geni.org/globalenergy/library/national_energy_grid/poland/EnergyOverviewofPoland.shtml.

TABLE 7: PSPP's Hydroelectric and Pumped Storage Power Plants

Source: U.S Department of Energy.[222]

Power Station	Location	Type	Capacity MWe	River
Bukówka	Bucze	Run of River	0.8	Nysa Luzycka
Dychów	Dychów	Pumped Storage	79.3	Bóbr*
Gorzupia I	Gorzupia	Run of River	0.6	Bóbr
Gorzupia II	Gorzupia	Run of River	1.7	Bóbr
Grajówka	Gryzyce	Run of River	2.9	Bóbr
Gubin	Gubin	Run of River	1.2	Nysa Luzycka
Kliczków	Kliczków	Run of River	0.6	Kwisa
Malomice	Malomice	Run of River	0.8	Bóbr
Myczkowce	Zwierzyn	Peak Load	2.9	San
Porabka	Porabka	Peak Load	12.6	Sola
Porabka-Zar	Miedzybrodzie Zywieckie	Pumped Storage	500	Sola**
Przysieka	Dabrowa Luzycka	Run of River	0.9	Nysa Luzycka
Raduszec Stary	Raduszec	Run of River	2.9	Bóbr
Sobolice	Sobolice	Run of River	6.6	Nysa Luzycka
Solina	Zabrodzie	Pumped Storage	136	San
Szprotawa	Szprotawa	Run of River	2.9	Bóbr
Tresna	Porabka	Peak Load	12.6	Sola
Zasieki	Brozek	Run of River	0.8	Nysa Luzycka
Zielisko	Siedlec	Run of River	0.9	Nysa Luzycka
Zagan I	Zagan	Run of River	0.9	Bóbr
Zagan II	Zagan	Run of River	0.9	Bóbr
Zarki Wielkie	Zarki	Run of River	0.9	Nysa Luzycka
Zarnowiec	Zarnowiec	Pumped Storage	716	none***

* located on a canal adjoining the river
** upper reservoir is Miedzybrodzkie Lake
*** lower reservoir is Lake Zarnowiec

[222] *Id.*

Table 7 gives a summary of the hydroelectric and pumped storage power plants owned by PSPP in Poland. Hydro power also has a big role to play in the diversification of the Polish energy mix.

With respect to wind energy, there are several wind farms and, as of September 2012, there were 663 wind plants in Poland of a total capacity of 2341 MW.[223] Most wind farms are located in north-western Poland. The leader is the Zachodniopomorskie Province (716.8 MW), followed by the Pomorskie Province (246.9 MW) and the Wielkopolskie Province (245.3 MW). Production of electricity from RES increased significantly in 2017 as compared to 2016.[224] The figure below shows the contribution of various sources of renewable energy in the Polish electricity production.

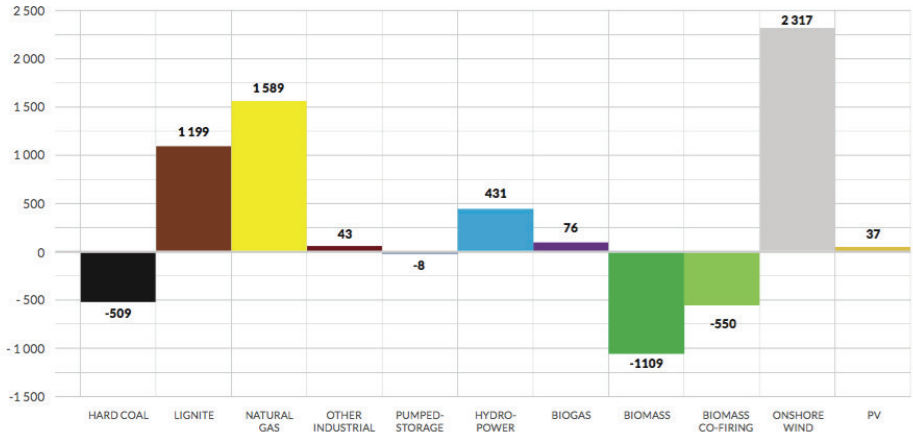


FIGURE 8: Electricity Production in 2017 as Compared to 2016 (GWh)

Source: Forum Energii: Energy Transition in Poland, 2017 [225]

As shown in Figure 8, there was an increased production from RES in 2017 and this is attributed to good weather conditions and new power capacities. This production came mainly from wind (approx. 14.9 TWh) and water (approx. 2.6 TWh). Electricity production from gas was also record high—20% more than in the previous year due to new units.[226]

The declining potential of the socio-economically viable extraction of coal makes RES more attractive in Poland. As shown in Figure 8 above, currently, RES electricity generation is based mainly on wind. The role of RES in the Polish energy mix is expected to increase

[223] Energy Sector in Poland, Polish Info. and Foreign Inv. Agency (2012), https://www.paih.gov.pl/files/?id_plik=19610.

[224] Energy Transition in Poland 2017, Forum Energii , http://forum-energii.eu/en/analizy/polska-transformacja-energetyczna.

[225] *Id*.

[226] *Id*.

significantly in the future. Poland has abundant RES sources including wind and solar and estimates indicate that Poland has technical wind power potential of more than 3000 TWh. However actual potential is constrained by both economic and non- economic barriers, such as costly and challenging major upgrade of networks and securing acceptance for a large-scale roll-out of wind farms.[227]

It is also imperative to note the changing role of RES in electricity production. Initially, biomass played a significant role, but in 2017 wind energy was the lead RES as illustrated in Figure 9 below.

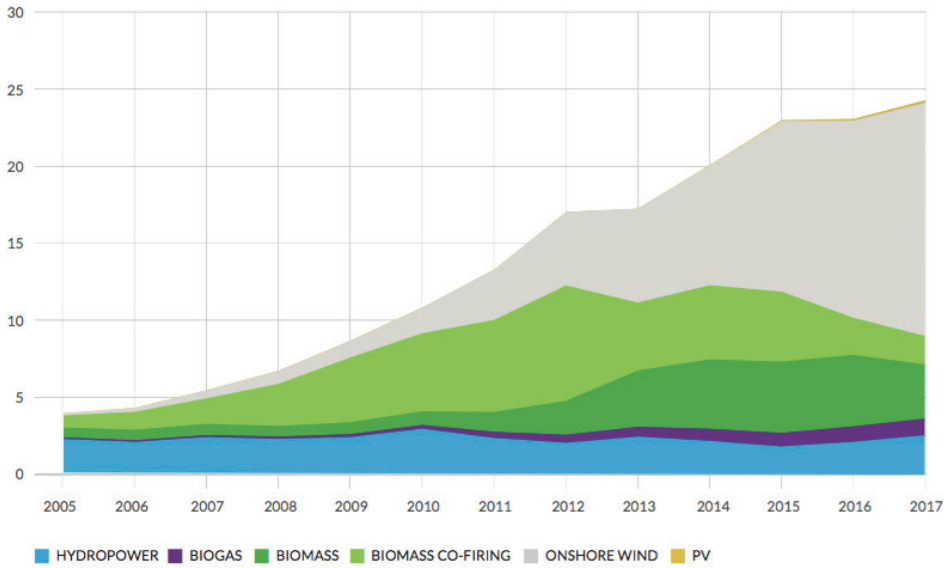


FIGURE 9: Changes in Electricity Production from RES (TWh)

Source: Forum Energii: Energy Transition in Poland, 2017

In Figure 9, we note that from 2005-2012 there was a steady increase in production of electricity from biomass co-firing at existing coal-fired boilers. However, from 2012-2017, RES production was evident from onshore wind and biomass. This is attributed to the initiated investment projects in these sectors.[228]

Moving forward, RES are anticipated to play a significant role in the Polish energy mix in the coming decades as projected in the Forum Energii's 2050 energy scenarios. Forum Energii reflects on four scenarios including: coal scenario; diversified scenario with nuclear

[227] Julius Ecke, Tim Steinert, Maciej Bukowski, & Aleksander Śniegocki, *Polish Energy Sector 2050. 4 scenarios*, Forum Energii, 5 (2017), http://forum-energii.eu/public/upload/articles/files/4%20scenarios.pdf.

[228] Rafał Macuk, Joanna Maćkowiak Pandera, & Andrzej Rubczyński, *Energy Transition in Poland* 2017, Forum Energii, 18(2018), http://forum-energii.eu/en/analizy/polska-transformacja-energetyczna.

power; diversified scenario without nuclear power; and renewable scenario.[229] These scenarios are briefly described below:

- Coal scenario is based mainly on coal-fired units and assumes construction of new hard coal and brown coal mines. This scenario assumes that in 2050, the RES share will amount to 17%.[230]
- Diversified scenario with nuclear power introduces a diversified mix of energy technologies, along with a nuclear power plant, instead of a brown coal-fired power plant. This scenario assumes that in 2050, the RES share will amount to 38%.[231]
- Diversified scenario without nuclear power assumes that energy generation in a nuclear power plant is replaced by increased generation from natural gas and RES, whose share in 2050 is anticipated to amount to 50%.[232]
- Renewable scenario assumes gradual withdrawal of carbon-based energy. This scenario anticipates that RES based energy generation share will increase up to 73%.[233]

Reflecting on the above, we note that the renewable scenario is the most favorable as it ensures diversification of the energy mix. Additionally, it is anticipated that the renewable energy scenario will ensure lower electricity prices in comparison with the coal scenario—within the range from EUR 2/MWh to EUR 9/MWh.[234] Moreover, the renewable scenario also provides the highest level of energy independence (only 30% of imported fuels), due to the use of primary energy local resources.[235] Comparatively, the coal scenario is characterized by imported fuels, as it is estimated that in 2050 between 45% and 70% of the coal necessary for electricity generation might be imported.[236]

---

[229] Julius Ecke ET AL., Polish Energy Sector 2050. 4 scenarios, Forum Energii, 39 (2017), http://forum-energii.eu/public/upload/articles/files/4%20scenarios.pdf.

[230] *Id*.

[231] *Id*.

[232] *Id*.

[233] Julius Ecke, Tim Steinert,, Maciej Bukowski, & Aleksander Śniegocki,*Polish Energy Sector 2050. 4 scenarios*, Forum Energii, 5 (2017), http://forum-energii.eu/public/upload/articles/files/4%20scenarios.pdf.

[234] *Id.*

[235] *Id*.

[236] *Id.*

In an endeavor to increase the contribution of RES in the energy mix, the Polish government has given several incentives to RES operators as stipulated in the 2015 RES Act, including among others: exemption from excise tax; reduction of interconnection fees payable by certain RES energy producers; preferential financing; exemption of 'prosumers' from licensing obligations; and support for investments in smart grid and smart metering.[237] Besides encouraging investments in RES, the Polish government also offers incentives to promote energy efficiency including issuance of tradable white certificates which are given to energy efficiency, investors, as provided for in the 2011 Act on Energy Efficiency.[238] Additionally, there are preferential financing schemes offered by governmental funds and banks (e.g., the National Fund for Environmental Protection and Water Management) addressed to energy-efficiency investments.[239]

f. Smart Grid and Smart Metering Systems

The overall essence of a smart grid is to enable utilities to better use renewable energy sources and reduce outages while empowering consumers with pricing choices, detailed information, and automated appliances to save money, energy and carbon emissions. According to the International Energy Agency (IEA), investment in smart grid technologies grew by 12% between 2014 and 2016 overall, although key areas such as smart distribution networks are lagging behind, with investment growing by only 3% in 2017.[240]

With respect to grid stability, Poland often scores below average, with a System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI), both significantly higher than the EU average. [241] There have been efforts by DSOs to modernize the grids in Poland.[242] For instance, in May 2015, Landis+Gyr, an energy company, won a major contract with four of the largest Polish distribution system operators (DSOs) to supply a total of 36,000 S650 Smart Grid Terminals for the medium- and low-voltage network.[243] In

[237] 2015 Renewable Energy Sources Act, http://prawo.sejm.gov.pl/isap.nsf/download.xsp/WDU20150000478/T/D20150478L.pdf (2015).

[238] Krzysztof Cichocki **&**Tomasz Mlodawski**,** *The Energy Regulation and Markets Review Edition 5*, The Law Reviews, (Aug. 2016), https://thelawreviews.co.uk/edition/the-energy-regulation-and-markets-review-edition-5/1136392/poland.

[239] *Id.*

[240] International Energy Agency, *Smart grids*, (May 23, 2018), https://www.iea.org/tcep/energyintegration/smartgrids/

[241] Landis + Gyr, *Smart grid development in Poland*, (Mar. 1, 2016),https://eu.landisgyr.com/blog/smart-grid-development-in-poland.

[242] *Id.*

[243] *Id.*

total, the Polish DSOs will need to upgrade 250,000 transformer stations with smart grid equipment.[244] There are several other DSOs involved in the smart grid projects in Poland, as shown in Table 8:

TABLE 8: The Polish DSOs Involved in the Smart Grid Project.[245]

Source: Landis + Gyr, Smart grid development in Poland, 2016

DSOs	Description
Energa	Manages over 184km of power lines distributing 20TWh of energy per year to over 3 million consumers
Tauron Dystrybucja	Part of the TAURON Group, the second-largest energy company in Poland, delivering 45,000 GWh of electricity to customers across an area of 57,940 km2 or 18.5% of the country.
RWE Stoen Operator	Serves 964,000 customers in and around Warsaw, managing the energy grid and operating the distribution network.
Enea Operator	A subsidiary of Enea SA, and one of the four largest electricity providers in Poland, Enea Operator provides electricity to customers in six provinces over an area of 58,213 km2.
PGE Dystrbucja	Supplies 423,000 customers in the southeast of Poland with electricity, covering 15,283 km2.

As illustrated in Table 8, there are various DSOs involved in the smart grid project. In 2014, four DSOs including: Tauron Dystrybucja, RWE Stoen Operator, Enea Operator and PGE Dystrybucja—teamed up to launch a single public tender for balancing meters to upgrade their medium- and low-voltage transformer stations.[246] There are also several innovations by energy companies in smart grids including, Energa, PGE and Tauron. These developments and innovations in smart grids are summarized below:

- Energa: it is the largest operator of advanced metering infrastructure on the Polish market. The company is developing smart grids as the first in Poland, piloting the Smart Toruń project: one of the most modern elements of the electricity system in Poland. A similar project was implemented by the company on Hel Peninsula.[247]

[244] *Id.*

[245] *Id.*

[246] *Id.*

[247] Polish Electricity Association, *The contribution of the Polish energy*

- PGE: the company is involved in the development of energy quality monitoring, smart metering and introduction of automation and creation of a dedicated digital communication system.[248]
- Tauron: this company is involved in the development of a data management platform that is derived from smart metering infrastructure.[249]

Besides smart grid terminals, replacing traditional meters with smart meters is a necessary step towards enabling a future smart energy system. Smart meters are preferred due to their ability to record energy consumption in each half-hour period and communicate with energy suppliers and network companies. Additionally, smart meters have the capability of reducing energy supplier's costs and encouraging consumers to pay more attention to the energy they use, thus reducing energy consumption and increasing competition in the market. As of 2016, it is estimated that 500,000 smart meters were installed by all DSOs in Poland, which is approximately 3% of all end users.[250]

At a regional level, the EC Directives 2009/72/CE and 2009/73/CE are to the effect that at least 80% of consumers shall be equipped with intelligent metering by 2020, provided the member state's cost benefit analysis is determined to be positive. Following these EU directives, Poland, through its Energy Law as amended in 2013, introduced provisions on smart metering, making their installation eligible though not mandatory. In this respect, DSOs started pilot projects on smart metering. With these developments, the President of the Energy Regulatory Office (ERO), the energy regulator, initiated the process of smart meter installation in 2009, thereby establishing the first platform of main stakeholders including customer associations. In the same year, Energa-operator SA deployed smart meters and the project's first stage covered approximately 100,000 measuring devices in three selected locations, which differ in the nature of the electric vehicle charging.[251] One of the areas selected for the deployment is a zone in its prevailing part of urban character, in the northern part of Poland, supplied from a single point of supply (110/115 kV substation Władysławowo).[252]

---

sector to the implementation of global climate policy, 67 (2018), https://www.pkee.pl/file/repository/RAPORT_COP24_ENG_28_11_FINAL.pdf.

[248] *Id.* at 66.

[249] *Id.*

[250] *European Smart Metering Landscape Report*, USmartConsumer, 26 (2016), http://www.escansa.es/usmartconsumer/documentos/USmartConsumer_European_Landscape_Report_2016_web.pdf.

[251] *Id*.

