

**WIND TURBINES AND MIGRATORY BIRDS: AVOIDING A  
COLLISION BETWEEN THE ENERGY INDUSTRY AND THE  
MIGRATORY BIRD TREATY ACT**

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*Wind energy is gaining prominence as a source of pollution-free electrical energy. An old environmental statute, however, may act as a roadblock for this clean, renewable energy. The Migratory Bird Treaty Act prohibits the killing or taking of nearly all birds found in the United States. While this legislation has been a boon for the country's bird population, it may criminalize the thousands of birds unintentionally killed by collisions with wind turbines. Congress needs to address this issue by amending the Act to exempt these unintentional bird collisions. In the interim, courts should adopt a new framework which would discourage bird takes while still allowing the wind energy industry to thrive. Furthermore, the U.S. Fish & Wildlife Service, the agency tasked with enforcing the Bird Act, should adopt a clear standard under the Chevron deference. In addition to the adoption of these policies, the wind energy industry should implement vertical-axis turbines rather than traditional turbines, which will greatly reduce the number of migratory bird deaths.*

**I. INTRODUCTION**

Constantly sweeping across the globe, responding to imperceptible changes in pressure, wind has the potential to become a big part of America's energy profile. The wind energy industry has made strides as a viable source of clean, renewable energy over the past twenty years. An environmental statute, nearly a century old, could present a formidable windbreak that stops the wind energy industry dead in its tracks. Courts are interpreting the Migratory Bird Treaty Act<sup>1</sup> (the "Bird Act") in

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ways that may jeopardize the future of the industry. The courts, federal agencies, and the wind energy industry must enact policy changes to prevent the Bird Act from colliding with wind turbines.

The Bird Act, which Congress enacted to protect migratory birds from overhunting,<sup>2</sup> has recently been used by the United States Fish & Wildlife Service (“USFWS”) to prosecute oil companies for incidental “takes” of birds.<sup>3</sup> Circuit courts are split about whether the Bird Act applies only to direct takes,<sup>4</sup> such as poaching, or whether it extends to indirect takes,<sup>5</sup> which include unintentional acts such as getting caught in oil reservoir pits.<sup>6</sup> Two recent cases, *United States v. Brigham Oil and Gas, L.P.*<sup>7</sup> and *United States v. CITGO Petroleum Corp.*,<sup>8</sup> illustrate this split. Under the Bird Act, similar facts led two courts to very different results. In *Brigham*, the court held that the Bird Act did not apply to commercial activity that unintentionally killed migratory birds.<sup>9</sup>

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like to thank The Nature Conservancy, for introducing me to the Migratory Bird Treaty Act.

<sup>1</sup> Migratory Bird Treaty Act, 16 U.S.C. § 703 (2012) [hereinafter MBTA].

<sup>2</sup> See Meredith Blaydes Lilley & Jeremy Firestone, *Wind Power, Wildlife, and the Migratory Bird Treaty Act: A Way Forward*, 38 ENVTL. L. 1167, 1176–79 (2008) (giving a legislative history of the Act).

<sup>3</sup> See, e.g., *United States v. CITGO Petroleum Corp.*, 893 F. Supp. 2d 841 (S.D. Tex. 2012); *United States v. Brigham Oil and Gas, L.P.*, 840 F. Supp. 2d 1202 (D.N.D. 2012) (prosecuting oil companies under the MBTA).

<sup>4</sup> Courts holding that the Bird Act applies only to direct takes have determined the terms “take” and “kill” mean “physical conduct of the sort engaged in by hunters and poachers.” *Newton Cnty. Wildlife Ass’n v. United States Forest Serv.*, 113 F.3d 110, 115 (8th Cir. 1997) (quoting *Seattle Audubon Soc’y v. Evans*, 952 F.2d 297, 302 (9th Cir. 1991)).

<sup>5</sup> Courts holding that the Bird Act applies to indirect takes have determined that the prohibition against “killing” coupled with the prohibition of “hunting, capturing, shooting, and trapping” shows that “Congress intended to prohibit conduct beyond that normally exhibited by hunters and poachers.” *United States v. Moon Lake Elec. Ass’n, Inc.*, 45 F. Supp. 2d 1070, 1074 (D. Colo. 1999).

<sup>6</sup> See *Newton Cnty. Wildlife Ass’n*, 113 F.3d at 115 (holding that habitat modification resulting in incidental bird deaths did not violate the MBTA); *Moon Lake Elec. Ass’n*, 45 F. Supp. 2d at 1073–74 (holding that actions resulting in the death of migratory birds violate the MBTA).

<sup>7</sup> 840 F. Supp. 2d 1202 (D.N.D. 2012).

<sup>8</sup> 893 F. Supp. 2d 841 (S.D. Tex. 2012).

<sup>9</sup> *Brigham Oil and Gas*, 840 F. Supp. 2d at 1213–14.

But in *CITGO*, the court held that the Bird Act did apply to commercial activity that unintentionally killed migratory birds, and *CITGO* had to pay several thousand dollars in fines.<sup>10</sup>

This expansion of the Bird Act to include incidental takes has negative consequences for domestic wind production. Estimates show that wind turbines kill thousands of migratory birds each year.<sup>11</sup> Under some court interpretations of the Bird Act, bird collisions with wind turbines resulting in deaths could constitute a “take.”<sup>12</sup> Prosecuting incidental takes caused by wind turbines could hamstring domestic wind energy before it even has the chance to take off. For the wind energy industry to thrive, Congress, USFWS, and the industry need to enact serious policy reforms.

This Recent Development argues that an inconsistent application of the Bird Act jeopardizes the future of the wind energy industry. To fix this problem, Congress needs to amend the Bird Act. In the interim, USFWS should exercise its authority to promulgate a clear interpretation of the Bird Act. Courts also need to reconsider how they interpret the Bird Act. Part II gives an overview of the overlap between the wind energy industry and the Bird Act and discusses the importance of the wind energy industry in America’s energy profile. Part III discusses the need for legal and policy reform. First, Part III calls for Congressional action to address the “incidental take” issue, clearly define “take,” and provide incentives for the wind industry to adopt more bird-friendly wind turbines. Second, Part III proposes a

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<sup>10</sup> *CITGO Petroleum Corp.*, 893 F. Supp. 2d at 847–48.

<sup>11</sup> See Wallace P. Erickson et al., *A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions*, U.S. DEP’T OF AGRIC. FOREST SERV. GEN. TECH. REPORT PSW-GTR-191 1029, 1034–36 (2005), available at [http://www.fs.fed.us/psw/publications/documents/psw\\_gtr191/Asilomar/pdfs/1029-1042.pdf](http://www.fs.fed.us/psw/publications/documents/psw_gtr191/Asilomar/pdfs/1029-1042.pdf) (estimating total bird takes from collisions with wind turbines at between 20,000 and 37,000); K. Shawn Smallwood & Carl Thelander, *Bird Mortality in the Altamont Pass Wind Resource Area, California*, 72 J. WILDLIFE MGMT. 215, 217 (2008) (estimating over 1,100 annual bird deaths at a single wind farm in California).

<sup>12</sup> See *infra* note 25 (discussing the federal circuits that have extended the Bird Act to cover incidental takes).

*Brigham/CITGO* framework that courts should use in deciding claims brought under the Bird Act. Third, Part III urges USFWS to promulgate a rule in accordance with *Chevron* to provide guidance on how to interpret the Bird Act. Fourth, Part III urges the wind energy industry to take proactive steps toward reducing migratory bird deaths by adopting vertical-axis turbines. This would both ensure the growth of the U.S. energy industry and protect migratory birds from already non-conforming energy operations.

## II. THE OVERLAP: THE MIGRATORY BIRD TREATY ACT AND WIND TURBINE TECHNOLOGY

At the time of its enactment, the Bird Act was intended as a means of implementing the 1916 Convention between the United States and Great Britain (for Canada) for the protection of migratory birds.<sup>13</sup> The statute provides a legal framework for addressing the harmful effects—effects that impact multiple countries—of poaching and overhunting migratory birds.<sup>14</sup> Nearly a century later, the Bird Act stands to deter actions beyond hunting and capturing. The advancement of wind energy, and subsequent development of wind turbine technology, has implicated the Bird Act in a manner not originally anticipated.

### A. *The Migratory Bird Treaty Act and Subsequent Case Law*

Congress enacted the Bird Act in 1918 to protect migratory birds from hunting and poaching.<sup>15</sup> The Bird Act makes it illegal to “pursue, hunt, take, capture, kill, attempt to take, capture, or kill . . . any migratory bird.”<sup>16</sup> The treaty between the United States and Great Britain required both nations to act because of the “danger of extermination through lack of adequate protection during the nesting season.”<sup>17</sup> One Representative noted that annual

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<sup>13</sup> Convention Between the United States and Great Britain for the Protection of Migratory Birds, U.S.-Gr. Brit., Aug. 16, 1916, 39 Stat. 1702 [hereinafter *Treaty with Great Britain*].