[252] Adam Babś, Krzysztof Madajewski, Tomasz Ogryczak, Sławomir Noske, & Grzegorz Widelski, *"The Smart Peninsula" Pilot Project of Smart Grid Deployment*

With regard to regulations, it is expected that the Meter Act will be passed and this will, among others, regulate the procedures of gathering and processing data from smart metering in a way s ecuring privacy and data safety.[253] Additionally, to facilitate the duties, a new body will be established, namely the Operator of Measuring Information, as a daughter company of the TSO.[254] Given the fact that the amendments to the Energy Act did not make it mandatory to install smart meters, the Meter Act is expected to rectify this by making installation of smart meters in at least 80% of end users a legally binding target for all DSOs.[255]

g. Electric Vehicles and Storage

The transport sector is one of the biggest greenhouse gas emitting sectors globally, and this has necessitated efforts aimed at ensuring a transition to e-mobility. Just like in other EU countries, electromobility has been embraced in Poland as evidenced in the country's efforts to invest and attract investments in electric vehicles (EVs), electric public transport, charging infrastructure, and energy storage.

With respect to EVs, the current figures in Poland, although promising, are not impressive as compared to other EU countries. Nevertheless, given the recent developments in Polish electromobility, including the introduction of relevant legislations in 2018, it is expected that the country's main goals in electromobility will be achieved in the near future. According to the Polish Alternative Fuels Association (PSPA), as of 2017, there were:

- 17 million passenger cars registered in Poland;
- 3,000 electric cars driving on Polish roads; and
- about 0.5 million cars registered annually.[256]

at ENERGA-OPERATOR SA, 1 Acta Energetica 10, 37 (2012),http://actaenergetica.org/article/en/the-smart-peninsula-pilot-project-of-smart-grid-deployment-at-energa-operator-sa.html?tab=article.

[253] USmartConsumer, *European Smart Metering Landscape Report*, 26 (2016), http://www.escansa.es/usmartconsumer/documentos/USmartConsumer_European_Landscape_Report_2016_web.pdf.

[254] *Id*.

[255] USmartConsumer, *European Smart Metering Landscape Report*, 26 (2016),http://www.escansa.es/usmartconsumer/documentos/USmartConsumer_European_Landscape_Report_2016_web.pdf.

[256] Maciej Mazur, *Poland Drives E-mobility*, Polish Alternative Fuels Association (PSPA), https://aec-conference.eu/wp-content/uploads/2018/10/11h00-03-PSPA-Maciej-Mazur.pdf.

Additionally, at the end of 2017, Poland had sold about 1,068 Electric Vehicles (EVs), up from 556 in 2016. However, in comparison with the UK, the country had only 324 public charging stations available in 2016, compared with around 7,000 in the UK.

In addition to being home to a bus manufacturing plant and a large EV battery plant, Poland has an ambitious target of having 1 million EVs on the road by 2025. Moreover, the country also aims to build 6,000 regular charging points and 400 large power charging points in 32 urban areas by 2020.[257] The achievement of these ambitious EV plans in Poland requires cooperation of all the stakeholders involved including investors, the central government and local governments. For instance, under the 2018 Electromobility Act, the local governments are responsible for the construction of the charging infrastructure within their territory and are competent to designate clean transport zones where only zero- and low-carbon vehicles can enter the area.[258]

Establishment of this infrastructure will require significant capital expenditures and maintenance outlays. This necessitates the creation of business models for financing investment and the operation of chargers, which will also be included in the current network development and modernization plans of the DSO grids.[259] There are also several innovations in the Polish electromobility by several energy companies as briefly discussed below:

- PGE: the company has invested in electric car charging infrastructure (charging stations and settlement system).
- Tauron: the company has developed a charging station and is participating in electric car sharing activities. Additionally, Tauron is involved in a project relating to active management and balancing of the network through the use of electric cars and charging stations.
- Energa: the company invests in charging infrastructure and car sharing programs.
- ENEA: as a member and co-founder of Electro Mobility Poland Project, ENEA is involved in the development of the Polish electric car.[260]

[257] *Reaching for more:3.8 billion + for the Polish energy sector*, PwC 7 (2017), https://www.pwc.pl/pl/pdf/siegac-po-wiecej-raport-pwc-2017-en.pdf.

[258] Maciej Mazur, *Poland Drives E-mobility!*, POLISH ALTERNATIVE FUELS ASSOCIATION (PSPA) (July 10, 2018), https://aec-conference.eu/wp-content/uploads/2018/10/11h00-03-PSPA-Maciej-Mazur.pdf

[259] *Reaching for more: 3.8 billion + for the Polish energy sector*, PWC (Apr. 1, 2017), https://www.pwc.pl/pl/pdf/siegac-po-wiecej-raport-pwc-2017-en.pdf

[260] *The contribution of the Polish energy sector to the implementation of*

i. Legislation

With respect to the regulatory framework, the President of the Republic of Poland signed into force an Act on Electromobility and Alternative Fuels (the "Act"), on the 5th of February 2018. The Act sets out the legal framework for Poland's EV ambition.[261] It transposes a key European directive [Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014] on the deployment of alternative fuels infrastructure. The Act defines basic terms such as charging point, charging station, electric vehicle and alternative fuels. There are several tax measures provided in the Act including excise exemptions for electric vehicles and hydrogen-powered vehicles and excise exemption for hybrid vehicles (up to January 1, 2021). Additionally, the Act also provides other incentives, such as exemption from parking fees and larger depreciation write-offs for companies. With respect to electric vehicle infrastructure, the Act provides for building a base infrastructure network for alternative fuels in agglomerations, densely populated areas, and along trans-European road transport corridors, which will allow free movement of vehicles powered by these fuels.

Besides the 2018 Act on Electromobility and Alternative Fuels, other relevant legislations include: Electromobility Development Plan for Poland; National policy framework for the development of alternative fuels infrastructure; and Act of 6th June 2018 on amending the Act on bio-components and liquid bio-fuels. These legislations are briefly discussed below:

- The Electromobility Development Plan for Poland, was adopted by the Council of Ministers on March 16, 2017. It defines benefits of widespread use of EVs in Poland and identifies relevant economic and industrial opportunities.
- The National policy framework for the development of alternative fuels infrastructure was adopted by the Council of Ministers on March 29, 2017. The policy implements European regulations regarding, among other things, conditions for building alternative fuels infrastructure in 32 Polish agglomerations.
- The Act of 6th June 2018 on amending the Act on bio-components and liquid bio-fuels was signed by the President on July 10, 2018. The Act establishes a Low-emission Transport Fund which is meant

global climate policy, POLISH ELECTRICITY ASSOCIATION (Dec. 3, 2018), https://www.pkee.pl/file/repository/RAPORT_COP24_ENG_28_11_FINAL.pdf

[261] Act on Electromobility and Alternative Fuels, Feb. 5, 2018.

to support the development of alternative fuels infrastructure. The Fund is expected to be endowed with close to PLN 6,7 billion (EUR 1.6 billion) in funds by 2027.[262] There are various projects that will be supported by the Fund including projects relating to: construction or extension of infrastructure for charging vehicles used in transport; producers of means of transport using electricity; entrepreneurs operating in the field of subassembly production for means of transport; support for public mass transport using hydrogen or electricity; and support for the purchase of new vehicles and vessels powered by hydrogen or electricity.[263]

2. E-Buses

Poland also has ambitious plans to increase the electric buses (E-Buses) market, and it is estimated that by 2025 Poland will boast the electric bus market of at least 580 million EUR (2.5 billion PLN) in value annually.[264] The country plans to increase the number of E-Buses manufactured in Poland and this is not only expected to increase job creation, but also boost the country's efforts of reducing air pollution.[265]

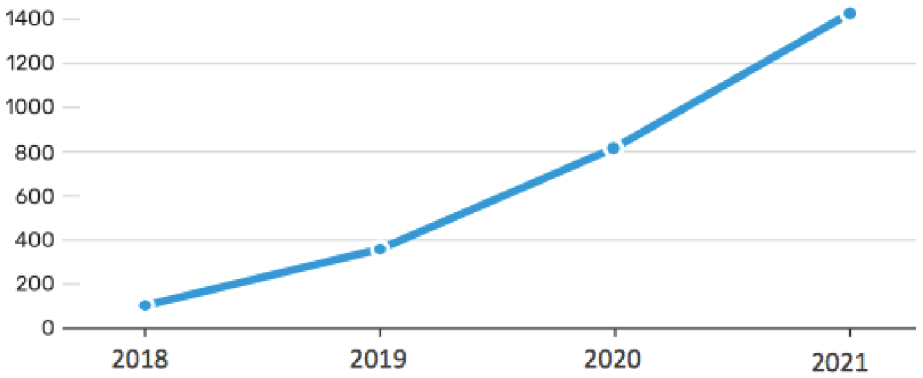


FIGURE 10: Projection of Growth of E-Buses in Poland

Source: Polish Alternative Fuels Association (PSPA), 2018

[262] Maciej Mazur, *Poland Drives E-mobility!*, POLISH ALTERNATIVE FUELS ASSOCIATION (PSPA) (July 10, 2018), https://aec-conference.eu/wp-content/uploads/2018/10/11h00-03-PSPA-Maciej-Mazur.pdf.

[263] *Id.*

[264] *Id.*

[265] *Id.*

According to Figure 10, the growth of E-buses is estimated to increase significantly from 2020 onwards. However, this projection can only become a reality if the country manages to attract the necessary investments in the sector.

In conclusion, it is imperative to note that Poland has, in recent years, been setting up initiatives aimed at increasing the number of EVs. For instance, in 2016, the Polish government set up the Electro Mobility Poland (EMP), an organization with the main aim of developing Poland's electric vehicle market. EMP has four shareholders including PGE, Tauron, Energa and ENEA, and these shareholders have invested a total of 70 million zloty into the project.[266] Despite the various initiatives including new laws on electromobility, the number of EVs in Poland is still very low. This can be attributed to the fact that the country's legal and regulatory framework did not support or provide incentives for EVs in the past. Even with the recent enacted legislations on EVs, the country still lacks regulations introducing direct subsidies or exemptions from VAT, which are the most effective instruments leading to the popularization of EVs.[267] Additionally, there are various challenges relating to: insufficient infrastructure for charging electric vehicles; high EV prices; and insufficient incentives to purchase a vehicle, just to mention but a few.[268]

3. Energy Storage

Reliance on RES, including wind and solar, necessitates the introduction of energy storage and/or combining RES units with installations that generate electricity independently from external conditions. Energy companies in Poland have been actively involved in not only RES technology developments, but also energy storage development, including hydrogen technologies aimed at storing energy generated in wind and PV installations.[269] The following companies have been involved in innovative projects in energy storage:

---

[266] Shakil Shah, *As Poland gears up for COP24 presidency, electric car development stalls*, EMERGING EUROPE (Nov. 28, 2018) https://emerging-europe.com/business/as-poland-gears-up-for-cop24-presidency-electric-car-development-stalls/.

[267] Maciej Mazur, *Poland Drives E-mobility!*, POLISH ALTERNATIVE FUELS ASSOCIATION (PSPA) (July 10, 2018), https://aec-conference.eu/wp-content/uploads/2018/10/11h00-03-PSPA-Maciej-Mazur.pdf.

[268] *Id.*

[269] *The contribution of the Polish energy sector to the implementation of global climate policy*, POLISH ELECTRICITY ASSOCIATION (Dec. 3, 2018), https://www.pkee.pl/file/repository/RAPORT_COP24_ENG_28_11_FINAL.pdf

- PGE: Energy storage with 500 kW capacity and 750 kWh usable capacity integrated with the company's solar farm.
- Tauron: Energy storage in the Silesia province with a capacity of 2MW and a usable capacity of 500kWh.
- Energa: the company is involved in the Polish-Japanese research project on the use of network load management and automation, together with hybrid energy storage to control flows after rapid changes in generation of RES sources.
- ENEA: The development of possible system services within energy storages are being analyzed. [270]

h. Data Protection

The Constitution of the Republic of Poland (Konstytucja Rzeczypospolitej Polskiej) is the starting point for data protection. Article 47 guarantees the right to privacy, whereas Article 51 specifically provides for the right to data protection. Besides the Constitution, data protection in Poland was initially legislated by the Personal Data Protection Act of August 29, 1997. On May 25, 2018 the Personal Data Protection Act ("New Data Protection Act") entered into force to help implement the EU General Data Protection Regulation (EU) (2016/679) ("GDPR").

Employment of smart meters necessitates the need to protect customer's data. In this respect, it is essential to identify the controller. The Polish Data Protection Act, defines a 'personal data controller' to mean a private or public entity that determines the purposes and means of the processing of personal data. With respect to energy companies or any other company, the controller of personal data shall be the company itself, not its bodies. It is true that different companies are involved in different activities and, as such, may require different data. In this regard, the Act makes it clear that the kind of data to be collected and purposes of processing such data has to be determined by the controller. Moreover, the Polish Act, just like the GDPR applies to both electronic records and structured hard copy records. This therefore implies that electronic records contained in smart meters are also protected.

It is essential for customers to know and understand what is happening with their data. In this respect, the Act on Polish Language requires any communication with the consumers to be in Polish. In this regard, considering the duty of the controller to provide data subjects with a privacy notice setting out how the individual's personal data

[270] *Id.*

will be processed, this implies that such privacy notices directed at consumers must be in Polish. Data protection and privacy are also major priorities at the EU level as envisaged in the establishment of a working party, an independent European advisory body on data protection and privacy which was set up under Article 29 of Directive 95/46/EC.

Enforcement of the provisions of the Polish Act is essential, in this respect, the 2018 Act made several changes including appointing a new supervisory authority, namely, President of the Office of Personal Data Protection, which replaced the Inspector General for Personal Data Protection. Additionally, just like the GDPR, which introduces fines for breach of the data protection laws, including processing personal data without satisfying the necessary conditions, the new Polish Act also provides for such fines. Additionally, criminal fines are also provided for under the 2018 Polish Data Protection Act. In this respect, the Act provides that persons who process personal data unlawfully or without authorization face a criminal fine and restriction of personal liberty or imprisonment of up to two years (three years if such processing concerns special categories of data).

There are other laws aimed at protecting data in Poland including: Banking Law Act (Ustawa—Prawo bankowe), Act on Electronically Supplied Services (Ustawa o świadczeniu usług drogą elektroniczną), and Telecommunications Law (Ustawa—Prawo telekomunikacyjne).

i. Demand Response and Energy Efficiency

Demand-side resources (DSR), including energy efficiency and demand response, play a central role in the energy market designs, including maintaining security of supply during peak demand through active behaviors of end users.[271]

Like in other EU countries, demand response in Poland is important for the cost-effective integration of intermittent renewable generation. The development of DSR in Poland is assumed to grow rapidly as confirmed by the latest certification of DSR units on Polish capacity market with offered capacity at the level of 0,84 GW in existing units and more than 1 GW in planned units.[272]

Additionally, demand response, together with energy efficiency, are often better options for balancing supply and demand. As of 2018, Poland had a total potential of contracted demand reduction amounting to 500 MW of reduction during both summer and winter season, where the maximum payment per 1 MW of hourly reduction has been set at the level of 3,200 EUR, which is several dozen more than actual market costs of 1 MWh.[273]

[271] *Id.*
[272] *Id.*
[273] *Id.*

The Polish Capacity Market Act which was adopted by parliament on December 8, 2017, recognizes demand response as one of the aspects of the internal market. The Act entered into force on January 18, 2018. Basically, the Act aims at preventing generation capacity deficits by remodeling the regulatory environment of the electricity market so as to create strong economic incentives encouraging the construction, maintenance and modernization of generating units and energy demand management on the end users side. The Act among others, allows the participation in the Polish capacity market by DSR units located in neighboring Member States, including aggregated foreign DSR (power demand reduction abroad should be viewed as equivalent to electricity export to Poland). In 2018, Polish TSO conducted several tenders during the implementation of a Guaranteed Program-which assumes additional remuneration for counter-parties for being ready to reduce and actual reduction of contracted demand on Operator's request. Another program developed by Polish TSO is a program granting payments to parties subject to the agreement for actual reduction of demand.[274]

With respect to energy efficiency, there are innovative projects employed and developed by the energy companies in Poland with the main aim of reducing electricity consumption in the processes of energy generation and transmission, as well as reducing final consumption. Some of these innovations are discussed below:

- PGE: through the VC fund, PGE is developing automatic reduction of energy consumption technology through appliance settings; additionally, PGE also has a project aimed at monitoring and controlling energy consumption by consumers. This project is called, 'Smart Energy effective management of consumption electricity at homes and in the companies.'
- Energa: the company is implementing a project which enables users to test new technologies and modern energy products from their homes. This project is called ENERGA LIVING LAB and it's being implemented in Gdynia.
- Tauron: the company started the MOBISTYLE project aimed at raising awareness of consumers regarding energy efficiency improvement.[275]

[274] *Id.*
[275] *Id.*

IV. France

a. General Overview

i. Greenhouse Gas Emissions and Renewable Energy Sources

France is considered one of the leading countries in the fight against climate change and, thus, reduction of greenhouse gas emissions, due to its active involvement in this issue globally and actions taken within the country for this purpose. The 21st Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC) and 11th Meeting of the Parties to the Kyoto Protocol (COP 21/CMP 11) was held in Paris from November 30 to December 11, 2015, as a result of which an agreement was signed. The main objective expressed in the Paris Agreement is "to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius."[276]

As an EU Member State, France has committed under Decision No. 406/2009/EC of the European Parliament and Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the EU's greenhouse gas emission reduction commitments up to 2020 (L 140/136, 5.6.2009) ("Effort Sharing Decision") and to cut down its greenhouse gas emissions up to 20% compared to 2005 based levels by 2020. Within this context, France has committed to reduce the greenhouse gas emissions at least 14% by 2020, compared to 2005 levels. France has further undertaken, under the Effort Sharing Decision, to reduce the Greenhouse Gas emissions minimum by 37% by 2030 compared to 2005 levels. Moreover, as per the Paris Climate Accord signed in 2015, France has committed to reduce carbon emissions by 27% by 2028 compared to 2013 levels and by 75% by 2050. In line with the Intergovernmental Panel on Climate Change ("IPCC") recommendations, France has also set the target of reducing its GHG emissions fourfold by 2050 compared to 1990 and the Law on Energy Transition for Green Growth sets a target of reduction of 40% by 2030.[277] The country has successfully managed to maintain

[276] U.N. Framework Convention on Climate Change (UNFCC), *The Paris Agreement* (Oct. 22, 2018), https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.

[277] Ministère de la Transition Écologique et Solidaire &Commissariat général au Développement durable, *Key figures on climate France and Worldwide* (Oct. 2015), http://www.statistiques.developpement-durable.gouv.fr/publications/p/2369/1096/key-figures-on-climate-france-worldwide-2016-edition.html.

a steady downward trend in emissions until 2015, when the decline has stopped, with some increase in 2017.[278] It is declared that 463 tons of greenhouse gases were emitted in 2016, which corresponds to 3.6% more than the country's target.[279]

Another solid move contributing to the fight against climate change was the Climate Plan of French Government, which was declared by the Minister for the Ecological and Inclusive Transition on 6 July 2017.[280] The Climate Plan sets a five-year term for the improvement of energy and climate transition for all governmental authorities by various means, such as abandoning fossil fuels and increasing the use of renewables, supporting the production and use of renewables in residential areas, raising the taxation of fuels and price of carbon, and even assisting developing countries in the fight against climate change.[281]

The emissions by sector in France can be categorized as energy use and supply, industrial processes and product use, agriculture, land-use, land-use change and forestry (LULUCF) and waste.[282] Graph 1 below shows the sector-based allocation of Greenhouse Gas emissions in France between 1990-2017.

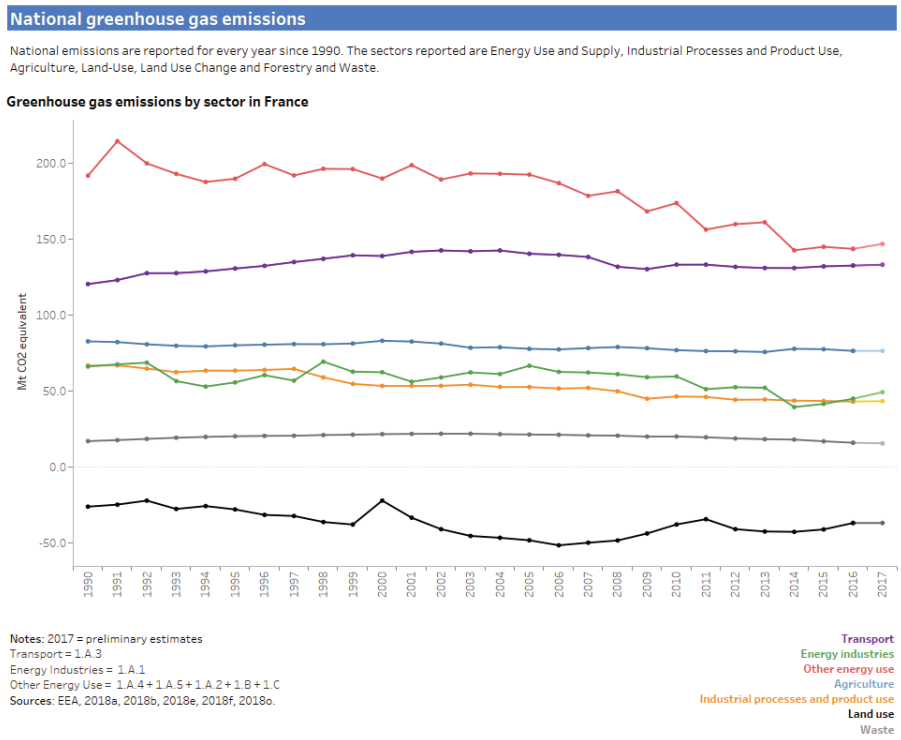
[278] *Greenhouse Gas Emissions in France,* PLANETE ENERGIES, (Aug. 27, 2018), https://www.planete-energies.com/en/medias/close/greenhouse-gas-emissions-france.

[279] *France fails to meet targets for cutting greenhouse gas emissions,* THE LOCAL, (Jan. 23, 2018), https://www.thelocal.fr/20180123/france-fails-to-meet-targets-for-cutting-greenhouse-gas-emissions

[280] Gouvernement.fr, *Government Action-France's Climate Plan*, https://www.gouvernement.fr/en/climate-plan.

[281] *Id.*

[282] European Environment Agency (EEA), Trends and Projections in France 2017 Tracking Progress Towards Europe's Climate and Energy Targets, 5 (EEA Report No. 17/2017).



GRAPH 1: Greenhouse Gas Emissions by Sector in France[283]

With an aim to cut down carbon emissions, France introduced carbon tax in 2014, which was imposed on the use of fossil fuels in sectors that are not covered by the EU-ETS, e.g. residential, service and transport.[284] Carbon tax is considered as an important instrument for achieving the decarbonization of economies, by inciting customers to switch to low-carbon alternatives of fossil fuels. This is referred to as "the internalization of externalities" in economic theory, which suggests a restoration of the real price of commodities that have a negative impact on the environment.[285] Emmanuel Macron, who became the president in 2017, under the inspiration of Paris Climate Accord and with an objective to reach the 2050 targets set for reduction in emissions, raised the carbon tax on diesel and gasoline. In 2017, French government

[283] European Environment Agency (EEA), *Country Profiles Greenhouse Gases and Energy 2018* (Nov. 26, 2018), https://www.eea.europa.eu/themes/climate/trends-and-projections-in-europe/climate-and-energy-country-profiles/country-profiles-greenhouse-gases-and-energy-2018.

[284] Climate Transparency, *France Country Profile Brown to Green: G20 Transition to a Low Carbon Economy*, 2016, https://www.climate-transparency.org/wp-content/uploads/2016/09/France_Country-Profile.pdf.

[285] Alexis R. Rocamora, *The Rise of Carbon Taxation in France: From Environmental Protection to Low-Carbon Transition, Institute for Global Environmental Strategies* 8 (IGES, Working Paper, 2017).

declared its draft budget for 2018, including its plan to further increase carbon tax on individual consumers' use of fossil fuels (e.g. transport and heating), with the exception of companies' use, in order to support renewable energy and to repay a renewables-related debt to Électricité de France ("EDF").[286]

However, this attempt to further increase carbon tax for individual consumers' use encountered strong public resistance. As a result of "Yellow Vests" (*Gilets Jaunes*) protests that took place for a couple of weeks in mid-November 2018, Macron finally declared to step back from the planned increase in carbon tax on fossil fuels, along with promises to realize certain other requests of the protestors. Therefore, for the time being, it appears that France is facing a challenge in reaching its targets for cutting down greenhouse gas and carbon emissions, unless other measures might be adopted for this purpose. In fact, France's latest attempt to increase carbon tax is criticised as being politically wrong, as it affects those who are already financially disadvantaged while providing exemptions for big corporations, and also failing to better allocate the funds to be received by this tax, in instances such as renewable energy investments.[287] Accordingly, a politically and financially well-designed form of carbon tax could be a viable option for France in near future.

ii. Current Status of Smart Energy Systems

France is considered to be amongst the pioneers in completion of the roll-out of smart meters, a player in the 'dynamic movers' in smart grid sector, which refers to countries that create a clear path toward a full roll-out of smart metering.[288] The current plan is to complete the roll-out of the Linky smart meters to all consumers by 2021.[289] This plan is based on the provisions of the Third Electricity Directive, which imposes the obligation on the operators of public transmissions and distribution networks to build mechanisms enabling suppliers to offer different prices to consumers, varying in between the times of the year and of the day, and encouraging network operators to limit consumption

[286] Bate Felix, Geert de Clercq, *France Raises Carbon Taxes, to Repay EDF Renewables Debt,* Thomas Reuters (Sep. 27, 2017), https://www.reuters.com/article/us-france-budget-carbon/france-raises-carbon-taxes-to-repay-edf-renewables-debt-idUSKCN1C21DL.

[287] Alissa J. Rubin, Somini Sengupta, *'Yellow Vest' Protests Shake France. Here's the Lesson for Climate Change*, NY Times (December 6, 2018), https://www.nytimes.com/2018/12/06/world/europe/france-fuel-carbon-tax.html.

[288] Carlo Cecati et al., *Smart Grid and Smart Homes: Key Players and Pilot Projects*, IEEE Industrial Electronics Magazine, December 2012, at 27.

[289] International Energy Agency (IEA), Energy Policies of IEA Countries France 2016 Review 134 (IEA pub. 2017).

when it reaches the highest level.[290] Consequently, France adopted a decree, whereby it has addressed these obligations by imposing the obligation to set up Linky smart meter systems.[291] Linky smart meters, deployed by Enedis, are able to measure consumption and production of electricity remotely and the data received is transmitted to a hub linked to the supervision centre of Enedis.[292] It was determined that the demonstration project Pilot Linky, which started in 2007 and concerned the installation of 300,000 smart meters, took around 75% of the total spending in France.[293]

b. Energy Profile

i. Market Participants

EDF, which was created in 1946 as a state monopoly, was engaged in the production, supply, distribution and transmission of electricity.[294] EDF still owns and operates the nuclear plants in the country. However, the relevant legislation was amended to stipulate that the generation, transmission, supply and distribution of electricity should be undertaken by different entities. Therefore, currently 87% of the electricity power plants are owned by EDF, 2.7% by Compagnie Nationale du Rhône, 2.3% by Engie and 1.9% by Uniper.[295]

On the transmission side, Réseau de Transport d'Electricité ("RTE") is the sole transmission operator in France. The company was established in 2000 as an entity of EDF, to operate alongside EDF as the grid operator. In 2005, resulting from the deregulation of the electricity market in France, RTE became a limited liability company as a subsidiary of EDF Group.[296] According to the Energy Code, EDF, the State or other public companies or entities must own together the majority of RTE capital (Art. L. 111-42).[297] In other words, France has adopted the independent transmission operator ("ITO") model in

[290] Sue Goldberg, European Energy Handbook: A Survey of the Legal Framework and Current Issues in the European Energy Sector 165 (Herbert Smith Freehills, 10th ed. 2017).

[291] *Id*.

[292] ENEDIS, *Linky, The Communicating Meter*, https://www.enedis.fr/linky-communicating-meter (last updated 2016).

[293] Vincenzo Giordano et al., European Commission, Smart Grid Projects in Europe: Lessons Learned and Current Developments, 17 (EUR 24856 EN, 2011).

[294] Michel Guénaire et al., Electricity regulation in France: overview-Practical Law, Thomson Reuters (2018).

[295] *Id.*

[296] RTE France, *From Past to Present,* https://www.rte-france.com/en/article/rte-past-present.

[297] Guénaire, *supra* note 244.

implementing the EU Third Internal Energy Package, under which RTE owns and operates the assets as the sole TSO in France, while it remains part of the vertically integrated EDF.[298] As for the distribution side, there are three types of distribution system operators ("DSO") as per the provisions of the Energy Code: (i) Enedis, which operates 95% of the metropolitan grid; (ii) local distribution companies; and (iii) EDF Systèmes électriques insulaires, for overseas territories.[299] The grids are owned by the municipalities, which enter into concession agreements with DSOs to operate them.[300] The supply side of electricity is quite vivid compared to others. According to the Ministry of Energy's records, there are 116 authorized suppliers; amongst which, however, 20 are currently active, including EDF, ENI, Total and Uniper.[301]

ii. Production and Consumption of Energy

The total electricity production in France in 2016 was around 550 TWh.[302] The main source of energy for France is nuclear power, which constitutes around 73% of its electricity generation, while renewables (hydro power, wind, solar, biofuels and waste) have a share of around 19%, gas 6%, and coal 2%.[303] France has 58 nuclear reactors operated by EDF, with a total capacity of 63.1 GWe.[304] The country's choice on the side of nuclear power lies on the background of the oil crisis in 1974, which led the country to build nuclear stations based on its high level of engineering, but few indigenous energy sources.[305] Having said that, France is aiming to reduce its nuclear power share within generated electricity by 50% by 2025, as it needs to improve its renewable sources of energy to achieve a more secure electricity supply and low carbon prints.[306] In fact, France's renewable energy sector, mainly dominated by hydro power (11% of production), is expected to reach a share of 29% to 40% in the electricity sector.[307]

---

[298] International Energy Agency (IEA), *supra* note 239, at 134.

[299] Michel Guénaire et al., Electricity regulation in France: overview-Practical Law, Thomson Reuters (2018).

[300] *Id.*

[301] *Id.*

[302] *Id.*

[303] *France Energy System Overview*, International Energy Agency, https://www.iea.org/media/countries/France.pdf.

[304] *Nuclear Power in France*, World Nuclear Association, http://www.world-nuclear.org/information-library/country-profiles/countries-a-f/france.aspx (last updated Nov. 2018).

[305] *Id.*

[306] International Energy Agency, supra note 253.

[307] *See* France's Profile *Brown to Green: G20 Transition to a Low Carbon Economy*, Climate Transparency https://www.climate-transparency.org/wp-content/uploads/2016/09/France_Country-Profile.pdf (2016).

France is considered as having acquired a high level of energy independence, although it also imports electricity. The amount of imported electricity was 36.2 TWh in 2017, which corresponded to 7.5% of the total consumption, while the amount it exports was much higher, 74.2 TWh.[308] France also exports electricity and has many interconnections with its neighbours. There are around 47 interconnections with the UK, Belgium, Germany, Luxembourg, Switzerland, Italy, and Spain, having 12 GW import and 16 GW export interconnection capacity.[309] There are new subsea cables to Spain, the UK and Ireland planned under the new EU Trans-European Network framework.[310] The amount exported in 2014 was 75.1 TWh (13% of total generated electricity) and the exports were made to the UK (21.2%), Italy (20.7%), Germany (19.7%), Belgium (15%), Switzerland (13.8%), Spain (7.9%) and Luxembourg (1.5%).[311] France's total final consumption amounted to 147.7 Mtoe in 2014, constituted by transport with 29.5%, industrial sectors with 27%, residential sectors with 25.3%, and the commercial sector with 18.2%.[312]

iii. Energy Strategy

In August 2015, France adopted the Energy Transition for Green Growth Act (*Loi relative à la transition énergétique pour la croissance verte*) (LTECV), whereby it has determined a long-term strategy for energy transition for 2030 and for 2050.[313] According to the Energy Transition for Green Growth Act, France aims to reduce its total final energy consumption by 20% in 2030 and 50% in 2050, and its fossil fuel consumption by 30% in 2030, all compared to 2012 levels.[314] The Act further aims to reach 32% of renewable energies in energy consumption, 40% of electricity production from renewable sources, 38% of heat consumption from renewable sources, 15% of end fuel consumption from renewable sources and 10% of end gas consumption from renewable sources, all by 2030.[315] The Act also regulates a support scheme as feed-in tariff system and its funding (*contribution aux charges de service public de l'électricité*) towards a market premium and calls for tender for large-scale mature renewable facilities, aiming to ensure the cost-competitiveness of renewable energies.[316] The International

[308] Guénaire, *supra* note 249.
[309] *See id.*
[310] Energy Policies of IEA countries—France 2016 Review 144 (2017).
[311] *Id.* at 120.
[312] *Id.* at 20.
[313] *Id.* at 29.
[314] *Id.* at 23.
[315] *Id.*
[316] *Id.* at 24.