<sup>14</sup> See *infra* note 19 and accompanying text.

<sup>15</sup> See Lilley & Firestone, *supra* note 2, at 1176–77.

<sup>16</sup> Migratory Bird Treaty Act, 16 U.S.C. § 703(a) (2013).

<sup>17</sup> *Treaty with Great Britain*, *supra* note 13, at 1702.

15 N.C. J.L. & TECH. ON. 32, 36  
Wind Energy and the Migratory Bird Treaty Act

migrations of wild ducks and geese had “perceptibly diminished year by year as a result of merciless slaughter, especially during the spring breeding season.”<sup>18</sup> Much of the legislative discussion surrounding the enactment of the Bird Act focused on how the law would affect hunting, a popular pastime during the era.<sup>19</sup> Other Congressmen focused on how the Bird Act would act as a “conservation of food,” by protecting insectivorous birds, which curb insect-damage to crops and preserve the nation’s food supply.<sup>20</sup> Much debate over the bill focused on the role game wardens would play in enforcing the statute.<sup>21</sup> One humorous suggestion even sought to include appropriations for the “belling of cats” as it would “save a great many birds.”<sup>22</sup> Although Congress debated the Bird Act’s implementation from many angles, the Bird Act’s legislative history shows that Congress could not and did not consider the far-reaching effect it might have on renewable energy.<sup>23</sup>

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<sup>18</sup> 56 CONG. REC. 7360 (1918) (statement of Rep. Anthony) (discussing the overhunting of wild ducks and how the resulting ban on spring shooting helped the duck population recover).

<sup>19</sup> See, e.g., 55 CONG. REC. 4813 (1917) (statement of Sen. Reed) (“[The Bird Act] proposes to . . . tell white men when and where they can hunt, to make it a crime for a man to shoot game on his own farm . . .”); *id.* at 4402 (1917) (statement of Sen. Smith) (“This law is aimed at the professional pothunter.”); *id.* at 4816 (1917) (Statement of Sen. Smith) (“Nobody is trying to do anything here except to keep pothunters from killing game out of season, ruining the eggs of nesting birds, and ruining the country by it.”).

<sup>20</sup> 56 CONG. REC. 7357 (1918) (statement of Rep. Fess) (noting the annual dollar loss to farmers caused by insect-damage to crops, and arguing that the Bird Act could be seen as a “war measure for the preservation of our food products”).

<sup>21</sup> See, e.g., *id.* at 7442 (1918) (statements of Reps. Raker, Miller, and Fess) (discussing whether game wardens will need a warrant to search and detain possible Bird Act violators); 55 CONG. REC. 4400 (1917) (statements of Sens. Borah, Reed, and Lodge) (discussing whether game wardens will need a warrant to search the private premises of possible Bird Act violators).

<sup>22</sup> 56 CONG. REC. 7458 (1918) (statement of Reps. Smith and Bland) (recommending that the Department of Agriculture study how putting bells on the nation’s cats would affect the migratory bird population). Perhaps this recommendation should have been taken more seriously, as cats are estimated to kill 100 million birds each year. See Erickson et al., *supra* note 11, at 1037.

<sup>23</sup> A letter from Secretary of State Robert Lansing to President Wilson does

Despite the Bird Act's good intentions, the ambiguous language of the statute has led to inconsistent interpretations and applications. A primary source of confusion has been the definition of "take." Since its enactment, courts have interpreted the Bird Act's prohibition against taking migratory birds differently. Some federal jurisdictions have held that the Bird Act applies only to intentional takes, like hunting and poaching of birds.<sup>24</sup> Other jurisdictions, however, have held that the Bird Act extends to all takes, intentional or otherwise.<sup>25</sup> The Circuits are

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perhaps suggest that the Bird Act may extend beyond hunting and poaching, but still fails to predict the collision between the Act and the wind energy. H.R. REP. NO. 65-243, at 2 (1918) ("[T]he extension of agriculture, and particularly the draining on a large scale of swamps and meadows, together with improved firearms and a vast increase in the number of sportsmen, have so altered conditions that comparatively few migratory game birds nest within our limits.").

<sup>24</sup> See generally *Newton Cnty. Wildlife Ass'n v. U.S. Forest Serv.*, 113 F.3d 110, 115 (8th Cir. 1997) (holding that it would be unreasonable to extend the Bird Act to actions that may accidentally result in bird deaths); *Seattle Audubon Soc'y v. Evans*, 952 F.2d 297, 302-03 (9th Cir. 1991) (holding that habitat destruction resulting in the incidental take of migratory birds does not violate the Bird Act); *United States v. Chevron USA, Inc.*, No. 09-CR-0132, 2009 WL 3645170, at \*2-3 (W.D. La. Oct. 30, 2009) (holding that the Bird Act does not extend to commercial ventures where migratory birds may be killed as a result of legal activities); *Curry v. U.S. Forest Serv.*, 988 F. Supp. 541, 549 (W.D. Pa. 1997) (holding that the incidental taking of migratory birds as a result of logging operations does not violate the Bird Act); *Mahler v. U.S. Forest Serv.*, 927 F. Supp. 1559, 1573-74 (S.D. Ind. 1996) (holding that habitat destruction and logging operations do not violate the Bird Act).

<sup>25</sup> See generally *United States v. Apollo Energies, Inc.*, 611 F.3d 679, 686 (10th Cir. 2010) (holding that the plain language of the Bird Act imposes strict liability and extends to incidental takes of migratory birds); *Ctr. for Biological Diversity v. Pirie*, 191 F. Supp. 2d 161, 174-75 (D.C. Cir. 2002), *vacated*, 2003 WL 179848 (2003) (holding that military live-fire exercises that killed migratory birds violated the Bird Act as the military knowingly engaged in an activity that killed migratory birds); *United States v. Pitrone*, 115 F.3d 1, 5 (1st Cir. 1997) (noting that the Bird Act's misdemeanor provision has no intent requirement, and that unintentional violations of the Bird Act were still violations); *United States v. Boynton*, 63 F.3d 337, 344 (4th Cir. 1995) (holding that the Bird Act's misdemeanor provision is a strict liability crime and requiring a showing of intent would stymie enforcement); *United States v. FMC Corp.*, 572 F.2d 902,

split nearly evenly.<sup>26</sup> *Newton County Wildlife Ass'n v. U.S. Forest Service*<sup>27</sup> and *United States v. Moon Lake Electric Ass'n*<sup>28</sup> are representative of the inconsistent application of the Bird Act in federal courts.<sup>29</sup>

*Newton County* provides a thorough analysis in support of the argument that the Bird Act does not apply to incidental takes. In *Newton County*, an environmental organization sued the U.S. Forest Service to enjoin timber sales as violations of the Bird Act.<sup>30</sup> The Eighth Circuit began its analysis by noting that the plain language of the Bird Act “prohibits conduct *directed* at migratory birds.”<sup>31</sup> Rejecting the government’s argument that this prohibition applies to all activities that result in the killing of birds, including unintentional ones, the court stated that “it would stretch [the Bird Act] far beyond the bounds of reason to construe it as an absolute

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907–08 (2d Cir. 1978) (holding that extrahazardous activities that kill migratory birds violated the Bird Act).

<sup>26</sup> Five circuits have held the Bird Act extends to indirect acts, and five circuits have held that the Bird Act does not extend to indirect acts. *See supra* notes 24–25 and accompanying text. The dearth of relevant cases in the 6th and 11th Circuits does not provide any guidance into whether the Bird Act extends to indirect takes. *See Sierra Club v. Martin*, 110 F.3d 1551, 1555–56 (11th Cir. 1997) (holding only that the Bird Act does not apply to the U.S. Forest Service); *United States v. WCI Steel, Inc.*, No. 5:04 MJ 5053, 2006 WL 23344719, at \*5 (N.D. Ohio Aug. 10, 2006) (refusing to answer the indirect take question as the government had failed to meet its burden of proof in establishing causation).

<sup>27</sup> 113 F.3d 110 (8th Cir. 1997).

<sup>28</sup> 45 F. Supp. 2d 1070 (D. Colo. 1999).

<sup>29</sup> Despite the split over the interpretation of “take,” courts commonly hold that the Bird Act does not extend to habitat modification. *See, e.g., Mahler*, 927 F. Supp. at 1573 (“Habitat destruction and logging during nesting season do not produce ‘takings’ of migratory birds within the purview of the MBTA.”); *Seattle Audubon Soc’y*, 952 F.2d at 303 (“Habitat destruction . . . does not ‘take’ [owls] within the meaning of the MBTA.”). Courts also commonly hold that the Bird Act does not apply in cases where the underlying activity was “extrahazardous” or already unlawful. *See, e.g., FMC Corp.*, 572 F.2d at 907–08 (holding that because manufacturing toxic chemicals was “extrahazardous,” applying strict liability under the Bird Act was appropriate); *United States v. CITGO Petroleum Corp.*, 893 F. Supp. 841, 847 (S.D. Tex. 2012) (holding that the unlawful nature of the underlying act distinguished *CITGO* from other incidental take cases).

<sup>30</sup> *Newton County*, 113 F.3d at 112.

<sup>31</sup> *Id.* at 115 (emphasis added).

criminal prohibition on conduct, such as timber harvesting, that *indirectly* results in the death of migratory birds.”<sup>32</sup> The Eighth Circuit, citing case law from the Ninth Circuit, held that the language of the Bird Act applies only to the “physical conduct of the sort engaged in by hunters and poachers, conduct which was undoubtedly a concern at the time of the statute’s enactment in 1918.”<sup>33</sup>

*Moon Lake* provides perhaps the most exhaustive explanation of why the Bird Act should apply to incidental takings of migratory birds. In *Moon Lake*, the United States charged Moon Lake Electric with six violations of the Bird Act for failing to install protective equipment on their power lines, which caused the “death or injury of 38 birds of prey.”<sup>34</sup> Moon Lake filed a motion to dismiss, arguing that the Bird Act did not apply to incidental takings like power line electrocutions.<sup>35</sup> After a lengthy analysis of the Bird Act and its precedents, the court held that the Bird Act does apply to incidental conduct.<sup>36</sup> The *Moon Lake* court did not adopt the holding from *Newton* and similar cases, refusing to comment on whether the Bird Act applies to habitat modification.<sup>37</sup> The court further distinguished the habitat modification cases by noting that “no actual injury or death had occurred as a result of the timber sales,” and that the suit was merely over the “proposed” take of migratory birds.<sup>38</sup> The court also found that the discussion between direct and indirect takings was “illogical,” and “conflates the causation element [of the Bird Act] with the *actus reus*

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<sup>32</sup> *Id.*

<sup>33</sup> *Id.* (quoting *Seattle Audubon Soc’y*, 952 F.2d at 302).

<sup>34</sup> *United States v. Moon Lake Elec. Ass’n*, 45 F. Supp. 2d 1070, 1071 (D. Colo. 1999).

<sup>35</sup> *Id.*

<sup>36</sup> *Id.* at 1088.

<sup>37</sup> *Id.* at 1075–76 (grouping *Newton* together with a handful of other cases deciding whether timber sales and habitat modification run afoul of the Bird Act, including *Seattle Audubon Soc’y v. Evans* (“Seattle II”), 952 F.2d 297, (9th Cir. 1991), *Curry v. U.S. Forest Service*, 988 F. Supp. 541 (W.D. Pa. 1997), *Mahler v. U.S. Forest Serv.*, 927 F. Supp. 1559 (S.D. Ind. 1996), and *Citizens Interested in Bull Run, Inc. v. Edrington*, 781 F. Supp. 1502 (D. Or. 1991)).

<sup>38</sup> *Id.* at 1076.



element.”<sup>39</sup> The court looked at legislative history and ultimately found that “there is no clearly expressed legislative intent that the [Bird Act] regulates only physical conduct associated with hunting or poaching.”<sup>40</sup> The *Moon Lake* court also examined cases where courts held incidental takes outside the scope of the Bird Act and found that interpretation “unpersuasive.”<sup>41</sup>

*Newton* and *Moon Lake* are illustrative of a wider circuit split over whether the Bird Act applies only to direct takes, or if it also prohibits incidental takes.<sup>42</sup> The terms, “direct” and “incidental,” are constructions of the federal courts and are not included in the language of the Bird Act. For decades, the wind energy industry has escaped the Bird Act, in large part due to the inconsistent application and interpretation of these terms.<sup>43</sup> In November 2013, however, a subsidiary of Duke Energy was ordered to pay fines and restitution totaling \$1 million, representing “the first ever criminal enforcement of the Migratory Bird Treaty Act for unpermitted avian takings at wind projects.”<sup>44</sup>

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<sup>39</sup> *Id.* at 1077.

<sup>40</sup> *Id.* at 1080–82 (including statements from several Congresspersons claiming that the Bird Act covers only “professional pothunters” and conflicting statements from other Congresspersons describing the Bird Act as “absolutely prohibiting the killing of game anywhere under any circumstances”).

<sup>41</sup> *Id.* at 1076 (rejecting the argument in *Seattle Audobon Soc’y v. Evans*, 952 F.2d 297 (9th Cir. 1991), that the MBTA applies only to physical conduct normally associated with hunting and poaching).

<sup>42</sup> See *supra* notes 24–26 and accompanying text (providing background from each judicial circuit that has issued a definitive ruling on the extension of the Bird Act to incidental takes).

<sup>43</sup> Courts and USFWS have never fined or prosecuted a wind energy company under the Bird Act until November, 2013. See Dina Cappiello, *Wind Farms Get Pass on Eagle Deaths*, THE BIG STORY (Oct. 12, 2013, 1:30 PM), <http://bigstory.ap.org/article/ap-impact-wind-farms-get-pass-eagle-deaths>.

<sup>44</sup> *Utility Company Sentenced in Wyoming for Killing Protected Birds at Wind Projects*, U.S. DEP’T OF JUSTICE (Nov. 22, 2013), available at <http://www.justice.gov/opa/pr/2013/November/13-enrd-1253.html>; see *infra* note 180 (discussing a case settled on November 22, 2013, where a wind farm operator pled guilty to violating the Bird Act and its significance on this Recent Development).

B. *Wind Turbine Policy*

The wind energy industry is booming. In 2012, wind energy was the “largest source of new generation capacity added to the U.S. electrical grid in terms of *gross* capacity additions.”<sup>45</sup> With over \$25 billion invested in wind energy in 2012 and 13,131 megawatts<sup>46</sup> of new capacity added, wind energy is experiencing rapid growth in the United States and has even overtaken natural gas-fired generation as the leading source of U.S. electricity generation.<sup>47</sup> As of 2012, there are roughly 815 wind farms online with the capacity to power more than 15 million homes.<sup>48</sup> These farms are scattered across the United States but are heavily concentrated in Texas, California, and Iowa.<sup>49</sup>

Despite the concerns, the federal and state energy mandates and wide support for the development of this alternative energy source indicate that wind energy is here to stay.<sup>50</sup> Wind energy has a number of benefits, including that it is cheap, clean, and a source

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<sup>45</sup> U.S. DEP’T OF ENERGY, 2012 WIND TECHNOLOGIES MARKET REPORT 5 (2012), available at [http://www1.eere.energy.gov/wind/pdfs/2012\\_wind\\_technologies\\_market\\_report.pdf](http://www1.eere.energy.gov/wind/pdfs/2012_wind_technologies_market_report.pdf).

<sup>46</sup> This is a lot of energy. On average, a one-megawatt wind turbine can generate a year’s worth of energy for between 240 and 400 homes. See *Frequently Asked Questions*, TRADEWIND ENERGY (Oct. 12, 2013, 11:11 AM), [http://www.tradewindenergy.com/windlibrary\\_sub.aspx?id=136](http://www.tradewindenergy.com/windlibrary_sub.aspx?id=136). The new capacity added in 2012 can power roughly 4.2 million homes, which is nearly every home in North Carolina. See *North Carolina Census Quick Facts*, U.S. CENSUS BUREAU, <http://quickfacts.census.gov/qfd/states/37000.html> (last visited Nov. 13, 2013) (listing roughly 4.3 million housing units in North Carolina for the 2011 year).

<sup>47</sup> See U.S. DEP’T OF ENERGY, 2012 WIND TECHNOLOGIES REPORT 4–5 (2012), available at [http://www1.eere.energy.gov/wind/pdfs/2012\\_wind\\_technologies\\_market\\_report.pdf](http://www1.eere.energy.gov/wind/pdfs/2012_wind_technologies_market_report.pdf).

<sup>48</sup> See Daniel Wood, *Wind Farm Growth Through the Years*, U.S. DEP’T OF ENERGY (Sept. 14, 2013, 4:45 PM), <http://energy.gov/articles/wind-farm-growth-through-years>.

<sup>49</sup> See *id.*

<sup>50</sup> See Dennis Jacobe, *Americans Want More Emphasis on Solar, Wind, Natural Gas*, GALLUP (Mar. 27, 2013) <http://www.gallup.com/poll/161519/americans-emphasis-solar-wind-natural-gas.aspx> (showing that 71% of Americans polled want the United States to place “more emphasis” on wind as a domestic source of energy).