Energy Agency ("IEA") has expressed its positive opinions about the legal framework set by the Energy Transition for Green Growth Act, especially on National Low-Carbon Development Strategy, five-year carbon budgets and plurennial energy programming, stating that it is an excellent achievement, which should be exemplary to the other countries.[317]

Within the scope of the Energy Transition for Green Growth Act, France has also adopted the Multiannual Energy Plan with the contribution of companies operating in energy and transport sectors, as well as consumers and local authorities. The Multiannual Energy Plan aims at complying with the obligations brought by Paris Climate Accord and the national low-carbon strategy by way of reducing energy consumption (especially of fossil fuels), developing renewable sources of energy and promoting low-carbon transport.[318]

As for energy efficiency, under the Energy Efficiency Directive 2012/27/EU, which imposes the Member States the obligation to set a national target for energy efficiency based on energy consumption, energy storage and energy intensity, France has set the objectives of reducing the final consumption to 131.4 Mtep and to 219.9 Mtep primary consumption by 2020—while the figures pertaining to 2016 are 150.3 Mtep for final consumption and 242.5 Mtep for primary consumption.[319]

c. Research and Projects on Smart Grids

France is actively engaged in research and development projects in the energy sector. Although these projects mainly concern nuclear energy, which has a crucial role for the French energy sector, there are also considerable projects concerning renewables and smart energy. The most prioritised research area is renewable energy sources, led by solar energy, and the country provides €1,000 million to develop research in clean energy and €250 million for smart grids.[320] The projects with the largest average budgets, determined as of 2014, pertain to France and United Kingdom, with around €5 million per project, and the number of D&D projects is larger than R&D projects in France.[321]

---

[317] *Id.* at 10.

[318] *The Multiannual Energy Plan*, Ministére de la Transition Écologique et Solidaire, https://www.ecologique-solidaire.gouv.fr/sites/default/files/4pages_PPE_GB_DEF_Web.pdf.

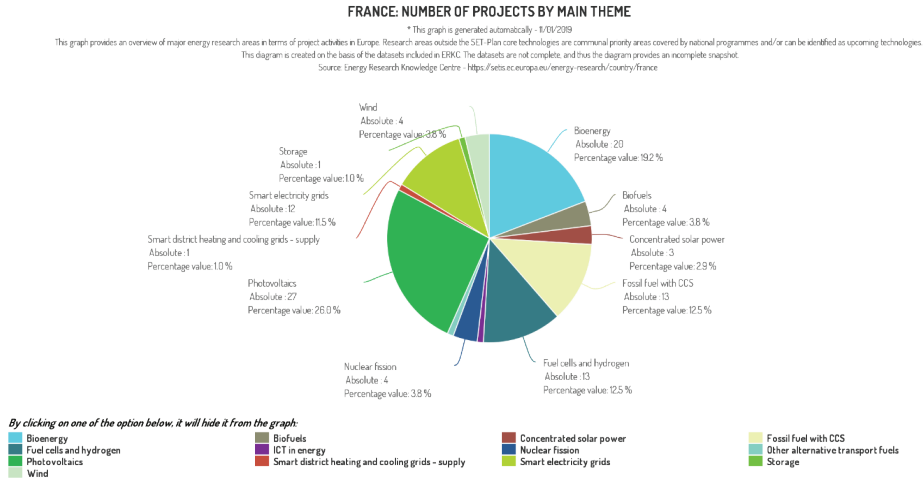
[319] Premier Ministre, *Programme National de Réforme 2018*, https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-france-fr.pdf.

[320] *France*, Energy Research Knowledge Centre, https://setis.ec.europa.eu/energy-research/country/france (last updated July 19, 2016).

[321] Illami Colak et al., *Smart Grid Projects in Europe: Current Status, Maturity and Future Scenarios*, 152 Applied Energy 58, 59 (2015).

The main basis for the research and projects is the National Strategy for Energy R&D (*Stratégie nationale de la recherche pour l'énergie*) of 2007, which included some subjects that are prioritised such as renewable energy, energy storage, fuel cells, carbon capture and storage, energy efficiency in buildings, and low carbon vehicles.[322] Thereafter, in 2015, the Energy Transition for Green Growth Act called for a renewed R&D strategy for the energy sector, addressing the need for research in climate change and low carbon strategies. The main initiative regarding the adoption of new technologies is the Program for Investment in the Future (*Programme d'investissements d'avenir*), which is focused on the environmental and energy transition on the one hand, and transportation on the other hand.[323]

Graph 2 shows the number of research and development projects in France by their main theme. Smart electricity grids are also amongst major themes of research, currently with 12 on-going projects.



GRAPH 2: Number of Projects in France by their Main Theme[324]

[322] ENERGY POLICIES OF IEA COUNTRIES FRANCE 2016 REVIEW, *supra* note 260, at 183.

[323] *Id*. at 184.

[324] Energy Research Knowledge Centre (ERKC) European Commission, *EUROPA France* (July 17, 2016), https://setis.ec.europa.eu/energy-research/country/france.

d. Electricity Market

i. Regulatory Framework

The main legislation in the energy sector in France is the Energy Code, which was adopted on May 9, 2010 by ordinance no. 2011-504 and entered into force on June 1, 2011.[325] As an EU Member State, France is also bound by the relevant EU legislation, which is mainly constituted by Directive 2009/72/EC on the common rules for the internal market in electricity[326] ("Electricity Directive").

Per the provisions of the Energy Code and the Electricity Directive, the production, distribution, and supply of electricity should not be carried out by the same entity. Accordingly, TSOs established after September 3, 2009 must separate their transport activities from production and supply (Art. L. 111-8-3 et seq,. Energy Code), while TSOs that were already vertically integrated before September 3, 2009 are allowed to keep their structure and adopt the independent transmission operator model (ITO) (Art. L. 111-9 et seq, Energy Code).[327] An example of the ITO model is the French TSO RTE, which was previously vertically integrated with EDF and has become an ITO as of 2018, while TIGF is subject to full ownership unbundling scheme. The Electricity Directive also ensured the liberalization of grid access by separating grid operators from suppliers and producers.[328]

Decree no. 2016-1442 of October 27, 2016, relating to the multiannual programming of the energy, has been adopted in order to achieve the objectives set by the Energy Code and the Energy Transition for Green Growth Act. [329] The Decree regulates the priority actions of public authorities on energy management and sets detailed objectives on reducing fossil fuel energy consumption and developing renewables in production of energy for the period between 2016 through 2023.[330]

French legislation brings an important restriction concerning foreign ownership of electricity companies. According to the Energy Code, only the State, EDF, public companies or public entities are permitted to own shares in RTE (Art. L. 111-42).[331]

---

[325] Goldberg, *supra* note 240, at 181.

[326] Council Directive (EC) 2009/72 (July 13, 2009) concerning common rules for the internal market in electricity and repealing Council Directive (EC) 2003/54 (August 14, 2009), OJ L 211, p. 55-93.

[327] Guénaire, *supra*, note 249.

[328] *Id*.

[329] Décret n° 2016-1442 du 27 octobre 2016 relatif à la programmation pluriannuelle de l'énergie [Decree n ° 2016-1442 of October 27, 2016 relating to the multiannual programming of the energy], (Oct. 28, 2016), JORF n°0252.

[330] *See id.*

[331] Guénaire, *supra*, note 249.

Law no. 2010-1488 of December 7, 2010 on the new organization of the electricity market[332] aims to ensure competition in the electricity market, amongst others, by imposing on EDF the obligation to sell and transfer some of the nuclear power plants to its competitors at a regulated price from January 2011 to the end of 2025.[333] As per the same law, regulated tariffs, which were not favoured by the European Commission due to competition concerns, have been abolished after 2015 for customers with contracts for more than 36kVA; while, for customers with contracts for less than 36kVA, the regulated tariff is still applicable.[334]

There are several methods adopted to improve the energy generation and consumption from renewable sources in France, such as feed-in tariff, premium tariff and tax benefits.[335] A quota system is used to support renewable energy in transport and there is a fiscal regulation in place to support biofuels.[336] French legislation also provides a general tax on polluting activities (*Taxe générale sur les activités polluantes*) ("TGAP") and a tax on carbon components. TGAP's aim is to encourage the use of biofuels in fuels sold by distributors, while the carbon tax is proportional to the amount of Greenhouse Gases emitted by energy products.[337] Furthermore, the electricity generated from renewable sources is sold on the market and then a variable premium is paid to the generator by EDF based on a contract to ensure a reasonable return on the investment.[338] The Energy Code stipulates that the installations that benefit from feed-in tariff systems cannot benefit also from the premium system.[339]

ii. Energy Security Dimension

France has a high number of interconnections with its neighbours. More specifically, it has around 47 interconnections with the UK, Belgium, Germany, Luxembourg, Switzerland, Italy and Spain, with 12 GW import and 16 GW export interconnection capacity, as

[332] LOI n° 2010-1488 du 7 décembre 2010 portant nouvelle organisation du marché de l'électricité [Law n ° 2010-1488 of December 7, 2010 on the new organization of the electricity market], (Dec. 8, 2010), JORF n°0284.

[333] Fabrice Fages, Myria Saarinen, *The Energy Regulation and Markets Review France 2012*, Law Business Research Ltd (2012), https://www.lw.com/thoughtLeadership/energy-regulation-markets-review-france-2012.

[334] *Id*.

[335] RES Legal European Commission, *Renewable Energy Policy Database and Support: France*, http://www.res-legal.eu/search-by-country/france/.

[336] *Id*.

[337] International Energy Agency, *supra* note 253, at 58.

[338] Goldberg, *supra* note 240, at 193.

[339] *Id*.

well as subsea cables to Spain, the UK and Ireland, planned under the new EU Trans-European Network framework.[340] RTE is in charge of operating interconnections with other countries' grids. However, there is no specific legislation regulating a third party right to operate an interconnector in France. Nevertheless, CRE has adopted a decision that operating an interconnection would be possible for a third party through the mechanism of exemption provided under Article 17 of EC regulation no. 2009/714 and subject to conditions set out in the relevant decision of the CRE.[341] The European Commission has declared that the French legislation does not allow for third party participants to be integrated in building and operating interconnectors in other member states.

Currently, the status of the smart meter rollout in France has been going as planned. The country has been successfully installing Linky smart meters under the supervision of Enedis and it plans to complete 95% of the rollout by 2020. Therefore, France gives the impression that it will reach the EU targets for smart meter rollout by 2020, which is set as 80% by 2020.

V. Finland

a. General Overview

i. Greenhouse Gas Emissions and Renewable Energy Sources

Per the European Environment Agency's 2017 country profile on Finland, the Greenhouse Gas emissions are generated from energy use and supply, industrial processes and product use, agriculture, land-use, land use change and forestry and waste.[342] Information on Greenhouse Gases is published by Statistics Finland every year, divided into different sectors. According to the latest data pertaining to 2017, the total emissions of Greenhouse Gases were reduced by almost 5%, with a figure of 56.1 million tonnes of carbon dioxide due to the decrease of consumption of the fossil fuels and increase of biofuels.[343]

EU 2020 target for greenhouse gas emissions is 20% reduction compared to 1990 levels, which is to be achieved by way of (i) Emissions Trading Directive, requiring a reduction of -21% in emission trading

[340] International Energy Agency, *supra* note 253, at 144.

[341] Goldberg, *supra* note 240, at 187.

[342] *Finland GHG and Energy 2017 Country Profile*, European Environment Agency, 3 (Nov. 2017), https://www.eea.europa.eu/themes/climate/trends-and-projections-in-europe/trends-and-projections-in-europe-2017/country-profiles-greenhouse-gases-and-energy/country-profiles-greenhouse-gases-and-energy.

[343] *Greenhouse Gases*, Statistics Finland, (May 24, 2018), https://www.stat.fi/til/khki/2017/khki_2017_2018-05-24_tie_001_en.html.

system (ETS) sectors (e.g. fuels in the heating of buildings, transport except air transport, agriculture, waste management and use of F gases) by 2020 compared to 2005 levels; and by (ii) burden-sharing decision for non-ETS sectors, which fall under the responsibility of Member States.[344] Finland's most recent data shows that the reduction rate target in the country was 16% compared to 2005 levels.[345] According to the European Commission's Country Report on Finland (2018), the country is expected to slightly miss its 2020 Greenhouse Gas emission reduction target in the non-ETS sectors by less than 1% of a point.[346] In fact, an increase was observed in 2016 in non-ETS emissions due to high emissions caused by transport, which resulted in exceeding the quota set by the EU by 1.1 million tonnes.[347]

Per the Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amended Regulation (EU) No 525/2013 ("Effort Sharing Regulation"), which sets targets for all Member States in non-ETS sectors, Finland has to achieve 39% reduction in its emissions by 2030, compared to 2005 levels. This constitutes one of the highest rates of reduction targeted for Member States, the highest being 40% for Norway and Luxembourg. A compliance check mechanism is also regulated under the Effort Sharing Regulation (Art. 9), which stipulates that in the event a Member State exceeds its permitted quote of emissions in 2027 and 2032, (i) an addition will be made to the emission figure for the next year, and (ii) the Member State will be prohibited from transferring any part of its annual emission allocation to any other Member State until it complies.

The ETS sectors, on the other hand, are regulated by the Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use; land use change and forestry in the 2030 climate and energy framework; and amending Regulation (EU)

---

[344] Ministry of Finance Publications, Europe 2020 Strategy: Finland's 2020 National Reform Programme, 32 (2018) [hereinafter Finland's 2020 National Reform Programme].

[345] *See* European Commission, *Europe 2020 Targets: Statistics and Indicators for Finland*, https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-your-country/finland/europe-2020-targets-statistics-and-indicators-finland_en#greenhouse-gas-emissions (last visited Mar. 20, 2019).

[346] European Commission, *Commission Staff Working Document: Country Report Finland 2018*, 39 (July 3, 2018), https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537359010097&uri=CELEX:52018SC0224.

[347] Finland's 2020 National Reform Programme, *supra* note 342, at 32.

no. 525/2013 and Decision no. 529/2013/EU ("Land Use, Land Use Change and Forestry (LULUCF) Regulation"). LULUCF sector is considered important in the fight against climate change, as it impacts biodiversity and ecosystems, and it is effective on the reduction of greenhouse gases. Finland has a peculiar place in respect of this regulation, as it contains the vastest forest area amongst all Member States. According to LULUCF Regulation provisions, Finland should be granted a specifically increased compensation calculated on the basis of a factor expressed as a percentage of the reported sink (meaning process, activity or mechanism that removes a greenhouse gas, aerosol or precursor to a greenhouse gas from the atmosphere) between 2000-2009 to compensate for the emissions from managed forest land, as Finland has a limited capacity to increase its forestry.

The EU is requiring Finland to increase renewable energies to supply 38% of final consumption by the end of 2020, which is planned to be achieved by way of feed-in tariff scheme for electricity.[348] The current Finnish government also aims at achieving the following targets by 2030: increasing the renewable energy's share of end-use energy consumption to more than 50%, increasing self-sufficiency to more than 55%, ceasing the use of coal, halving the use of imported oil for domestic needs and raising the share of renewable fuels in transport to 40%.[349] Finnish government appointed a National Climate Panel to act for four years from the beginning of 2016 until the end of 2019, to support climate policy planning and decision-making.[350] In addition to ratifying the Paris Climate Accord in November 2016, Finland chose to look past 2030 and passed the National Climate Change Act (609/2015), in force as of June 1, 2015, which regulates climate change policy and monitoring of the implementation of climate objectives. The Act sets a target of at least 80% greenhouse gas emission reduction by 2050, compared to 1990 levels.

ii. Current Status of Smart Energy Systems

Finnish government aims at achieving smart specialization based on smart regions by 2025 and on developing smart cities.[351] The Six City Strategy Initiative is aiming to address the need for sustainable urban development in six biggest Finnish cities; i.e. Helsinki, Espoo,

[348] *Feed-In Tariff*, Energy Authority, https://www.energiavirasto.fi/web/energy-authority/feed-in-tariff (last visited Mar. 20, 2019).

[349] Finland's 2020 National Reform Programme, *supra* note 342, at 33.

[350] *Id.* at 35.

[351] K. Halme, V-P Saarnivaara, and J. Mitchell, RIO Country Report 2017: Finland, (2018) https://rio.jrc.ec.europa.eu/en/country-analysis/Finland/country-report (select "Download the RIO CR FI 2017 English version).

Tampere, Vantaa, Oulu and Turku.[352] Finland is also hosting two EU-funded projects regarding electric robot buses (SOHJOA) and Climate Streets, which explores ways to decrease greenhouse gas emissions and energy consumption levels.[353] There is also a demo project that has been running as of 2015 in Åland Islands, which tries to build a society on 100% renewable electricity.[354] The project benefits from the autonomous structure of Åland, which provides the opportunity to adopt required legislation to support renewable electricity and contribution of citizens to electricity market.