15 N.C. J.L. & TECH. ON. 32, 42  
Wind Energy and the Migratory Bird Treaty Act

of jobs.<sup>51</sup> Wind turbines require no fuel to operate, so operating costs are low relative to other forms of electricity generation.<sup>52</sup> Further, the electricity generated creates no pollution, as is the case with coal-fired power plants.<sup>53</sup> One report from the U.S. Department of Energy estimates that if wind energy provides 20% of American energy needs by 2030, it can reduce annual emission of carbon dioxide (“CO<sub>2</sub>”) by the electrical energy sector by approximately 825 million metric tons.<sup>54</sup> Widespread use of wind energy will reduce CO<sub>2</sub> emissions, and less pollution from wind energy will create added benefits by reducing “health care and environmental costs associated with pollution.”<sup>55</sup>

The federal government has taken note of the benefits of the wind energy industry, and has even started to implement policy reforms to take advantage of the clean energy. The Energy Policy Act of 2005,<sup>56</sup> for example, sets minimum levels of electrical energy consumption by the federal government.<sup>57</sup> Presently, “not less than 7.5[%]” of the total amount of electric energy used by the federal government must be renewable, which includes energy generated by wind turbines.<sup>58</sup> The Energy Improvement and Extension Act of 2008 also extended the wind energy tax credit and provided other support for renewable energy.<sup>59</sup> In 2009, President Obama signed into law the American Reinvestment and

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<sup>51</sup> See *Wind Energy Benefits*, U.S. DEP’T OF ENERGY (Oct. 12, 2013, 2:26 PM), [http://www.windpoweringamerica.gov/pdfs/wpa/2011/wind\\_energy\\_benefits.pdf](http://www.windpoweringamerica.gov/pdfs/wpa/2011/wind_energy_benefits.pdf).

<sup>52</sup> See *id.*

<sup>53</sup> See *id.*

<sup>54</sup> U.S. DEP’T OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY CONTRIBUTION TO U.S. ELECTRICITY SUPPLY, 13–14 (2008), *available at* <http://www1.eere.energy.gov/wind/pdfs/41869.pdf>.

<sup>55</sup> U.S. DEP’T OF ENERGY, *supra* note 51.

<sup>56</sup> Pub. L. No. 109-58, 119 Stat 594.

<sup>57</sup> *Id.* at 614.

<sup>58</sup> *Id.* at 652.

<sup>59</sup> Pub. L. No. 110-343, 122 Stat 3807, 3811.

Recovery Act,<sup>60</sup> which expanded the grants and tax credits available to the wind energy industry.<sup>61</sup>

The renewable energy industry has also received increased interest from state governments. In 2007, North Carolina adopted a Renewable Energy and Energy Efficiency Portfolio Standard (“REPS”).<sup>62</sup> This statute made North Carolina the twenty-fifth state to require its energy providers to use renewable energy to generate a portion of the energy they produce.<sup>63</sup> Nevada has recently created an energy reduction plan that requires the state government to reduce “grid-based energy purchases for state-owned buildings” by 20% by 2015.<sup>64</sup> Michigan, in 2008, enacted a similar act aimed at reducing “state government grid-based purchases” by 25% by 2015.<sup>65</sup> Both the federal and state governments have recognized the benefits of renewable energy and are enacting laws to increase America’s renewable energy portfolio.

### C. *Wind Turbine Technology*

Wind turbines operate on a simple principle. Wind spins the turbine blades, called a rotor assembly.<sup>66</sup> The rotor assembly connects to a generator, which creates electricity.<sup>67</sup> Wind farm operators have an incentive to make the rotor diameter as large as possible, because a larger rotor diameter captures more wind and

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<sup>60</sup> Pub. L. No. 111-5, 123 Stat 115.

<sup>61</sup> *Id.* at 319.

<sup>62</sup> Renewable Energy and Energy Efficiency Portfolio Standards, N.C. GEN. STAT. § 62-133.8 (2007).

<sup>63</sup> REPS Citizen Guide, NC SUSTAINABLE ENERGY ASSOCIATION at 2 (June 13, 2012), available at [http://energync.org/assets/files/podcast\\_episodes/a-citizens-guide-to-the-nc-reps/a-citizens-guide-north-carolina-renewable-energy-energy-efficiency-portfolio-standard.pdf](http://energync.org/assets/files/podcast_episodes/a-citizens-guide-to-the-nc-reps/a-citizens-guide-north-carolina-renewable-energy-energy-efficiency-portfolio-standard.pdf).

<sup>64</sup> NEV. REV. STAT. § 701.215 (2013).

<sup>65</sup> MICH. COMP. LAWS § 460.1131 (2013).

<sup>66</sup> *Wind Turbine Interactions with Birds, Bats, and their Habitats: A Summary of Research Results and Priority Questions*, NAT’L WIND COORDINATING COLLABORATIVE (Oct. 16, 2013, 8:26 AM), [http://www1.eere.energy.gov/wind/pdfs/birds\\_and\\_bats\\_fact\\_sheet.pdf](http://www1.eere.energy.gov/wind/pdfs/birds_and_bats_fact_sheet.pdf) [hereinafter *Wind Turbine Interactions with Birds*].

<sup>67</sup> *Id.*

15 N.C. J.L. & TECH. ON. 32, 44  
Wind Energy and the Migratory Bird Treaty Act

generates more electricity.<sup>68</sup> This has led to modern wind turbines “mounted on towers 200–260 feet in height with rotors 150–260 feet in diameter.”<sup>69</sup> Even more impressive, the velocity at blade tips can exceed 138 miles per hour (“mph”), and can reach speeds up to 182 mph.<sup>70</sup>

Wind is actually a form of solar energy, caused by “uneven heating of the atmosphere by the sun.”<sup>71</sup> Wind flow depends on the roughness and rotation of the Earth, and is also influenced by the “topography of land, water, and plants.”<sup>72</sup> Wind turbines create electricity by converting wind into mechanical energy.<sup>73</sup> The turbine blades “catch” the wind and rotate, and this rotation moves a series of shafts and gears attached to a generator. This generator turns the mechanical energy from the rotating gears into electricity, which moves via transmission lines to nearby substations for home or commercial use.<sup>74</sup>

Figure 1<sup>75</sup> demonstrates the visual differences between horizontal- and vertical-axis wind turbines. Horizontal-axis wind turbines rotate counterclockwise, while vertical-axis wind turbines spin in the wind like a top.

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<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *How To Transform Wind Into Energy*, CONSERVE ENERGY FUTURE, [http://www.conserve-energy-future.com/Wind\\_Into\\_Energy.php](http://www.conserve-energy-future.com/Wind_Into_Energy.php) (last visited Oct. 28, 2013).

<sup>72</sup> *Id.*

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* This website also has a helpful video giving a visual run-through of the wind to electricity process.

<sup>75</sup> Figures 1(a)–(c) are available at <http://ej.iop.org/images/1748-9326/6/4/044017/Full/9575401.jpg>. They are not drawn to scale.

**Figure 1. Horizontal- and vertical-axis wind turbines**

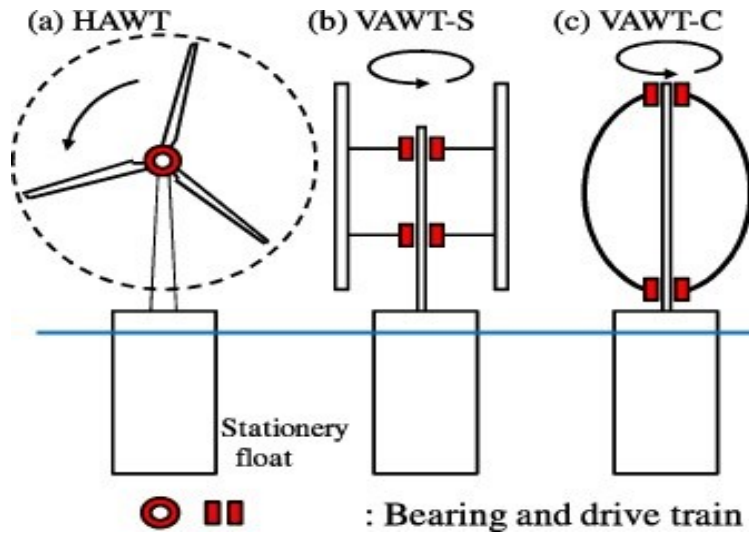


Figure 1(a) is a traditional horizontal-axis turbine and should be familiar to most readers. Figures 1(b) and 1(c) are two examples of vertical-axis turbines.

Horizontal-axis wind turbines are widespread in large part because of their high potential for energy generation.<sup>76</sup> Although common, a recent study shows that horizontal-axis turbines may not be the most effective or efficient option. According to the report, vertical-axis wind turbines can produce “power densities an order of magnitude greater” than traditional, horizontal-axis turbines.<sup>77</sup> The study found that horizontal-axis turbines have much lower power densities than vertical-axis turbines.<sup>78</sup> The large turbine diameter of the horizontal-axis turbines requires turbines to be spaced “3–5 turbine diameters apart in the cross-wind direction

<sup>76</sup> Kevin Bullis, *Will Vertical Turbines Make More of the Wind?*, MIT TECH. REVIEW (Apr. 8, 2013), <http://www.technologyreview.com/news/513266/will-vertical-turbines-make-more-of-the-wind/>.

<sup>77</sup> John O. Dabiri, *Potential Order-of-Magnitude Enhancement of Wind Farm Power Density via Counter-Rotating Vertical-Axis Wind Turbine Arrays*, 3 J. RENEWABLE SUSTAINABLE ENERGY 043104-1, 043104-1 (2011).

<sup>78</sup> *Id.*

and 6–10 diameters apart in the downwind direction.”<sup>79</sup> The smaller turbine footprint of vertical-axis turbines, however, allows for a closer grouping and much higher power densities.<sup>80</sup> Although horizontal-axis turbines have incredible individual efficiencies, reaching near the 59.2% theoretical limit, the power benefits from vertical-axis turbines come from placing the turbines closer together.<sup>81</sup> Closer groupings allow individual vertical-axis turbines to overcome their individual inefficiencies, as lost wind energy from one turbine “can be collected by an adjacent [vertical-axis turbine] in close proximity.”<sup>82</sup> This new information on turbine power densities can help alleviate the concerns of wind farm operators who are reluctant to move away from large, high output horizontal-axis wind turbines.

D. *Wind Turbines and Migratory Birds: Statistics and Projections*

While this boom in wind energy production is great for the wind energy industry and domestic electricity production, it has affected the migratory bird population. Several studies show that wind turbines kill birds every year when birds collide with the spinning turbine blades.<sup>83</sup> As the number of wind farms increased over the past few decades, the number of bird deaths caused by wind turbines also increased.<sup>84</sup> Based on an aggregation of several studies, one publication estimates between 20,000 and 37,000 bird deaths caused by wind turbines each year.<sup>85</sup> On the high end, the USFWS, in 2005, estimated that wind turbines cause as many as 440,000 bird deaths per year.<sup>86</sup> The groups in the wind energy

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<sup>79</sup> *Id.* at 043104-2.

<sup>80</sup> *Id.*

<sup>81</sup> *Id.* at 043104-8–9.

<sup>82</sup> *Id.* at 043104-9.

<sup>83</sup> Erickson et al., *supra* note 11, at 1034.

<sup>84</sup> *Id.*

<sup>85</sup> *Id.* at 1035.

<sup>86</sup> Albert M. Manville, II, *Towers, Turbines, Power Lines, and Buildings—Steps Being Taken by the U.S. Fish and Wildlife Service to Avoid or Minimize Take of Migratory Birds at these Structures*, in PARTNERS IN FLIGHT CONFERENCE 262, 268 (2009), available at [http://www.partnersinflight.org/pubs/mcallenproc/articles/pif09\\_anthropogenic%20impacts/manville\\_pif09.pdf](http://www.partnersinflight.org/pubs/mcallenproc/articles/pif09_anthropogenic%20impacts/manville_pif09.pdf).

industry even estimate that turbines cause 58,000 bird deaths per year.<sup>87</sup>

The high number of bird takes each year is largely a result of the design of wind turbines. Horizontal-axis wind turbines require higher wind speeds to generate electricity, so they are often placed in wind corridors directly in the path of migratory birds.<sup>88</sup> Further, horizontal-axis wind turbines are more efficient when they are larger, so horizontal-axis wind turbines have been getting larger over time.<sup>89</sup> This creates a higher and wider “target” for bird collisions.<sup>90</sup> Further, larger diameter rotors attain incredibly high speeds at the blade tips, up to 180 mph,<sup>91</sup> creating added difficulties for migratory birds attempting to navigate through or around wind farms. Problems with bird takes also arise from poor siting choices made when deciding where to place wind turbines.

Wind farms sited over high-prey areas or on popular migratory corridors also create higher number of bird takes per year.<sup>92</sup> Siting wind farms over high-prey areas creates additional problems for raptors, as the birds of prey must dive below the turbine blades to catch their quarry.<sup>93</sup> One California wind farm demonstrates just how devastating poor siting choices can be for the bird population.

The Altamont Pass Wind Resource Area, one of the largest and oldest wind farms in the country, is sited on a raptor breeding

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<sup>87</sup> *Id.*

<sup>88</sup> *Wind Turbine Interactions with Birds*, *supra* note 66, at 1.

<sup>89</sup> *Id.*

<sup>90</sup> Think of it as throwing darts at a dartboard, where birds are the darts and the turbine rotors represent the board. Over time, the dartboard has become larger, making it “easier” to hit.

<sup>91</sup> *Wind Turbine Interactions with Birds*, *supra* note 66, at 1.

<sup>92</sup> DAVE STERNER, A ROADMAP FOR PIER RESEARCH ON AVIAN COLLISIONS WITH WIND TURBINES IN CALIFORNIA ii–iii (2002), *available at* [http://www.energy.ca.gov/reports/2002-12-24\\_500-02-070F.pdf](http://www.energy.ca.gov/reports/2002-12-24_500-02-070F.pdf).

<sup>93</sup> SUSAN G. ORLOFF & ANNE FLANNERY, BIOSYSTEMS ANALYSIS, WIND TURBINE EFFECTS ON AVIAN ACTIVITY, HABITAT USE, AND MORTALITY IN ALTAMONT PASS AND SOLANO COUNTY WIND RESOURCE AREAS 4-3 (1992), *available at* [http://www.altamontsrc.org/alt\\_doc/orloff\\_and\\_flannery\\_1992.pdf](http://www.altamontsrc.org/alt_doc/orloff_and_flannery_1992.pdf).



ground and a major migratory route.<sup>94</sup> As such, the wind turbines located at Altamont Pass are estimated to kill “1,766 to 4,271 birds annually, including between 881 and 1330 raptors.”<sup>95</sup> The Altamont Pass Wind Resource Area is the oldest wind farm in the world,<sup>96</sup> and many of the over 5,000 turbines onsite are old and inefficient.<sup>97</sup> A recent settlement agreement involving NextEra Energy, one of the companies operating wind turbines in Altamont Pass, requires the company to phase-out its old turbines in favor of more “bird-friendly” wind turbines.<sup>98</sup> This settlement arose after NextEra failed to uphold the terms of an earlier agreement that required it to reduce the number of bird takes by its Altamont Pass turbines.<sup>99</sup> NextEra must replace roughly 2,400 “Old Generation” wind turbines that it currently operates, and shut down all existing turbines that it operates by 2015.<sup>100</sup> The settlement also requires NextEra<sup>101</sup> to use the “best scientific and commercial data” as well as “appropriate computer models that predict the most dangerous locations for birds” when deciding where to site new wind

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<sup>94</sup> K. SHAWN SMALLWOOD & CARL G. THELANDER, BIORESOURCE CONSULTANTS, DEVELOPING METHODS TO REDUCE BIRD MORTALITY IN THE ALMONT PASS WIND RESOURCE AREA 215 (2004), available at [http://www.energy.ca.gov/reports/500-04-052/500-04-052\\_00\\_EXEC\\_SUM.pdf](http://www.energy.ca.gov/reports/500-04-052/500-04-052_00_EXEC_SUM.pdf).

<sup>95</sup> *Brown's Office Brokers Settlement to Save Birds and Make Altamont Wind Turbines More Efficient*, CAL. OFFICE ATTORNEY GENERAL (Dec. 6, 2010), <http://oag.ca.gov/news/press-releases/browns-office-brokers-settlement-save-birds-and-make-altamont-wind-turbines-more>.

<sup>96</sup> *Id.*

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> *Id.*

<sup>101</sup> NextEra, it seems, cannot catch a break. The company also owns a solar energy installation where a number of dead water birds were found. It seems that birds are attracted to solar panels, which look like giant lakes from the air, and upon landing are too fatigued from the heat to take flight again. This incident is still recent, so it is unclear how the Bird Act may affect the solar energy industry. Chris Clarke, *Water Birds Turning Up Dead at Solar Projects in the Desert*, KCET (July 17, 2013, 4:30 PM), <http://www.kcet.org/news/rewire/solar/water-birds-turning-up-dead-at-solar-projects-in-desert.html>.

turbines.<sup>102</sup> This settlement is a way in which the industry can relieve the issue, as it should reduce the number of bird takes in the Altamont Pass region, one of the worst offenders of the Bird Act. Bird behavior, however, may also play a role in collisions with wind turbines.

Raptors are especially susceptible to wind turbine collisions. One study found that at certain sites in the Altamont Pass area, kestrels, red-tailed hawks, and golden eagles were killed more frequently than ravens and vultures, although those two species were more abundant in the area.<sup>103</sup> Behaviors like “flying at low altitudes and focused searching and stooping for prey” make raptors more “susceptible to collisions.”<sup>104</sup> Birds typically fly above the reach of wind turbines, but collide with the turbines during takeoff or landing.<sup>105</sup> These collisions threaten both the wind energy industry and our migratory bird population. With a few careful policy changes, the government could alleviate these problems.