Finland is one of the leading countries that have already begun the process of moving towards smart meters and Automatic Meter Reading (AMR) systems.[355] In fact, smart meter roll-outs have been taking place since 2014 and it is almost completed. Having said that, Finland is criticised as not having sufficient legislation in place to successfully implement and incentivise smart electricity systems.[356] As per the Governmental Decree on Settlement and Metering of Electricity Deliveries (66/2009), DSOs have been obliged to install smart meters, which was subsequently fulfilled by DSOs, thus the first steps towards smart electricity systems have been taken.[357] However, this does not seem sufficient, per se, to ensure the implementation and the use of smart grid networks. Despite these challenges, Finland offers a smart grid 2.0 system as a dynamic mover in smart grid market in the EU.[358]

b. Energy Profile

i. Market Participants

There are different players in the energy market in Finland depending on the sector. For instance, the electricity generation sector has a large number of companies, as there are no significant barriers of entry to the electricity market in Finland, provided that the requirements sought under the Energy Market Act are met and the required

---

[352] *Id.* at 28.

[353] *Id.*

[354] *The Demo*, Flexens, https://flexens.com/the-demo (last visited Mar. 28, 2019).

[355] *Smart Grid*, Invest in Finland, https://www.investinfinland.fi/smart-grid (last visited Mar. 28, 2019).

[356] Kanerva Sunila, Pertti Jarventausta, & Ari Ekroos, Legal and Regulatory Challenges in the Development of 'Smart Electricity System' in Finland, 13 (Claeys & Casteels Law Publishing 2016).

[357] *Id.* at 12.

[358] *Smart Grids*, Business Finland https://www.businessfinland.fi/en/do-business-with-finland/explore-finland/energy/smart-grids (last visited Mar. 28, 2019).

license is obtained.[359] According to the power plant registry kept by Energiavirasto, which records power plants that are producing more than 1MVA, there are over four hundred power plants in Finland.[360] The main companies operating in the generation sector are Fortum Power, Heat Oy, Teollisuuden Voima Oyj, Helen Oy and UPM Energy Oy. In the electricity transmission sector, the only national player is Fingrid Oyj, a controlling stake of which has been held by the Finnish state since 2011.[361] The reason for the State's intervention was that 50% of the company's shares were held at the time by Fortum and PVO, two power plant owners, who are not allowed to own grids as per the EU decisions. As for the distribution sector, there are around 80 distribution network operators and the main players are Caruna Oy, Caruna Espoo Oy, Elenia Oy and Loiste Sähköverkko Oy.[362] Finally, the main electricity suppliers in Finland are Fortum Oyj, Helen Oy, Loiste Sähkönmyynti Oy, Vantaan Energia Oy and Vattenfall Oy.

ii. Sources of Energy

Finland's energy is produced from different sources. As depicted in Graph 2, according to 2017 data of Statistics Finland, 67.7 TWh electricity was produced in 2017, which was slightly less than in 2016, and the amount of electricity produced by renewable energy increased to 30.7 TWh, constituting 45% of total production.[363] Finland also imports energy from Sweden, Norway, and Russia, which was reported as 24% in 2017.[364] All of Finland's natural gas and a large part of its oil, coal and nuclear fuel are imported from Russia.[365] A new floating liquefied natural gas (LNG) terminal began its operations in Pori in 2016, with three more to come, and the Baltic Connector project is expected to connect the Finnish gas grid to Baltic states which will have an impact in sources

[359] Goldberg, *supra* note 240, at 164.

[360] *Power Plant Register*, Energy Authority, https://www.energiavirasto.fi/web/energy-authority/power-plant-register (download "Power Plant Register" excel document) (last visited Mar. 28, 2019).

[361] Kim Ekqvist & Christoffer Waselius, *Electricity Regulation in Finland: Overview*, Thomson & Reuters, https://uk.practicallaw.thomsonreuters.com/7-629-2923?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1 (last visited Mar. 28, 2019).

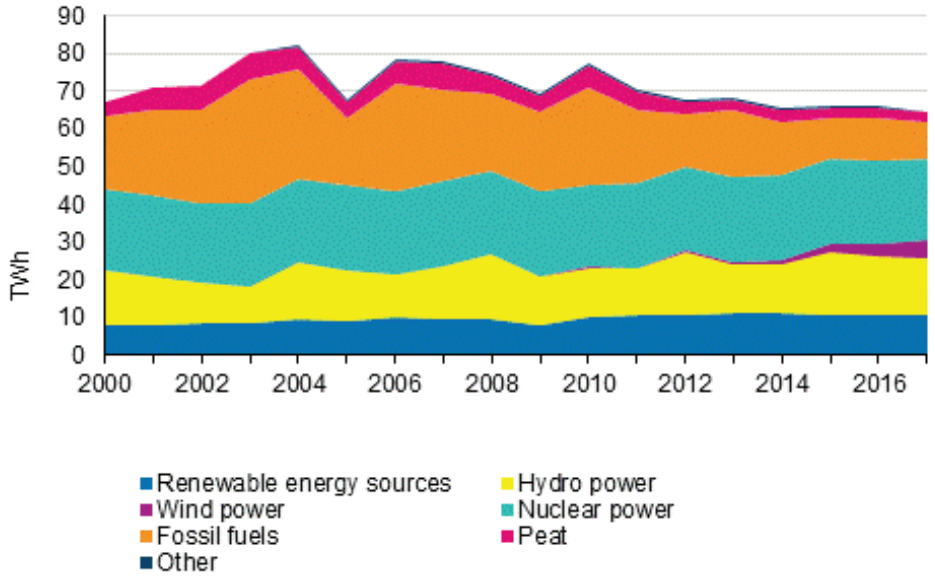
[362] *Id.*

[363] Official Statistics of Finland, *Use of Renewable Energy Grew in Electricity and Heat Production in 2017* (Nov. 1, 2018), https://www.stat.fi/til/salatuo/2017/salatuo_2017_2018-11-01_tie_001_en.html.

[364] *Id.*

[365] International Energy Agency, *Energy Policies of IEA Countries: Finland 2018 Review*, 13 (October 23, 2018), https://webstore.iea.org/energy-policies-of-iea-countries-finland-2018-review. [hereinafter Finland 2018 Review]

of imports.[366] Nuclear energy is also an important source for Finland, as 18% of the country's energy supply derives from four privately owned nuclear reactors that provide 30% of the country's total electricity.[367] Two reactors in Olkiluoto are operated by Teollisuuden Voima Oy (TVO), while the other two reactors in Loviisa are operated by Fortum Corporation. Currently, a fifth nuclear plant is under construction in Olkiluoto, and a sixth one is being planned to be constructed in Hanhikivi, which are together estimated to raise the nuclear share to 60% in total.[368] Also, Finland has abundant forests, which make it a global leader in developing second-generation biofuels.[369]



GRAPH 2: Electricity Generation in Finland in 2017[370]

The current shares in sources of energy might change in the near future depending on the new projects of Power Purchase Agreements in this sector. One of these projects is TuuliWatti's wind power project concerning the building of giving Vestas V150 wind turbines with a power output of 4.2 MW, tower height of 175m and sweep height of 250

[366] European Commission, *Country Report Finland 2018*, 40 (July 3, 2018), https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537359010097&uri=CELEX:52018SC0224.

[367] World Nuclear Ass'n, *Nuclear Power in Finland* (2019), http://www.world-nuclear.org/information-library/country-profiles/countries-a-f/finland.aspx; *See also* Waselius & Ekqvist, *supra* note 359.

[368] *See* World Nuclear Ass'n, *supra* note 365.

[369] International Energy Agency, *Finland*, https://www.iea.org/countries/Finland/.

[370] Official Statistics of Finland, *supra* note 361.

m, which will be the highest turbines in European Nordic countries.[371] The other project concerns Google's purchase of three wind farms for 10 years, which are expected to bring an extra capacity of 190 MW.[372]

iii. Consumption of Energy

The data pertaining to the first half of 2018 (from January to June) show the following figures on energy consumption: wood fuels 25%, oil 22%, nuclear power 17%, coal 9%, natural gas 6%, peat 6%, net imports of electricity 5%, hydropower 4%, wind power 1% and others 5%.[373]

The amount of gross inland consumption in Finland in 2016 was 6 ton per capita, which is well above the EU average of 3.2 ton per capita.[374] The importance of renewables in gross inland consumption in Finland was 30.7% according to 2016 data.[375] The share of fossil fuels in gross inland consumption is 46.6%, which is one of the three EU Member States with figures below 50%.[376] Finland's national target for the use of renewable sources by 2020 is 38.7%, well above the EU target of 20%, as shown in Graph 3. This target was reached for the first time in 2014, which comes as no surprise considering that the share of renewables in final consumption in Finland is the second largest in the EU.[377]

[371] Andrew Cotton, Laura Leino & Ella Rinne, *Energy 2019 Finland*, Global Legal Insights, https://www.globallegalinsights.com/practice-areas/energy-laws-and-regulations/finland (last visited Apr. 3, 2019).

[372] *Id.*

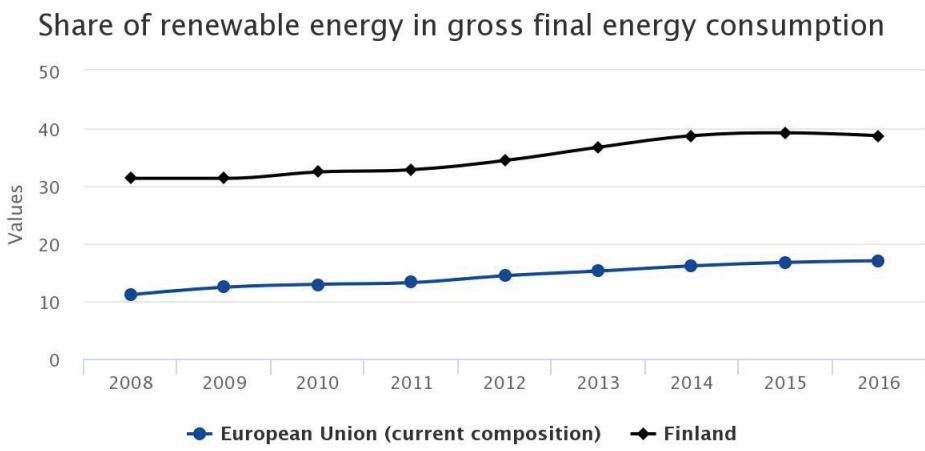
[373] Official Statistics of Finland, *supra* note 361.

[374] European Statistics, *Energy Statistics an Overview*, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Energy_dependency (last updated July, 2018).

[375] European Statistics, *Renewable Energy Statistics*, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Renewable_energy_statistics#Renewable_energy_produced_in_the_EU_increased_by_two_thirds_in_2006-2016.

[376] European Statistics, *supra* note 372.

[377] Official Statistics of Finland, *supra* note 361.



GRAPH 3: Share of Renewable Energy in Gross Final Energy Consumption in Finland[378]

iv. Energy Strategy and EU Targets

As an EU Member State, Finland is taking measures to comply with EU targets on climate and energy. The Finnish government adopted a report in 2017 setting a strategy for energy and climate for 2030 and another report in 2017 regarding its medium-term climate change plan, which together set the following: (i) cease the use of coal by 2030, (ii) use renewable energy sources for over 50%, and (iii) increase biofuels in road transport to 30%.[379] The Finnish government is also aiming that Finland will achieve the 2020 targets and support the use of low-emission energy sources through taxation.[380] The target set for 2030 concerning decarbonization is supported by investments made on renewable energy sources and biofuels. Finland applies a biofuels quota obligation to companies selling petrol or diesel fuels and also a reduced taxation for biofuels, which can both prove to be effective in reaching the 2030 target.[381]

---

[378] European Commission, *Europe 2020 Targets: Statistics and Indicators for Finland*, https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-your-country/finland/europe-2020-targets-statistics-and-indicators-finland_en#greenhouse-gas-emissions.

[379] European Commission, *supra* note 364.

[380] Ministry of Finance of Finland, *Europe 2020 Strategy, Finland's National Reform Programme, Spring 2018*, https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-finland-en.pdf.

[381] Karl Wikberg, *Promotion in Finland*, http://www.res-legal.eu/search-by-country/finland/tools-list/c/finland/s/res-t/t/promotion/sum/128/lpid/127/ (Jan. 7, 2019).

Despite important developments on the side of nuclear power, hydro power and bioenergy, the target set by the Finnish government for 2030 on halving oil demand and phasing out coal use is criticised as being rather ambitious for various reasons. Reasons include the need to ensure that biofuels are backed-up with sustainable feedstock, that there is sufficient investment in place and that these can be used in long distance transport.[382] Shifting to biomass-based combined generation of heat and power (CHP) is also required to reach the targets for 2030, as currently coal and peat play an important role in CHP.[383]

c. Governance System

The current government under Prime Minister Sipilä is known to be ambitious in achieving EU targets in energy and climate strategy. An act was put in force to implement the Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency ("Energy Efficiency Directive"). Furthermore, agreements on energy efficiency are put in place between the central government and other actors such as municipalities, industry, and services sectors[384]. The Finnish government also submitted a report to the European Parliament in January 2017 on its national energy and climate strategy for 2030. It describes the measures to be taken to achieve 2030 targets in detail.[385] The government has also appointed the National Climate Panel to serve from 2016 until the end of 2019 as a scientific and independent expert panel in respect to climate policy planning and decision making. This is a requirement of the Climate Act.[386]

i. Research and Projects on Smart Grids

Finland is one of the European countries which hosts a high number of R&D and Demo & Deployment projects. The country stands out by having a three times larger budget for R&D projects compared

[382] International Energy Agency, *Finland Shows How Bioenergy and Nuclear Can Drive the Energy Transition*, (Oct. 23, 2018), https://www.iea.org/newsroom/news/2018/october/finland-shows-how-bioenergy-and-nuclear-can-drive-the-energy-transition.html.

[383] *Id.*

[384] Europe 2020 Strategy, Finland's National Reform Programme, Spring 2018, https://ec.europa.eu/info/sites/info/files/2018-european-semester-national-reform-programme-finland-en.pdf.

[385] Government Report on the National Energy and Climate Strategy for 2030, Publications of the Ministry of Economic Affairs and Employment 12/2017, https://www.motiva.fi/files/12815/Government_Report_on_the_National_Energy_and_Climate_Strategy_for_2030.pdf.

[386] Europe 2020 Strategy, *supra* note 382.

to Demo & Deployment ones.[387] Having said that, International Energy Agency ("IEA") pointed out a recent decrease in public funding for R&D projects, which is considered detrimental to reaching clean energy goals.[388]

1. Smart Grid Working Group

There are several recent and ongoing research and projects in Finland that concern smart grids. One of these is conducted by the Smart Grid Working Group, established by the Ministry of Economic Affairs and Employment. The group has spent around two years exploring the potential of smart grids in the electricity market and finally submitted its final report to the Minister of Environment, Energy and Housing on October 24, 2018.[389] The aim of the Smart Grid Working Group is to create "a shared view of the smart electricity system of the future."[390] Some measures are suggested in the final report with a purpose to achieve active participation of the consumers in the electricity market and to improve the security of supply by proposing concrete solutions.[391] The suggestions include, among others, the introduction of market-based load demand control latest by April 30, 2021, enabling energy communities for consumers to participate in the production of energy, imposing a tax exemption for storing energy, building regulations that would favour smart charging of electrical cars in a cost-effective manner, as well as further enabling consumers to effect electricity distribution rate and ensuring cyber security.[392] The working group has also proposed that distribution network companies would no longer be engaged in load control and that a market-based and more dynamic control of consumption be achieved by April 30, 2021 through a controlled transition.[393]

---

[387] European Commission Joint Research Centre (JRC) Institute for Energy and Transport, Smart Grid Projects Outlook 2014, *A View of Smart Grid Projects in Europe: Lessons Learned and Current Developments*, https://ses.jrc.ec.europa.eu/sites/ses.jrc.ec.europa.eu/files/u24/2014/report/ld-na-26609-en-n_smart_grid_projects_outlook_2014_-_online.pdf.

[388] International Energy Agency, *supra* note 380.

[389] *See* Ministry of Economic Affairs and Employment, *Smart Grid Working Group's Proposals Aim for a Flexible, Customer-Driven Electricity System*, https://tem.fi/en/article/-/asset_publisher/alyverkkotyoryhman-ehdotusten-tavoitteena-asiakaskeskeinen-ja-joustava-sahkojarjestelma.