### III. PROPOSED SOLUTIONS FOR THE WIND ENERGY INDUSTRY

Despite the growing problem between the competing goals of clean energy and bird conservation, Congress has failed to address the overlap between the two. In light of the technological advances in energy generation and the unintended effects the Bird Act has on those advances, Congress needs to reconsider the purpose and intent of the Act and make changes accordingly, keeping in mind the importance of protecting migratory birds and the need for domestic alternative energy. By adopting a new framework for cases prosecuted under the Bird Act, and with a policy change by USFWS, this problem can be temporarily resolved while waiting for Congressional action. The wind energy

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<sup>102</sup> CAL. OFFICE ATTORNEY GENERAL, AGREEMENT TO REPOWER TURBINES AT THE ALTAMONT PASS WIND RESOURCES AREA 4-5 (2010), *available at* [https://oag.ca.gov/system/files/attachments/press\\_releases/n2011\\_apwra\\_settlement\\_agreement.pdf](https://oag.ca.gov/system/files/attachments/press_releases/n2011_apwra_settlement_agreement.pdf).

<sup>103</sup> ORLOFF & FLANNERY, *supra* note 93, at 4-1, 4-2.

<sup>104</sup> STERNER, *supra* note 92, at ii.

<sup>105</sup> *Wind Turbine Interactions with Birds*, *supra* note 66, at 4.

industry should also take proactive steps to reduce incidental takes of migratory birds moving forward. These steps will promote domestic, renewable energy and provide stability for the fledgling wind industry.

A. *Congress Should Amend the Bird Act*

Courts and federal agencies are applying the Bird Act in ways not anticipated by Congress at the time of its enactment.<sup>106</sup> This is not surprising, as the technology of 1918 necessarily limited the application of the Act in 1918. Technology now, however, has far outstripped the imagination of the 1918 Congress and is exposing just how outdated the Bird Act is. Congress should amend the Bird Act to reflect advancing technology and shifting conservation goals. Specifically, Congress needs to address “incidental takes” under the Bird Act, and provide incentives for the wind industry to adopt more bird-friendly wind turbines.

The recently decided *Brigham* and *CITGO* cases<sup>107</sup> should alert Congress to the major inconsistencies with the Bird Act’s interpretation and application. Congress must balance its desire to protect migratory birds against its promotion of renewable energy.<sup>108</sup> Congress can do this by including an exception for incidental takes. This exception could be added into the opening text of the Bird Act<sup>109</sup> or by clearly defining “take” to except

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<sup>106</sup> See *supra* Part II.A (giving a brief look at the Act’s legislative history).

<sup>107</sup> See *infra* Part III.B (giving a more thorough look at these two cases).

<sup>108</sup> See *supra* Part II.B (discussing a few recent renewable energy policies enacted by both federal and state governments).

<sup>109</sup> One author has suggested that an amended Bird Act could read: “[I]t shall be unlawful at any time, by any means or in any manner, *excepting therein incidental harm or death to birds occurring from birds striking structures, including rotating or stationary wind energy turbine blades reasonably designed to minimize such collisions*, to pursue, hunt, take, capture, kill . . . any migratory bird . . .” John Arnold McKinsey, *Regulating Avian Impacts Under the Migratory Bird Treaty Act and Other Laws: The Wind Industry Collides with One of Its Own*, *The Environmental Protection Movement*, 28 ENERGY L.J. 71, 91 (2007) (emphasis added).

unintentional bird deaths.<sup>110</sup> Congress has amended environmental statutes before to address changing environmental desires<sup>111</sup> and should do so here. This would encourage wind energy by shielding it from an overbroad application of the Bird Act, while still protecting migratory birds consistent with the original purpose of the Act.<sup>112</sup>

Congress should also provide the wind industry with incentives to adopt the more bird-friendly vertical-axis wind turbines. The NextEra settlement in California has already shown that state governments and private entities are looking at technological solutions to reduce bird deaths caused by wind turbines.<sup>113</sup> In conjunction with amending the Bird Act to exempt incidental takes, Congress should consider either offering subsidies for converting to bird-friendly vertical-axis wind turbines or by imposing a timeline for phasing out deadly horizontal-axis wind turbines. Vertical-axis wind turbines have the potential to produce more energy than traditional wind turbines<sup>114</sup> and reduce the number of bird collisions.<sup>115</sup> By exempting incidental takes from liability under the Bird Act and encouraging wind farm operators to phase out traditional wind turbines, Congress will preserve the spirit of the Bird Act and foster the growth of the wind industry. Until Congress acts, however, courts and the USFWS must balance these competing conservation goals.

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<sup>110</sup> This would have far-reaching implications for all kinds of bird-takers, including automobiles, skyscrapers, airplanes, and cats. Meredith Blaydes Lilley & Jeremy Firestone, *Wind Power, Wildlife, and the Migratory Bird Treaty Act: A Way Forward*, 38 ENVTL. L. 1167, 1172 (2008).

<sup>111</sup> See *infra* Part III.C (discussing how Congress amended the Marine Mammal Protection Act after a case exposed the Act's weakness).

<sup>112</sup> See *supra* Part II.A (discussing the Bird Act's legislative background and its focus on protecting birds from overhunting).

<sup>113</sup> See *supra* Part II.C (discussing how the NextEra settlement will require the wind farm to phase out older turbines in favor of more bird-friendly turbines).

<sup>114</sup> See Dabiri, *supra* note 77, at 043104-1 (discussing a study that found vertical-axis wind turbines have a much higher energy potential).

<sup>115</sup> See *infra* Part III.D (discussing the benefits of vertical-axis wind turbines for the bird population).

B. *A New Framework from Brigham and CITGO*

The circuit split makes clear that courts are not consistently interpreting or applying the Bird Act. Two recent cases illustrate how courts have come to dissimilar outcomes based on similar facts, and how courts could decide incidental take cases under the Bird Act while waiting for Congressional action.

Last year, a North Dakota district court held that the Bird Act did not apply to an oil and gas company.<sup>116</sup> The United States charged Brigham Oil with violating the Bird Act after several dead birds were discovered in the reserve pits used by the company to store drill cuttings and mud-laden drilling fluids.<sup>117</sup> The court began its analysis of the Bird Act by examining the plain language meaning of the word “take” and found that meant “deliberate, not accidental, conduct.”<sup>118</sup> The court also examined the scope of the Bird Act and noted that expanding the prohibitions to all incidental conduct would make common, lawful activities, like “driving a vehicle, owning a building with windows, or owning a cat,” subject to penalty.<sup>119</sup> The court held that the Bird Act does not apply to incidental takes, stating that the “criminalization of lawful, commercial activity which may indirectly injure or kill migratory birds is not warranted under the Migratory Bird Treat [sic] Act . . . .”<sup>120</sup>

More recently, a Texas district court found that CITGO had violated the Bird Act by failing to install netting over one of its plant’s wellheads as required by Texas law and the Clean Air Act.<sup>121</sup> In *CITGO*, the court distinguished its case from *Brigham* by drawing attention to the “unlawful nature of the underlying act” that “directly resulted in the taking of migratory birds.”<sup>122</sup> The court also examined evidence that “a number of individuals [at the

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<sup>116</sup> *United States v. Brigham Oil & Gas, L.P.*, 840 F. Supp. 2d 1202, 1211 (D.N.D. 2012).

<sup>117</sup> *Id.* at 1204.

<sup>118</sup> *Id.* at 1208–09.

<sup>119</sup> *Id.* at 1212.

<sup>120</sup> *Id.* at 1213.

<sup>121</sup> *United States v. CITGO Petroleum Corp.*, 893 F. Supp. 2d 841, 847 (S.D. Tex. 2012).

<sup>122</sup> *Id.*

CITGO plant] saw oil-covered birds” as early as the mid- to late-90s.<sup>123</sup> As CITGO was already in violation of the Clean Air Act and failed to act on knowledge that migratory birds were being killed in its oil reserve pits, the court held CITGO liable for violations under the Bird Act.<sup>124</sup> The court concluded that it was “reasonably foreseeable that protected migratory birds might become trapped in the layers of oil on top of [the tanks, and that] CITGO was aware that this was happening for years and did nothing to stop it.”<sup>125</sup> This “reasonably foreseeable”<sup>126</sup> language hints that wind farm operations moving forward will have to take steps to reduce migratory bird takes to avoid prosecution under the Bird Act as the relationship between wind turbines and bird strikes become more apparent.<sup>127</sup>

These two cases can serve as a framework for future incidental take cases. The court in *Brigham* got it right when it stated that extending the Bird Act to all incidental takes would create “absurd results.”<sup>128</sup> Applying the Bird Act to every accidental killing would place an impossible burden on USFWS, which is responsible for enforcing the Bird Act’s prohibitions. Further, extending the Bird Act places an unreasonable burden on citizens, who cause migratory bird deaths by driving, owning tall buildings, or operating wind farms. Oftentimes, migratory birds kill themselves by flying into these objects with no action taken on the part of the owner.<sup>129</sup>

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<sup>123</sup> *Id.*

<sup>124</sup> *Id.* (mentioning repeatedly CITGO’s underlying violations, it seems the court was less sympathetic towards their arguments limiting the scope of the Bird Act).

<sup>125</sup> *Id.* at 848.

<sup>126</sup> *Id.*

<sup>127</sup> See *supra* Part II.C (discussing wind turbines and migratory bird collisions).