[390] *Id.*

[391] *Id.*

[392] *Id.*

[393] *Id.*

2. LEMENE Smart Grid Project

This project is chosen as one of the key projects, which focus on future solutions in order to enable Finland to achieve its national targets and 2030 EU targets.[394] The project is supported by the Ministry of Economic Affairs and Employment.[395] The main objective of the project is to create an energy self-sufficient business district in Marjamäki industry area in Lempäälä, where the energy will be produced by renewable energy sources, such as solar power and biogas.[396]

3. MOTIVA OY Training Programme

In 2013, the Finnish government introduced a training and certification programme for installers of grids or construction companies, which is led by the energy agency MOTIVA OY.[397] The responsible body for this programme is the Ministry of Environment. Although the programme is voluntary, it still provides an incentive for switching to renewable energy.[398]

d. Electricity Market

i. Regulatory Framework

1. The Energy Market Act

In Finland, the electricity market in general, as well as, generation and sale of renewable energy sources within the electricity market are regulated by the Electricity Market Act no. 588/2013, which has been in force since September 1, 2013. The main aim of this reform was to implement the Third Energy Package and to improve the security of electricity supply.[399]

Per Energy Market Act (Art. 20), grid operators, who will be granted license to operate, shall enter into connection agreements with plant operators that meet the relevant technical requirements.[400] It is explicitly stipulated that the conditions of this connection agreement

[394] *Lemene Project in Short*, Lemene, http://www.lempaalanenergia.fi/content/en/1/20126/LEMENE.html.

[395] *Id.*

[396] *Id.*

[397] Karl Wikberg, *Training programmes for installers*, Res Legal (Jan. 7, 2019), http://www.res-legal.eu/search-by-country/finland/single/s/res-e/t/policy/aid/training-programmes-for-installers-6/lastp/127/.

[398] *Id.*

[399] Goldberg, *supra* note 240, at 163.

[400] *Id.*

will be objective, transparent and non-discriminatory, and will also take into account the effectiveness and reliability of the electricity system.[401] Therefore, it is possible to conclude that there is no priority given to renewable energy sources in this respect.

The Act does not regulate further conditions of the mentioned connection agreement; thus, this is left to the free negotiation between the parties. The Energy Market Act (Art. 19) also regulates an obligation for grid operators to extend and develop their network to fulfil the reasonable needs of the users, which include plant operators.[402] Finally, it is stipulated that the grid operators shall provide electricity transmission and distribution services to those who need them, including plant operators (Art. 21).[403] Furthermore, under the Electricity Market Act, the DSOs and, more generally, companies operating in electricity sector are responsible to promote efficient and economical use of electricity.[404]

2. Subsidies and Incentives

Finland offers both subsidies and premium tariff for R&D projects and electricity producers with an ultimate aim to promote and incentivise the use of renewable energy sources in the production of electricity. There are two types of subsidies that are both granted by the Finnish state. The first one, the "energy aid," is granted for investments made on the production of or research projects on renewable energy, subject to the provisions of Decree no. 1063/2012.[405] The second type of subsidy is the investment aid for renewable energy and new energy technologies, which is granted against a fixed assets investment subject to the provisions of Decree no. 145/2016.[406] Both subsidies are granted and the whole process is led by the Ministry of Economic Affairs and Employment. The premium tariff, on the other hand, is granted to the producers of electricity from wind, biogas, and biomass on top of the wholesale electricity price for 12 years.[407] Electricity producers who fail

---

[401] *Id.*

[402] Energy Market Act § 19 (1995).

[403] Energy Market Act § 21 (1995).

[404] Kanerva Sunila, Pertti Jarventausta & Ari Ekroos, *Legal and Regulatory Challenges in the Development of 'Smart Electricity System' in Finland*, 7 Renewable Energy L. & Pol'y Rev. 3, 19 (Dec. 2016).

[405] Karl Wikberg, *Subsidy I (Energy Aid)* (Jan. 7, 2019), http://www.res-legal.eu/search-by-country/finland/single/s/res-e/t/promotion/aid/subsidy-energy-aid/lastp/127/.

[406] Karl Wikberg, *Subsidy II (Investment Aid for Renewable Energy and New Energy Technologies)* (Jan. 7, 2019), http://www.res-legal.eu/search-by-country/finland/single/s/res-e/t/promotion/aid/subsidy-ii-investment-aid-for-renewable-energy-and-new-energy-technologies/lastp/127/.

[407] Karl Wikberg, *Premium tariff* (Jan. 7, 2019), http://www.res-legal.eu/

to produce electricity in accordance with the bid shall compensate the government for the underproduction.[408] In order to benefit from premium tariff, (i) the plant or the system must be located in Finland or in Finnish waters and be connected to the grid; and (ii) the project must fulfil economic and technical requirements sought for electricity generation (under the provisions of Act no. 1396/2010 on the Production Subsidy for Electricity Produced from Renewable Energy Sources).[409]

Recently, new legislation was enacted introducing a new support scheme for renewable energy in Finland. The Government Bill no. 175/2017 on Renewable Energy, which proposed that certain provisions be included in the Act on Subsidies for Electricity Produced From Renewable Energy Sources (1396/2010) regarding a premium system based on a technology-neutral tender process, was approved by the government and the amended Act entered into force on June 25, 2018.[410]

3. Unbundling

Vertical disintegration of the electricity industry is considered important for the integration of smart grid systems. For this purpose, within the EU, the DSOs are not allowed to operate in generation and retail markets for electricity and this leads to the creation of an open and competitive market for generation and supply.[411] In addition to the mentioned legal unbundling, it might also be efficient to have ownership unbundling to ensure competition in the relevant markets, which is currently relevant for the TSOs.[412] In fact, the approval of an undertaking as a TSO is conditional upon it being certified to have complied with the ownership unbundling requirements stipulated in Article 9 of the Electricity Directive.[413] As an example of ownership unbundling, it is worth mentioning that in July 2017, 53.14% of Finnish TSO Fingrid was

search-by-country/finland/single/s/res-e/t/promotion/aid/premium-tariff-2/lastp/127/.

[408] Christoffer Waselius & Kim Ekqvist, *Electricity Regulation in Finland: overview*, Thompson Reuters Practical Law (Jul. 1, 2018), https://uk.practicallaw.thomsonreuters.com/7-629-2923?transitionType=Default&contextData=(sc.Default)&firstPage=true&comp=pluk&bhcp=1.

[409] Andrew Cotton, Laura Leino & Ella Rinne, *Energy 2019 / Finland*, Global Legal Insights (GLI), https://www.globallegalinsights.com/practice-areas/energy-laws-and-regulations/finland.

[410] *Id.*

[411] Hugo Scotman, *Smart Grids: A European Regulatory Perspective*, Energy Regulation Quarterly Vol. 2 (Sept. 2014).

[412] *Id.*

[413] National Report 2017 to the Agency for the Cooperation of Energy Regulators and to the European Commission, 16 (Energy Authority Finland, Ref: 1469/401/2017, Dec. 7, 2017). [hereinafter National Report 2017)

owned by the State and the National Emergency Supply Agency, and the remaining shares by Finnish financing and insurance institutions.[414]

As for the DSOs in Finland, most of these are legally, organizationally and operationally unbundled from the electricity production and supply.[415] As per the provisions of the Electricity Market Act, the network operations must be legally unbundled from trade operations and electricity generation in case the annual amount of electricity transmitted through the relevant network operator's 0.4 kV network has been at least 200 GWh for three consecutive days.[416] In 2016, there were 36 DSOs that satisfied this criteria, which were legally obliged to be unbundled and also others that would be voluntarily unbundled, reaching a total number of 48 DSOs that were legally unbundled in 2016.[417] DSO is seen as a neutral market facilitator in the EU; thus, providing the competed markets for platforms and information on new services, while refraining from influencing them.[418] Finnish Energy Authority's approach also seems to be in line with the EU's. Yet, the role of the DSOs begs for further clarification in respect of unbundling; i.e. which operations would be deemed to fall within scope of electricity transmission and distribution market where the DSOs should not be active.

ii. Energy Security Dimension

Finland's electricity market is dynamic and competitive, mostly because of the common use of smart meters and the availability for switching in between suppliers. The country is part of the intra-Nordic power system, which comprises Sweden, Norway, and Eastern Denmark, together with Finland. The intra-Nordic power system is also connected to Continental Europe through direct current transmission systems; namely, from Sweden to Germany, Poland to Lithuania, from Norway to the Netherlands, and from Finland to Russia and Estonia.[419] There is also an interconnection built in 2015 between mainland Finland and Åland Islands with a capacity of 100 MW, which is to ensure security of supply for Åland Islands.[420] The electricity interconnection level in 2017 is reported as 29%, while the 2020 target is at least 10%.[421]

[414] *Id.* at 7.

[415] Sunila et al. *supra* note 354, at 13.

[416] National Report 2017, supra note 411, at 7.

[417] *Id.* at 16.

[418] Sunila et al., *supra* note 354, at 14.

[419] *Nordic Power System and Interconnections with Other Systems*, Fingrid, https://www.fingrid.fi/en/grid/electricity-system-of-finland/nordic-power-system-and-interconnections-with-other-systems/ (last visited Mar. 23, 2019).

[420] Goldberg, *supra* note 240, at 165.

[421] *Commission Staff Working Document, Country Report Finland*

Accordingly, the countries should arrange to have at least 10% of the electricity produced in their country to be transported across borders to their neighbours.[422] Nevertheless, there is insufficient capacity in interconnections during periods of high demand, which negatively affects the wholesale electricity prices.[423] Interconnectivity has proved to be important in ensuring security of supply, especially in case of failures due to unfavourable weather conditions or similar circumstances, by importing electricity from neighbour countries.

National Regulation Authority's competence might also be important to determine the status of security of supply. In the case of Finland, the Capacity Reserve Act authorizes the Energy Authority to decide on the required size of peak load reserve capacity and to arrange tenders to choose power plants and consumption units for this purpose.[424] Based on this authority, in 2016 the Energy Authority commenced its work to purchase peak load reserve capacity for the period between July 2017 and June 2020.[425]

Energy intensity, which is seen as a measure of energy efficiency, was considerably reduced in EU Member States due to energy savings made between 2005 and 2015. However, Finland (-7.8%) was recorded as one of the three Member States, along with Estonia and Greece, where the reduction of energy intensity was below 10%.[426]

Energy security is a crucial issue for Finland, which remains to be dependent on imports from Nordic states and Russia. Fingrid has been putting in an effort to strengthen the interconnections with Sweden and integration with Baltic states, as well as the improvement of smart grids, all with an aim to improve electricity security.[427]

As for smart meter rollouts, the EU is aiming to reach an 80% rollout by 2020 by replacing the electric meters with smart ones. The European Commission has issued a proposal for a directive on common

---

2018: 2018 European Semester: Assessment of Progress on Structural Reforms, Prevention and Correction of Macroeconomic Imbalances, and Results of In-Depth Reviews under Regulation (EU) No 1176/2011, European Commission, at § 3.5.2 (July 3, 2018), https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1537359010097&uri=CELEX:52018SC0224. [hereinafter Regulation (EU No. 1176/2011)]

[422] *Electricity Interconnection Targets*, European Commission, https://ec.europa.eu/energy/en/topics/infrastructure/projects-common-interest/electricity-interconnection-targets (last visited Mar. 23, 2019).

[423] Regulation (EU No. 1176/2011), *supra* note 419, at § 3.5.2.

[424] National Report 2017, supra note 411, at 10-11.

[425] *Id* at 11.

[426] *Archive: Consumption of Energy*, Statistics Explained, (Sept. 2018), https://ec.europa.eu/eurostat/statistics-explained/index.php/Consumption_of_energy.

[427] Finland 2018 Review, *supra* note 363, at 4.

rules for the internal market in electricity,[428] whereby it has expressed that as a part of the active participation of consumers in electricity market and more specifically in demand response, it would be beneficial to entitle them to request smart meters from their suppliers. Finland has almost completed its nation-wide smart metering roll-outs. From the beginning of 2014, 97% of automated meter readings were completed, which were generated from around 3.2 million smart meters.[429] According to data pertaining to 2016, smart meters were installed in around 99% of consumption places.[430]

e. Smart Metering Systems

The electricity networks in Finland are part of the inter-Nordic system along with Sweden, Norway and Eastern Denmark, which is connected to Continental Europe via direct current transmission links, also with links to Russia and Estonia.[431] The current transmission grid is built with air insulation, thus the substations are outdoors and transmission lines are overhead, instead of underground cables which are expensive due to long distances in Finland.[432]

The Finnish government is actively engaged in an ambitious goal to diffuse the use of smart energy. It is noted that by September 2018, EUR 80 million has been granted to 18 projects to support biogas use in transport, smart energy and demand-response services.[433] The Smart Grid Working Group, established by the Ministry of Economic Affairs and Employment, has submitted its final report on October 24, 2018. The working group has set the timeframes for fulfilling the suggested changes as between 2019-2021 in order to achieve a consumer-centric and efficient smart electricity system. As also pointed out by Fingrid, the majority of the suggestions require changes in legislation, in addition to an active cooperation between various stakeholders, such as combined billing for distribution.[434]

---

[428] Proposal for a Directive of the European Parliament and of the Council on Common Rules for the Internal Market in Electricity, (Brussels, 23.2.2017, COM (2016) 864 final/2, 2016/0380 (COD)).

[429] *My Country*, My Smart Energy, http://my-smart-energy.eu/my-country/finland#country-area (last visited Mar. 23, 2019).

[430] National Report 2017 *supra* note 411, at 5.

[431] *Electricity System of Finland*, Fingrid, https://www.fingrid.fi/en/grid/electricity-system-of-finland/.

[432] *Id.*

[433] Finland 2018 Review, *supra* note 363.

[434] *Ambitious Smart Grid Cooperation Should Continue to Promote Customer-Centric Electricity Markets*, Fingrid, https://www.fingrid.fi/en/pages/news/news/2018/ambitious-smart-grid-cooperation-should-continue-to-promote-customer-centric-electricity-markets/.

Finland is amongst the first countries to have completed the roll-out of smart meters; it has, therefore, already reached the target of supplying 80% of the consumers with smart meters by 2020. This enables the consumers to actively participate in the electricity market and improves demand response and flexibility. In fact, Finland was the first country in the world that adopted smart electricity metering (hourly metering and remote reading) on a large scale and completed the transition to hourly-level metering on January 1, 2014.[435] The DSOs are responsible bodies for the installation of smart meters. Most DSOs had already installed remotely read smart meters in 2009-2014, which should be renewed and replaced with the next-generation meters soon, as the technical lifetime of these meters is known to be around 10-15 years.[436]

The legislation concerning smart meters is Government Decree no. 66/2009 on Determination of Electricity Supply and Metering, which came into force in 2009. The Decree stipulates that the DSOs have an obligation to measure electricity consumption and small-scale power generation based on hourly metering and remote reading of the equipment (Chapter 6, Section 4). However, the DSO is entitled to deviate from this obligation for up to 20% of the electricity distribution points if any of the exceptions set out in the Decree occur. The Decree determines minimum requirements for smart metering system (Chapter 6, Section 5), which includes a remote reading feature that enables the collected data to be read from the hardware memory through the network and certain requirements concerning the storage of measurement data and data protection system of the metering system.

f. Demand Response

There are two types of demand response, depending on their level of interaction with consumers, which are complementary to each other: (i) explicit demand response, which provides direct incentives or payments to consumers to make them change their patterns of consumption; and (ii) implicit demand response, whereby consumers react to dynamic market or network pricing signals.[437]

Demand flexibility is considered an important factor in achieving efficiency. In the event that the prices of electricity would vary according to consumption, this could motivate consumers in opting

[435] *Finnish Energy's Position on the Features of Next-Generation Electricity Meters*, Energiateollisuus, (Jun. 15, 2017), https://energia.fi/files/1697/Finnish_Energy_position_paper_features_of_next_generation_electricity_meters_final_20170810.pdf.

[436] *Id.*

[437] Smart Energy Demand Coal., *supra* note 301.

to use smart systems, which would in turn lead to the dissemination thereof. The European Commission considered demand response crucial for charging electric vehicles ("EV") and thus integrate EVs into the electricity grid.[438]

Under the EU legislation, the Energy Efficiency Directive (2012/27/EC) is crucial for the improvement of demand response. According to this Directive, Member States shall ensure that any incentives in tariffs that might hinder the participation of demand response in balancing markets and ancillary services are removed, and that network operators and suppliers are incentivised in improving consumer participation, including demand response (Art. 15.4). The Directive also requires that the Member States take measures to ensure consumer access to the market (Art. 15.8).

Finland is one of the countries that provides a regulatory framework for demand response, with actual steps taken towards the improvement thereof. Although all ancillary services are open to demand response, the aggregation of resources from different balancing groups is permitted only for frequency containment reserve for disturbances (FCR-D), which limits demand response in other reserve markets.[439] There are also pilot projects concerning the development of aggregation models in the balancing energy markets. One of them is led by Fingrid, where it is aimed to enable aggregation from multiple balances and independent aggregator participation in the regulating power market.[440] The project started in early 2018 and planned to be continued for one year, with the participation of Helen Oy, a retailer and electricity producer, and Voltalis S.A., an aggregator. Despite these improvements and pilots concerning demand response, there are no incentives for DSOs for demand response and, thus, the role of DSOs in controlling flexibility is deemed rather unclear.[441]

In Finland, prices for both industrial and household consumers are low when compared with the EU average. This gives the consumers the opportunity to agree with spot-market price linked electricity retail contracts, whereby demand response is encouraged by hourly changing prices.[442] As the roll-out of smart meters has been almost fully completed,

---

[438] *Proposal for a Directive of the European Parliament and of the Council on Common Rules for the Internal Market in Electricity*, COM(2016) 864 final/2, (Nov. 30, 2016), *available at* https://ec.europa.eu/transparency/regdoc/rep/1/2016/EN/COM-2016-864-F2-EN-MAIN-PART-1.PDF.