<sup>128</sup> *United States v. Brigham Oil & Gas, L.P.*, 840 F. Supp. 2d 1202, 1212 (D.N.D. 2012).

<sup>129</sup> U.S. FISH & WILDLIFE SERV., MIGRATORY BIRD MORTALITY 2 (2002), available at <http://www.fws.gov/birds/mortality-fact-sheet.pdf> (noting that collisions with building windows result in up to 976 million bird deaths per year and that collisions with automobiles may cause over 60 million bird deaths per year).

On the other hand, a blanket allowance of incidental takes would frustrate the original intent of the Bird Act and would potentially leave the wind energy industry with no incentive to protect migratory birds. To do so would allow situations like *CITGO* to go unpunished, which certainly subverts the purpose of the Bird Act. Instead, courts should recognize the wisdom in the *CITGO* holding that unlawful activity which results in the deaths of migratory birds is always a violation of the Bird Act.<sup>130</sup> As the *CITGO* court held, punishing only the underlying unlawful act is not sufficient to protect migratory birds.<sup>131</sup> The language of the Bird Act suggests prohibition of an “intentional act” and not a “lawful action that may result in the death of a bird.”<sup>132</sup> As the *Brigham* court discussed, the terms “take” and “kill” are “action verbs that generally denote intentional behavior.”<sup>133</sup> The definition of “take” from the Code of Federal Regulations uses the words “pursue, hunt, shoot, wound, kill, trap, [and] capture” which are strong indicators that the Bird Act is intended to prohibit intentional, directed conduct.<sup>134</sup>

Going forward, courts should adopt a hybrid of these two holdings to address incidental take cases under the Bird Act. Courts should not extend the Bird Act to prohibit incidental takings unless there is some other unlawful or unreasonable activity attached that results in the taking of migratory birds. This hybrid rule would be easy to apply, as it would eliminate the need for judicial excursions into legislative history or arguments over whether “take” actually means “take.” To determine if an unintentional take violated the Bird Act, courts adopting this hybrid would need only to find that the underlying action was unlawful or unreasonable and that it caused the incidental take of at least one migratory bird. Such a rule would reduce the burden on the courts to wade through an ambiguous Bird Act and provide

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<sup>130</sup> *CITGO Petroleum Corp.*, 893 F. Supp. 2d at 848.

<sup>131</sup> *Id.*

<sup>132</sup> *Brigham Oil & Gas*, 840 F. Supp. 2d at 1212.

<sup>133</sup> *Id.*

<sup>134</sup> 50 C.F.R. § 10.12 (2013).

stability for the burgeoning wind industry in the face of inconsistent and vague applications of environmental statutes.

The *CITGO* decision already implemented this sort of hybrid decision, when it held that the underlying unlawful actions of CITGO exposed the company to liability under the Bird Act.<sup>135</sup> Going forward, however, courts using this hybrid will have to decide whether improved wind turbine technology plays a part in the application of the *Brigham/CITGO* hybrid. Vertical-axis wind turbines result in far fewer migratory bird takes than traditional wind turbines.<sup>136</sup> As vertical-axis wind turbines become more economically feasible, and given their energy output advantages,<sup>137</sup> courts may require the wind farm operators to phase out horizontal-axis wind turbines in favor of the more bird-friendly turbines. For example, the *Moon Lake* court found the defendant had violated the MBTA by failing to “install inexpensive equipment on [their] power poles, causing the death or injury of [a number of birds].”<sup>138</sup> In the future, the hybrid *Brigham/CITGO* rule would account for increased feasibility of adopting vertical-axis wind turbines, as courts could find that continued and widespread use of traditional wind turbines is unreasonable in light of prevailing technologies.<sup>139</sup>

### C. USFWS, Migratory Birds, and the Chevron Deference

In the 1980s, the Supreme Court created a legal test for determining when to apply deference to federal agencies that have interpreted and applied the statutes Congress has granted them authority over.<sup>140</sup> The two-part *Chevron* test looks at whether

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<sup>135</sup> *CITGO Petroleum Corp.*, 893 F. Supp. 2d at 848.

<sup>136</sup> See *infra* Part III.C (discussing the particular benefits of vertical-axis wind turbines as they relate to reducing migratory bird takes).

<sup>137</sup> See *supra* Part II.B (discussing a study that found vertical-axis wind turbines have higher power densities than traditional turbines).

<sup>138</sup> *United States v. Moon Lake Elec. Ass’n, Inc.*, 45 F. Supp. 2d 1070, 1071 (D. Colo. 1999).

<sup>139</sup> See *infra* Part III.C (discussing in-depth the issue of whether newer, bird-friendly technology should factor into future courts’ analysis of the Bird Act and incidental take cases).

<sup>140</sup> *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843–44 (1984).



“Congress has directly spoken to the precise question at issue[]” and, if Congress has not addressed the issue, whether the “agency’s [interpretation] is based on a permissible construction of the statute.”<sup>141</sup> USFWS can use this deference to address ambiguity in the Bird Act.

To pass the two-part *Chevron* test, the statute must be ambiguous with respect to the incidental take issue and Congress must not have “directly spoken” to the issue.<sup>142</sup> The relevant language of the Bird Act is as follows:

Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, any part, nest, or egg of any such bird, or any product, whether or not manufactured, which consists, or is composed in whole or part, of any such bird or any part, nest, or egg thereof. . . .<sup>143</sup>

The Bird Act is ambiguous as to whether it applies to incidental takes, as even federal courts have been unable to agree on the meaning of the statute.<sup>144</sup> The language of the Act makes no mention about whether it applies to incidental takings of migratory birds, noting only that it prohibits directed actions like pursuit, hunting, killing, capturing, and taking.<sup>145</sup> In *Brigham Oil*, the court discussed at length the use of the word “take” and concluded it “does not refer to accidental activity or the unintended results of other conduct.”<sup>146</sup> The *Moon Lake* court, however, looked at that

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<sup>141</sup> *Id.* at 842–43.

<sup>142</sup> *Id.* at 842.

<sup>143</sup> Migratory Bird Treaty Act, 16 U.S.C. § 703(a) (2013).

<sup>144</sup> *See, e.g.*, *United States v. Moon Lake Elec. Ass’n, Inc.*, 45 F. Supp. 2d 1070 (D. Colo. 1999) (using the language of the Bird Act to hold those responsible for incidental takes liable); *Newton Cnty. Wildlife Ass’n v. U.S. Forest Serv.*, 113 F.3d 110 (8th Cir. 1997) (using the language of the Bird Act to hold those responsible for incidental takes not liable).

<sup>145</sup> Migratory Bird Treaty Act, 16 U.S.C. § 703(a) (2013).

<sup>146</sup> *United States v. Brigham Oil and Gas, L.P.*, 840 F. Supp. 2d 1202, 1209 (D.N.D. 2012).

same definition and held that Congress intended to “prohibit conduct beyond that normally exhibited by hunters and poachers.”<sup>147</sup>

Further, in 1974, Congress amended the Bird Act but did not address the incidental take issue.<sup>148</sup> If Congress wanted to address whether the Bird Act applies to incidental takes, it could have done so in 1974, shortly after enacting the Endangered Species Act (“ESA”).<sup>149</sup> In the ESA, Congress defined “take” much more broadly, including both “harm” and “harass.”<sup>150</sup> Congress’s use of such broad language to protect endangered animals indicates that their refusal to do so for migratory birds was intentional. In *Seattle Audubon Society v. Evans*,<sup>151</sup> the Ninth Circuit agreed with the lower court that the difference between the definition of “take” in the ESA and Bird Act was a “distinct and purposeful” act by Congress.<sup>152</sup> The Ninth Circuit drew a distinction between the ESA’s inclusive interpretation of “take” and the Bird Act’s narrower “take” by noting “[h]abitat destruction causes ‘harm’ . . . under the ESA but does not ‘take’ them within the meaning of the [Bird Act].”<sup>153</sup> This is not the only instance where Congress used a more stringent definition of “take” under a different statute.

The Marine Mammal Protection Act,<sup>154</sup> enacted in 1972, prohibits the take of any marine mammal. Under the Marine Mammal Protection Act, Congress defined “take” to mean “*harass, hunt, capture, or kill.*”<sup>155</sup> The statute further defines “harassment” to mean “*any act of pursuit, torment, or annoyance which . . . has the potential to injure a marine mammal . . . or has the potential to disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing,*

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<sup>147</sup> *Moon Lake*, 45 F. Supp. 2d, at 1074.

<sup>148</sup> An Act to Amend the Migratory Bird Treaty Act, Pub. L. No: 93-300, 88 Stat 190 (1974).

<sup>149</sup> Endangered Species Act of 1973, 16 U.S.C. § 1531 (2012).

<sup>150</sup> *Id.* at § 1532(19).

<sup>151</sup> 952 F.2d 297 (9th Cir. 1991).

<sup>152</sup> *Id.* at 303.