[439] Smart Energy Demand Coal., *supra* note 301, at 75.

[440] *Aggregation Pilot Project in the Balancing Energy Markets*, Fingrid https://www.fingrid.fi/en/electricity-market/the-future-of-the-electricity-markets/askelmerkit-sahkomarkkinamurrokseen/aggregation-pilot-project-in-the-balancing-energy-markets/.

[441] Explicit Demand Response in Europe*, supra* note 435, at 76.

[442] Sunila et al. *supra* note 354, at 20.

the end-users are able to participate in the market and have wholesale spot price pass through retail electricity prices.[443] As IEA notes in their 2018 report, "In Finland, demand participates actively in the reserve markets of the TSO Fingrid but its volume is low in the medium-term strategic reserve organised by the EA…."[444]

Finland is considered a pioneer amongst its Nordic neighbours due to allowing independent aggregation in ancillary services and its advanced provisions for measurement and verification.[445] The Finnish government is actively working on ensuring a more flexible power system. For this purpose, it has reduced barriers for small players to participate in the balancing market, increased transparency of balancing power prices, adopted successful demand response pilot schemes, completed the roll-out of mart meters and increased hourly spot-based retail prices—which in turn created around 500 MW of demand response capacity in the wholesale market.[446] Smart Grid Working Group's work has also been beneficial in enabling consumers to engage with demand response and, thus, facilitating the switch to smart energy system.[447]

g. Data Protection

There are two aspects of cyber security for smart grids: (i) the protection of consumer data, which includes data ownership, privacy and anonymity issues, and (ii) critical infrastructure related issues, such as prevention of cyber-attacks, hacking and service blockings.

As an EU Member State, Finland is subject to the EU regulation on data protection. The General Data Protection Regulation (2016/679 OJ L 119, May 4, 2016) ("GDPR"), which was approved by the EU Parliament on April 14, 2016 and was enforced on May 25, 2018, regulates the protection of natural persons for processing and free movement of their personal data by an individual, a company or an organization. The GDPR is directly applicable in all Member States and it aims to harmonize data protection legislations of the Member States to ensure a consistent and high level of protection for personal data in flow within the EU (para. 10, Preamble of GDPR).

The Finnish Government has submitted a proposal to Parliament regarding the implementation of the GDPR,[448] whereby it is proposed to issue a new Data Protection Act in line with the GDPR and to repeal

[443] Finland 2018 Review, *supra* note 363, at 117.

[444] *Id.*

[445] Explicit Demand Response in Europe*, supra* note 435, at 11.

[446] Finland 2018 Review, *supra* note 363, at 123.

[447] *Id.* at 124.

[448] *Government's Proposal to Parliament for Supplementing EU GDPR*, Finlex (HE 9/2018 vp), http://finlex.fi/fi/esitykset/he/2018/20180009.

the Personal Data Act (1999/523) and the Act on Data Protection Board and the Data Protection Ombudsman (1994/389). The Parliament is still reviewing the proposed act and therefore, the new legislation is yet to be enacted. Currently, the provisions of the Personal Data Act (1999/523) and the GDPR would apply to any issue concerning data protection and privacy. Having said that, the provisions of the Personal Data Act that conflict with the GDPR cannot be applied, as per the principle of precedence of EU law.

Smart grids and smart metering systems collect information on consumers' electricity consumption and, thus, are recognized as having a potential to process personal data, as was expressed in the Commission's Recommendation on the Data Protection Impact Assessment Template for Smart Grid and Smart Metering Systems,[449] which referred to the relevant EU legislation in force at the time, i.e. the Directive 95/46/EC of the European Parliament and of the Council of the European Parliament and of the Council of October 24, 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data, which was repealed on May 24, 2018 by GDPR. Finnish Energy, Energiateollisuus, is also of the view that data protection and data security are crucial in dissemination of the consumption data of the consumers sand that access to such data should only be possible with the consumer's authorization.[450] In fact, the Government Decree no. 66/2009 on Determination of Electricity Supply and Metering requires that the metering data and the information on voltage-free periods are entered in the DSO's data system that processes metering data, in which the hourly metering information must be stored for at least six years, and the data on voltage-free periods for at least two years (Chapter 6, Section 5).

As an important improvement for the Finnish electricity market, a hub called 'Datahub' will be created to be effective in autumn 2019 for the storage of data between consumers, suppliers and DSOs, whereby the data will be available to all market actors.[451]

---

[449] Commission's Recommendation of 10 October 2014 on the Data Protection Impact Assessment Template for Smart Grid and Smart Metering Systems, 2014 O.J. (L 300) 63, 63, *available at* https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014H0724&from=SK.

[450] *Finnish Energy's Position on the Features of Next-Generation Electricity Meters,* Energiateollisuus 1, 4 (June 15, 2017), https://energia.fi/files/1697/Finnish_Energy_position_paper_features_of_next_generation_electricity_meters_final_20170810.pdf.

[451] *Id* at 8.

h. Electric Vehicles and Storage

i. Electric Vehicles

The use of EVs in Finland is observed to grow slowly, especially compared to other Northern countries like Sweden and Norway, mainly based on the reason that electric cars are more expensive than conventional ones and that consumers treat new trends with caution.[452] Decarbonisation of transport is, however, a crucial step to reach EU 2030 targets, as the emissions from conventional cars form an important obstacle in this respect. In fact, around 20% of Finland's emissions are caused by transport.[453]

Finland's Ministry of Transport and Communications has issued the Climate Change Policy (ILPO) in 2009, whereby it has declared its targets on transport to reach 2020 targets on emissions. According to this policy, biofuels will make up to 20% of the energy for transport in Finland by 2020, which is favourable for reduction of emissions as biofuels are carbon-neutral.[454] However, progressive targets on biofuels might have an adverse effect on the use of electric cars.

According to the information provided by Fingrid, which is updated in January 22, 2018, the number of electric cars in Finland is around 7,000, while the minimum number of electric cars that Finland should have by 2030 to be able to reach its EU 2030 targets is 250,000.[455] Furthermore, according to data gathered by the European Alternative Fuels Observatory, updated on October 29, 2018, amongst the alternative fuels passenger cars, the majority belongs to plug-in hybrid electric vehicles (PHEV) with 8,012, followed by battery electric vehicles (BEV) with 1,687 in 2018.[456] Throughout the years, a decrease can be observed in compressed natural gas (CNG) vehicles and a dramatic increase in PHV. This was, in fact, foreseen by VTT Technical Research Centre of Finland, which was contracted by the Ministry of Transport and Communications in 2010 to analyse the future of EVs in Finland. As per the findings in VTT's report, PHEV is found more suitable for Finland as they are more practical and cost-effective compared to BEV, especially in the case of Finland where driving distances are long.[457]

---

[452] Heikkilä, Tuukka, *Electric Traffic is an Opportunity for Finland*, Finnish Energy, https://energia.fi/en/advocacy/energy_policy/electric_traffic.

[453] Finland Policies and Legislation, International Energy Agency HEV TCP, http://www.ieahev.org/by-country/finland-policy-and-legislation/.

[454] *Id.*

[455] *Sustainability with Electric Cars*, Fingrid, https://www.fingridlehti.fi/en/sustainability-with-electric-cars/.

[456] *Country Detail Vehicles and Fleet,* European Alternative Fuels Observatory, https://www.eafo.eu/countries/finland/1732/vehicles-and-fleet.

[457] *Finland Research*, International Energy Agency HEV TCP, http://www.

The Finnish government has taken certain steps to develop the EV market. Tekes, which used to be the Finnish Funding Agency for Innovation and the predecessor of Business in Finland, ran a five-year programme on the implementation of electric vehicle systems in Finland between 2011 and 2015, the findings of which were reflected in a report.[458] The main objective of this programme is expressed "to create an electric mobility ecosystem that could generate new knowledge and competence in EV related technologies and services."[459] Five consortia were formed that focused on electric passenger traffic and services, electric commercial vehicles, testing services for EVs, testing environments for EVs and ecological urban living, without specific focus on automotive industry.[460] The programme is believed to be beneficial for business development of EV market in Finland.

Furthermore, an amendment was made in the Electricity Market Directive, whereby dynamic pricing was introduced to facilitate smart charging and the aggregation of EVs.[461] The amended Electricity Market Directive provides for dynamic pricing to facilitate smart charging, and the aggregation of EVs to enable the best use of their economic potential from demand response—including vehicle-to-grid services. Despite some efforts, the Finnish government is still criticised as not being sufficiently supportive of EVs. Some suggestions of providing further support are the introduction of a direct consumer subsidy, an employment vehicle benefit, or higher taxation on combustion vehicles.[462] In fact, the taxation option is applied by Norway, which sets a good example for the use of EVs in the EU, with an estimate of 210,000 EVs according to the data from January 2018.[463]

The planned increase in the use of EVs is not expected to create an unmanageable increase in Finland's electricity consumption. However, as Finland is still highly dependent on electricity import from neighbouring countries, it is worth questioning whether its dependence might increase, especially in cold winter weather. The use of 250,000 EVs, as planned, is expected to increase the need of electricity up to 100-200 MW during a cold day, which would constitute an increase

---

ieahev.org/by-country/finland-research/.

458 Markku Antikainen, *EVE Electric Vehicle Systems 2011-2015*, Tekes 1, 6 (2016), https://www.businessfinland.fi/globalassets/julkaisut/eve_final_report.pdf?_t_id=1B2M2Y8AsgTpgAmY7PhCfg%3D%3D&_t_q=eve&_t_tags=language%3Afi%2Csiteid%3A53b34a16-7ce7-4ab0-8c7e-f06c83547e28&_t_ip=193.65.255.1&_t_hit.id=Finpro_Web_Features_MediaData_GenericMediaData/_a390ee23-81f6-46f4-9b22-8bc70b8b5015&_t_hit.pos=1.

459 *Id.*

460 *Id.*

461 Finland 2018 Review, *supra* note 363, at 78.

462 Sustainability with Electric Cars, *supra* note 453.

463 *Id.*

of 1% at the highest point of Finnish electricity consumption (around 15,200 MW).[464]

One of the suggestions to increase the use of EVs is to lift the double taxation on them, as a tax is paid when the vehicle is being charged and also when the energy is being fed to the grid[465]. This is especially crucial for small EVs that are used by consumers, to allow them to participate in the market. Having said that, the use of these vehicles would not increase merely on tax reasons, as there are also other factors. Subsidies and tax benefits should also apply to charging stations in order to incentivize investments in this field, which is crucial for the EV market. It is also important to have sufficient infrastructure in place to implement and diffuse EVs. It was, in fact, one of the findings of VTT in their report of 2010 that Finland needed to build battery charging stations and adopt required legislation to support the roll-out of EVs.[466]

IEA, in its 2018 report on Finland, puts forward certain suggestions for the Finnish government concerning transport sector: (i) reviewing the energy fuel taxation and subsidies to reflect full carbon content to accelerate the switch to low emission technologies; and (ii) raising the ambitions for vehicle efficiency and the roll-out of zero emission vehicles and adopting fiscal instruments and local traffic measures to enable Finland to reach its 2030 targets.[467]

ii. Storage

Electricity storage enables customers to influence the costs of electricity consumption and to enter the market through their electricity storage tools. In fact, the electricity storage provides the customers with options to not use electricity at the times when the costs are higher and use electricity from their batteries. Smart Grid Working Group is of the opinion that network companies should not be included in the market for electricity storage services, as these have a role of neutral market facilitator and have monopoly unbundling obligations.[468] Thus, electricity storage should be seen as a market-based activity. In this manner, DSOs may also be able to participate in storage services, considering that the operation of storage is a supporting activity for network operations.[469] The

[464] Mikko Heikkilä, *Electric Cars, Threat or Opportunity?*, Fingrid (Nov. 21, 2018), https://www.fingridlehti.fi/en/electric-cars-threat-or-opportunity/.

[465] *Id.*

[466] Finland Research, *supra* note 455.

[467] Finland 2018 Review, *supra* note 363 at 16.

[468] Tatu Pahkala, Heidi Uimonen, and Ville Väre, *Flexible and Customer-Centered Electricity System Final Report of the Smart Grid Working Group*, Ministry of Economic Affairs and Employment 1, 15 (2018), https://julkaisut.valtioneuvosto.fi/bitstream/handle/10024/161147/TEM_39_2018.pdf?sequence=1&isAllowed=y.

[469] Sunila et al. *supra* note 354, at 21.

composition of the actors in the electricity storage market is expected to be soon reflected in the relevant EU legislation.

Finland is considered as an interesting case for energy storage. This is due to the variable energy generation sources depending on the season, its requirement for reliable supply to ensure that the needs of both individual customers and industries are met and the 80-85% of greenhouse gas emission reduction target it has set for 2050.[470] There are different types of energy storage systems used in Finland. In summer, solar power reaches its peak, while wind energy is mainly produced in winter, and hydro power's most fruitful time is spring, especially in May.[471] On the other hand, demand for energy rises significantly in winter, when the temperatures are low and the days are shorter, which emphasizes the importance of energy storage systems in Finland.[472] It is determined that solar power and wind power constitute around 60% of total energy consumption, out of which around 51% is stored, while 21% of hydro power energy consumption is subject to storage. Additionally, vehicle-to-grid (V2G) connections cover 87% of demand and thermal energy storage covers only 4% of end-user heat demand.[473]

Currently, the FLEXe-demo project that is run in the Åland Islands provides a significant source to test electricity storage. Recently, the engineering and consultancy firm Pöyry PLC has been selected as Energy Storage Cluster for the project, which is managing the storage system with an objective to survive winter on renewable sources by short-term grid stabilisation and long-term seasonal storage capacity.[474] In the opinion of the experts, it is challenging to optimise energy storage to compensate summer-winter variation in Finland and also to ensure the stability, security and economic viability of the system.[475]

Furthermore, Fortum and the French battery company, Saft, signed a contract in 2016 regarding the supply of a €2 million megawatt-scale lithium-ion battery energy storage system for Fortnum's Suomenoja power plant, which will have a nominal output of 2 MW and able to store 1 MWh of electricity.[476]

---

[470] Michael Child & Christian Breyer, The Role of Energy Storage Solutions in a 100% Renewable Finnish Energy System, Energy Procedia 99, 26 (2016).

[471] *Id.*

[472] *Id.*

[473] Child & Breyer, *supra* note 468, at 32-33.

[474] *Pöyry Selected for Participation in the Åland FLEXe-Demo Project in Finland,* Pöyry PLC, (July 3, 2018), http://www.poyry.com/news/poyry-selected-for-participation-in-the-aland-flexe-demo-project-in-finland.

[475] *Finland's Smart Islands will Trial Short and Long Term Storage from Pöyry*, Energy Storage News, https://www.energy-storage.news/news/finlands-smart-islands-will-trial-short-and-long-term-storage-from-poeyry.

[476] *Electricity and Energy Storage,* World Nuclear Association, https://www.world-nuclear.org/information-library/current-and-future-generation/electricity-and-energy-storage.aspx.

VI. Conclusion

At present there are no official strategies, policies, or regulations to support smart grids in Bulgaria. Although the implementation of smart grids is part of the country's long-term energy policy and plans, there are no substantial plans or laws in place yet. Bulgaria is facing a number of other pressing issues that the government needs to address prior to making tangible plans for the implementation of smart grids. Although significant progress has been made by the introduction of renewable sources into the economy, Bulgaria remains one of the countries with the highest energy intensity in the EU. The electricity sector is still suffering from overcapacity, which means that there is an urgent need to expand the grid and improve interconnections and transmission networks.

The electricity market has not been fully liberalised yet, which in turn makes it difficult for the government to proceed with any meaningful and concrete plans for the implementation of smart meters. Although the government plans for introduction of further measures aimed at the full liberalisation of the electricity market, historically this process has been stifled and complicated by political drama and poor governance. Energy poverty is one of the country's biggest problems at present; measures introduced by the government such as energy subsidies and direct financial support to households have not been sufficient to reduce the impact of energy poverty, suggesting that more severe measures are required. A percentage of the population that resides in secluded neighbourhoods—known as the Roma neighbourhoods—does not have uninterrupted access to basic commodities such as water and electricity. This further highlights the fact that Bulgaria is not ready for the implementation of smart grids when a proportion of its population cannot afford to pay its electricity bills and resides in areas that lack the infrastructure to support smart grids.

The regulatory framework has undergone a number of changes, and although there is some improvement, there are still significant regulatory gaps resulting in a framework that does not fully support the implementation of smart grids. In addition, the frequency of regulatory changes has created instability, which creates a rather hostile environment for investment. The absence of prosumer-specific regulations and prosumer-friendly administrative procedures slows down the democratisation of the energy sector, which means that consumers are not presently able to participate effectively and efficiently. These issues are further compounded by the fact that the country is still emerging from a crisis in public trust in the energy sector.

A number of projects are underway aimed at improving the country's interconnectivity and incentivise the public to use electric vehicles, but these are not sufficient to patch up the massive issues created

by energy poverty and bad governance, which underlies the country's energy policy. It is anticipated that the new Data Protection legislation will force the energy institutions to move a step closer to greater digitalisation of the sector, as compliance is contingent to a large extent on the existence of a modern and highly digitalised infrastructure for the collection and storage of personal data. However, while there are a number of positive developments in the Bulgarian energy sector, the country still lags significantly behind in comparison to other Member States.

The Polish energy mix has for many years been dominated by coal, which is the main source for electricity production. Diversification of the energy sector is key in meeting the future energy demands in the country and in this respect, RES have a big role to play in not only diversification, but also in ensuring energy security in Poland. Investments in the modernisation of the Polish sector, including smart grids, smart meters and electric vehicles, are essential in ensuring that the country meets its future energy needs in a sustainable and environmentally friendly manner.

As for France, it is one of the most active countries in the fight against climate change, as it strictly follows the relevant EU legislation by harmonising its domestic laws and sets ambitious targets for the reduction of Greenhouse Gas and carbon emissions and for the improvement of renewable sources of energy for 2020, 2030 and even 2050. The country is also active in projects concerning smart grids, with a prevalence of D&D projects over R&D projects. An important share of investments in these projects is coming from the EU; in fact, France is receiving the largest amount of budget with 16.1% as per the data pertaining to 2013 and 2014.[477] As for the R&D projects, the IEA is of the view that France should reinforce innovation activity in smart grids, energy storage, electric vehicles and demand-side flexibility, in support of variable renewable electricity integration and in line with the energy transition.[478]

One of the main characteristics of the French energy sector is the predominance of nuclear power, which currently takes around 73% of the country's total generated electricity. However, the French government is now aiming to reduce this share of nuclear power to 50% by 2025 by developing and increasing the use of renewable sources of energy, with an aim to reduce carbon prints and Greenhouse Gas emissions.

There are still some problems related to grid connection, such as the adjustment of the grid to renewable energy sources and the development of the grid, which are seen as obstacles in reaching a

[477] Nur IqtiyaniIlham, M. Hasanuzzaman, & M. Hosenuzzaman, *European Smart Grid Prospects, Policies and Challenges*, Renewable and Sustainable Energy Reviews 2017, Vol. 67, p. 781.

[478] Energy Policies of IEA countries France 2016 *supra* note 260 at 190.

developed renewable energy system in France.[479] On the other hand, as per the Energy Code, suppliers are required to receive capacity guarantees from RTE for demand response management or production, which end consumers and network operators are also allowed to acquire.[480] France has established a clear framework on the status and roles of independent aggregators in the market, which is also favourable to achieve full potential demand response.[481] Furthermore, the aggregated load is also open and encouraged to participate in France via NEBEF mechanism, which makes demand side flexibility resources available.[482]

One of the effective ways to a successful and effective strategy to implement smart energy systems is linked to taxes, incentives and subsidies, and especially the current hot discussion on carbon tax. Although France has come a long way to incentivise the use of smart energy by imposing extra taxes and tariffs on sources of energy like fossil fuels, there are still some criticisms and fierce public reactions against this practice. Clarifying the policy and strategy on the ways of use of the increased carbon tax might be a good option to ensure a smooth transition to smart energy.

In the case of Finland, it is considered one of the pioneers in the fight against climate change, although it is expected to slightly miss its 2020 targets for the reduction of Greenhouse Gas emissions in non-ETS sectors. Finland's 2020 target for the share of renewable energy in final consumption is set as 38%, which is an ambitious figure compared to other EU countries, though seemingly realistic for Finland, as the country had already reached this figure in 2014. The country has also addressed 2050 targets for emissions in its domestic legislation, which is an ambitious and revolutionary attempt in respect of climate change. Finland is also a dynamic mover in smart energy market, providing a 2.0 smart grid system and having almost completed the roll-outs of smart meters. The Finnish government is keen on supporting R&D projects on smart energy, which makes Finland stand out amongst other EU countries. Having said that, it seems that there are still some further improvements that might be done in order to achieve an effective implementation of the smart energy system.

Finnish legislation on smart grids and smart electricity systems is

[479] Guénaire, Michel; Lienhardt, Pierre-Adrien; Jothy, Benjamin; Rambaud, Aurelia; Dufour, Timothee, Electricity Regulation in France: overview Practical Law (2018), Thomson&Reuters.

[480] *Id.*

[481] Smart Energy Demand Coal., *supra* note 301, at 12.

[482] *Id* at 31.

criticised for failing to provide sufficient incentives to the consumers and to DSOs in opting for smart systems instead of traditional ones. Current legislation does not seem to specifically incentivise investments in smart systems, unless there is a direct benefit for DSOs, such as the reduction of standard compensations payable by the DSOs in case of long outages, which can be overcome by improving the self-healing capacity of the networks.[483] Therefore, in order to achieve a complete implementation of smart electricity systems, it is necessary to provide incentives to market actors, including DSOs, aggregators and consumers. This can be done by way of engaging in reforms in the relevant legislation. The IEA recommends the following for Finland: "Remove regulatory barriers in the smart energy sector, following the Smart Grid Working Group recommendations, with a view to optimise public funding and identify the best opportunities to leverage private R&D investment."[484]

A recommendation to improve efficiency and use of smart systems is the adoption of a smart certificate system. Suppliers that would enable consumer action in demand side flexibility or energy efficiency or DSOs that would smarten their networks would be eligible to obtain these certificates and the obligation to buy the certificates could be imposed on suppliers or DSOs.[485] Such a system might effectively solve the problem of incentives in this sector as the market actors would be drawn to either satisfying the criteria to obtain the certificate or to buy them. Furthermore, it would also enhance the connection between different market actors by creating a common 'sphere of interest' and a sense of cooperation, which is ultimately to smarten the electricity system.[486]

To improve the current smart energy system, the IEA recommends that the Finnish government end double charging of storage and EVs, determine minimum requirements for the next generation of smart meters and ensure that low-income households can also engage in the transition to smart energy systems.[487]

[483] Sunila et al. *supra* note 354, at 16-17.
[484] Finland 2018 Review, *supra* note 363, at 102.
[485] Sunila et al. *supra* note 354, at 22.
[486] *Id.*
[487] Finland 2018 Review, *supra* note 363, at 127.

2019 Animal and Natural Resource Law Case Review

Kelsey VanderMeer

State v. St. Peter
193 A. 3d 1189 (Vt. 2018)

Summary of the Facts

The State of Vermont brought five counts of animal cruelty against Ms. Emily St. Peter. The state alleged she deprived her five horses of adequate food, water, shelter, or necessary medical attention. The State maintained that "all eight horses showed signs of malnourishment, malnutrition, and overall neglect of their needs for the past ten to twelve months." Ms. St. Peter voluntarily surrendered her horses during the cruelty investigation. The horses were not seen by a veterinarian for more than a week after the voluntary surrender. Ms. St. Peter argued that any evidence gathered later than seventy-two hours after her voluntary surrender must be suppressed for failure to comply with 13 V.S.A. § 354(b)(1), which requires voluntarily surrendered animals to be "examined and assessed within 72 hours by a veterinarian." The trial court denied her motion to suppress the evidence finding that the timing requirement is "directory" and not mandatory. It reasoned this was the case because the Legislature did not supply consequences for failure to comply.

The jury was instructed to presume that "the condition of the horses did not change from the time of surrender to the time of the examination." Ms. St. Peter was convicted but appealed, renewing the argument that the evidence should have been suppressed. The Supreme Court of Vermont heard the case to determine if suppression is the proper remedy for an officer's failure to have animals evaluated by a veterinarian within seventy-two hours of surrender.

Summary of the Law

The Supreme Court of Vermont held that the motion to suppress was properly denied and evidence properly admitted. In so finding, the court looked to the reasoning applied in *State v. Shepard*, 170 A.3d 616 (Vt. 2016). In the discussion of *Shepard*, the court noted that suppression may be appropriate when a statute does not provide an explicit remedy. Whether suppression is required turns on legislative intent. Relatedly, the court found in *Shepard* that a similar timing requirement in another statute "stems from a concern for animal welfare and not for Defendants' individual rights." The court found that the reasoning and legislative intent in *Shepard* applies "with equal force" to cases of voluntary surrenders as occurred in this case. Furthermore, the court reasoned that because a voluntary surrender can not be predicted, nor implies a level of urgency, it is reasonable to find that the Legislature intended to afford officers additional time to arrange a veterinary evaluation.

Kuehl v. Sneller
887 F.3d 845 (8th Cir. 2018)

Summary of the Facts

Individuals and the Animal Legal Defense Fund (Plaintiffs) brought a suit against Cricket Hallow Zoo (the Zoo) and its owners (Defendants) for violations of the Endangered Species Act (the ESA). The Defendants had 300 animals under their care, including tigers and lemurs. The Plaintiffs visited the Zoo and noted excessive feces, overpowering smells of manure, and limited environmental enrichment for the lemurs and tigers. The Plaintiffs sued after dissatisfactory responses from regulatory agencies, law enforcement, and public officials. The Defendants attempted to argue that the Zoo is exempt from all aspects of the ESA while it remains a licensed Animal Welfare Act facility and, therefore, abide by "generally accepted…[a]nimal husbandry practices that meet or exceed the minimum standard for facilities and care under the Animal Welfare Act." The district court found that the Defendants had violated the ESA by keeping the lemurs in isolation; by not following and documenting an environmental enrichment plan; by not providing sanitary conditions; and by failing to provide veterinarian care for the tigers. These findings were supported by expert testimony, including the attending veterinarian at the Zoo, reports, and settlement agreements. The district court also ordered the lemurs and tigers to be relocated to a facility that could properly care for them. Defendants appealed for lack of standing and the finding that they had violated the ESA. Plaintiffs appealed the placement of the animals.

Summary of the Law

The Eighth Circuit first affirmed the Plaintiff's standing to bring a claim. It found the Plaintiffs sufficiently alleged "an injury in fact," did not "inflict injury upon themselves" by visiting the Zoo, and that Animal Legal Defense Fund met the requirement for an association to bring suit on behalf of members. The court held that the district court was not clearly erroneous to find that the Defendants had harassed the lemurs as defined by the Animal Welfare Act. The court also concluded it was not clearly erroneous to find the Defendants harassed its tigers and failed to provide adequate veterinary care. Regarding the Plaintiff's appeal, the Eighth Circuit found that the district court did not abuse its discretion in its placement of the lemurs and tigers. It held it was reasonable to impose on the Defendants the responsibility of finding suitable, USDA licensed, housing. Judge Goldberg concurred with the opinion because he found the district court's reasoning as to the placement of the lemurs was problematic, though it did not ultimately rise to abuse of discretion. He found that applying significant weight to requiring the lemurs to be relocated to a USDA licensed facility was "insufficient as a proxy for the far-reaching purpose of the ESA" because the USDA inspectors apply Animal Welfare Act standards, which requires very little to meet humane treatment standards.

Rocky Mountain Farmers Union v. Corey
913 F.3d 940 (9th Cir. 2019)

Summary of the Facts

This case is the latest opinion in a long line of litigation over versions of California's Lower Carbon Fuel Standard (LCFS). LCFS regulates the transportation for fuels based on the fuel's "carbon intensity." Plaintiffs have argued through the years that LCFS discriminates against interstate commerce, regulates extraterritorially, and discriminates in purpose or effect against crude oil. The purpose of enacting LCFS was to reduce greenhouse gas emissions in the transportation sector. A previous proceeding dismissed and remanded the claims by the Plaintiffs finding that LCFS is permissible because it regulates in-state behavior and does not amount to discrimination against interstate commerce. The regulation had been amended, but largely remains intact. The Plaintiffs brought this claim, but their claims mirror previous claims, though including the amended versions of LCFS and allegation that it violates the federal structure of the Constitution.

Summary of the Law

The court found that the amendments made to LCFS through the years made the Plaintiff's challenges to prior versions moot. Additionally, the Ninth Circuit affirmed the dismissal of the remaining claims because they are precluded or without merit. The court held that it is within state powers to "regulate to minimize the in-state harm caused by products sold in-state." The record showed that California enacted LCFS to minimize the harms of global warming that the state is particularly susceptible due to the ecological landscape of the state. The Plaintiffs failed to identify a constitutional provision for their federal structure claim, other than the Commerce Clause which was rejected in *Rocky Mountain I*. The court held there was no reason to look outside of the Commerce Clause, and therefore, rejected the challenge. It affirmed the ruling in *Rocky Mountain I*, finding that courts "should be reluctant to subject states to warranted scrutiny under the Commerce Clause for fear that [it] will frustrate…the ability of the states to 'perform their role as laboratories for experimentation… where the best solution is far from clear.'" In this case, the court held that California's experimentation of finding a solution to controlling carbon fuel emissions for the purpose of minimizing the state's impact on climate change should not be restricted by the Commerce Clause.

National Resources Defense Council v. Environmental Protection Agency

Summary of the Facts	Summary of the Law
This case challenged a rule established by the Environmental Protection Agency (EPA) under the Clean Air Act. The EPA has authority under the Clean Air Act to set "uniform levels of concentrations of various pollutants, National Ambient Air Quality Standards (NAAQS), that local areas must not exceed." Pollution control officials express concern that including emissions caused by "exceptional events" inflates reported levels of pollutants, causing some areas to be found not to be in attainment. In response, the EPA proposed that state and federal agencies do not need to include in reports any pollutants emitted from exceptional events. Exceptional events "affect air quality," are "not reasonably controllable or presentable," and are unlikely to recur at that location. However, a recurring event can be "exceptional" if it is a natural event. A natural event is determined from the activity that caused it. Under the EPA's proposed definition, "a natural even is an event and its resulting emissions, which may recur at the same location, in which human activity play little or no direct causal role…[but] anthropogenic sources that are reasonably controlled shall be considered not to play a direct role in causing emissions." The Plaintiff environmental groups argue that a proper definition must consider human activity that does and does not comply with regulations.	The court reviewed the definition under the Chevron doctrine, giving deference to agency interpretation if Congress has not expressly and unambiguously provided instructions for the distinguishing natural events from human activity. The court held that the meaning of a "natural event" must be read in context of the overall statutory scheme. The court found that the test of the statute indicated that human and natural events are two separate categories, requiring special meaning, but does little more to define the line of distinction suggesting this is a "gap for EPA to fill with reasonable regulations." The court rejected the argument that it is "unreasonable for the EPA to assume that human activity did not cause an event simply because that activity complied with environmental regulations." The court held that the rare occurrence of EPA exceeding its statutory authority under the definition does not warrant condemnation of the rule in its entirety.

People for the Ethical Treatment of Animals, Inc. v. Miami Seaquarium
905 F. 3D 1307

Summary of the Facts

The People for the Ethical Treatment of Animals (PETA) brought a suit against Miami Seaquarium alleging a taking by "harming" and "harassing" under the Endangered Species Act (ESA). They sought injunctive relief that would have required the release of the killer whale in question. The district court granted summary judgement for Miami Seaquarium because the living conditions of the whale did not amount to "harm" or "harass[ment]" because there was no threat of serious harm. PETA appealed to the court of appeals, which affirmed. PETA appealed for a rehearing.

Summary of the Law

The petition for rehearing was denied, but the court made comments on the arguments of PETA. It began by pointing out the unique condition of the killer whale, Lolita. She is elderly, has been living and receiving care for 48 years, and "has no realistic means for returning to the wild without being harmed." The court did not intend the holding of this case to tie the "hands of future courts in cases involving younger, healthier animals who may be faced with different circumstances." In her case, the evidence indicates that "no reasonable fact finder could conclude that Lolita's injuries present a 'threat of serious harm' sufficient to trigger liability under the ESA. The court compares "raking" that occurs with dolphins and whales naturally in the wild and what is occurring to Lolita to find it is less than she would expect to receive in the wild. Finally, the court affirms the interpretation of actionable "harm" and "harass[ment]" as needing to present a "threat of serious harm" in order to avoid de minimis actions under the ESA's coverage that are unrelated to extinction, which is outside the scope of the Act's purpose.