<sup>153</sup> *Id.*

<sup>154</sup> The Marine Mammal Protection Act of 1972, 16 U.S.C. § 1361 (2012).

<sup>155</sup> *Id.* at § 1362 (emphasis added).

nursing, breeding, feeding, or sheltering.”<sup>156</sup> The Marine Mammal Protection Act was enacted in 1972, two years before the Bird Act was amended.<sup>157</sup> Had Congress wanted to clarify whether the Bird Act applied to incidental takes, it certainly had the tools available to do so. In fact, one case decided under the Marine Mammal Protection Act spurred Congress to include a broad definition of “harass” in order to better protect marine mammals.<sup>158</sup> In *United States v. Hayashi*, the court, noting that “harassment” was not defined under the Marine Mammal Protection Act, held that “harassment” indicated a “direct and significant intrusion[] upon the normal, life-sustaining activities of a marine mammal,” and that firing shots near dolphins to deter them from eating bait was “not the kind of direct, serious disruption of a porpoise’s customary pursuits.”<sup>159</sup> Congress, perhaps unhappy with the outcome in *Hayashi*, amended the Marine Mammal Protection Act<sup>160</sup> to include an “expanded” and “much broader” definition of “harassment.”<sup>161</sup> The omission of the “harassment” language from the Bird Act, when Congress had demonstrated its willingness to enact and even amend far-reaching conservation statutes, must have been an intentional action. Given that the statute is ambiguous and Congress has failed to resolve the ambiguity, USFWS has the room to promulgate its own interpretation of the Bird Act.

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<sup>156</sup> *Id.* (emphasis added).

<sup>157</sup> *Id.* at § 1361 (becoming effective on Oct. 21, 1972); An Act to Amend the Migratory Bird Treaty Act, Pub. L. No: 93-300, 88 Stat 190 (1974) (being approved June 1, 1974, two years after the passing of the Marine Mammal Protection Act).

<sup>158</sup> See generally *United States v. Hayashi*, 22 F.3d 859 (9th Cir. 1993) (holding that firing shots into the water to scare away dolphins did not constitute a “take” under the Marine Mammal Protection Act because “harass” is a “general term”).

<sup>159</sup> *Id.* at 864–65.

<sup>160</sup> Marine Mammal Protection Act Amendments of 1994, Pub. L. 103-238, 108 Stat. 532.

<sup>161</sup> *City of Sausalito v. O’Neill*, 386 F.3d 1186, 1224–25 (9th Cir. 2004) (calling into doubt the validity of its previous decision in *Hayashi* in light of the amended and expanded definition of “harassment” under the Marine Mammal Protection Act).

The remaining question under the *Chevron* deference is what interpretation USFWS should adopt and whether that interpretation is “based on a permissible construction of the statute.”<sup>162</sup> As argued above, the Bird Act should extend only to incidental takes caused by already unlawful or unreasonable activity, as in *CITGO*.<sup>163</sup> USFWS should adopt this interpretation of the Bird Act’s prohibition against takings because it would allow the agency to ensure protection of migratory birds while also allowing clean, renewable energy to thrive. As “considerable weight should be accorded to an executive department’s construction of a statutory scheme it is entrusted to administer,” courts will likely find that a reasonable interpretation of the Bird Act by the USFWS is permissible under the *Chevron* deference.<sup>164</sup> In fact, courts have already found this interpretation reasonable in some form.<sup>165</sup>

In considering whether this interpretation of the Bird Act is reasonable, it is important for courts to consider the long game. While Congress did intend to protect migratory birds when enacting the Bird Act, it could not have predicted the serious climate problems created by nearly a century of heavy fossil fuel usage. Wind energy offers clean, renewable energy at a time when such energy is more valuable than ever. There is no point in protecting migratory birds if the fragile climate is pushed too far and serious environmental consequences occur.

While the courts and USFWS play a prominent role in addressing this issue, the wind energy industry should be proactive

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<sup>162</sup> *Chevron, U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843 (1984).

<sup>163</sup> *United States v. CITGO Petroleum Corp.*, 893 F. Supp. 2d 841 (D. Tex. 2012).

<sup>164</sup> *Chevron*, 467 U.S. at 844.

<sup>165</sup> See *United States v. FMC Corp.*, 572 F.2d 902, 909 (2d Cir. 1978) (holding that while not every bird death should result in liability under the Bird Act, FMC’s failure to prevent its chemicals from poisoning the water made strict liability appropriate); *United States v. Brigham Oil and Gas, L.P.*, 840 F. Supp. 2d 1202, 1209 (D.N.D. 2012) (holding that extending the Bird Act to every unintentional bird take would be an unreasonable interpretation of the statute); *CITGO*, 893 F. Supp. 2d at 841 (holding that the Bird Act extended to an oil company whose actions not only resulted in migratory bird takings, but violated other state and federal laws)

in taking steps to alleviate the potential impact of the Bird Act in the future.

D. *Vertical-Axis Turbines*

Towering 100 meters above the ground and sporting great rotating blades, traditional horizontal-axis wind turbines are estimated to kill roughly 30,000 migratory birds each year.<sup>166</sup> Vertical-axis wind turbines, however, may prove to reduce bird impacts while still being cost effective and energy efficient.<sup>167</sup> Where horizontal-axis wind turbines are large and spin like windmills, vertical-axis wind turbines are much smaller—about ten meters tall—and spin more like “poles on a carousel.”<sup>168</sup>

Vertical-axis wind turbines have a number of advantages over traditional wind turbines. One major advantage of the vertical-axis wind turbine is that the generator and gearbox can be placed on the ground, which makes maintenance much easier and does not strain the main pole relative to horizontal-axis turbines.<sup>169</sup> The vertical-axis turbines are more versatile in that they can use wind from any direction to generate electricity, while traditional turbines can only take advantage of upwinds or downwinds.<sup>170</sup> The vertical-axis wind turbines are also quieter and smaller, so they can be used in more residential and urban areas, and in areas that restrict buildings or constructions over a certain height.<sup>171</sup>

In addition to the cost and energy benefits of vertical-axis wind turbines, these turbines can reduce migratory bird takes. The wind industry should adopt this design to further alleviate the Bird Act roadblock facing the industry. Vertical-axis wind turbines can turn at lower wind speeds than traditional wind turbines, which allows

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<sup>166</sup> See Erickson et al., *supra* note 11, at 1034–36.

<sup>167</sup> Kevin Bullis, *Will Vertical Turbines Make More of the Wind?*, MIT TECH. REV. (Apr. 8, 2013), <http://www.technologyreview.com/news/513266/will-vertical-turbines-make-more-of-the-wind/>.

<sup>168</sup> *Id.*

<sup>169</sup> *Vertical Axis Wind Turbines*, WIND TURBINES NOW, <http://www.windturbinesnow.com/vertical-axis-wind-turbines.htm> (last visited Sept. 22, 2013).

<sup>170</sup> *Id.*

<sup>171</sup> *Id.*

them to be built much lower to the ground.<sup>172</sup> Further, as lower wind speeds are still effective; vertical-axis turbines do not need to be built in high wind speed areas, which often overlap with migratory bird flight paths.<sup>173</sup> Because the turbines rotate on a vertical axis, the blade diameter is not as large as traditional turbines and it creates a smaller, more condensed target that is easier for birds to avoid.<sup>174</sup> As the vertical-axis wind turbines are lower to the ground and have smaller blade diameters, wind farm operators can site them in the same location as the horizontal-axis wind turbines and still reduce the number of bird takes. This takes advantage of the wind farm operator's already-existing right-of-way in high wind-speed corridors and helps to reduce the cost of implementing the new vertical-axis wind turbines. All of these features serve to keep wind turbines out of the flight paths of migratory birds, which reduces bird impacts.

As it stands now, courts have looked at several factors when determining whether a take constitutes a violation of the Bird Act.<sup>175</sup> Vertical-axis wind turbines provide a number of clear benefits for migratory birds, so they may play an important role in future Bird Act cases where courts have adopted the *Brigham/CITGO* hybrid rule. There are two opposing arguments made on this issue. Courts may find that a wind farm that fails to reduce bird takes by purchasing and installing vertical-axis wind turbines, or some other economically feasible solution for reducing bird takes, is liable for incidental takes under the Bird Act. This decision, when vertical-axis wind turbines may be more cost-effective and bird-friendly than traditional wind turbines, could be deemed unreasonable by courts using a *Brigham/CITGO* hybrid analysis. On the other hand, forcing wind farms to adopt vertical-

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<sup>172</sup> *Id.*

<sup>173</sup> *Id.*

<sup>174</sup> On average, horizontal-axis turbines have a rotor diameter of 205 feet. *See* Energy Policy Act of 2005, Pub. L. No. 109-58, 119 Stat 594, 652. The vertical-axis wind turbines used in the Dabiri study had a rotor diameter of about 4.2 feet. *See* Dabiri, *supra* note 77, at 043104-2.

<sup>175</sup> *See supra* Part II.A (discussing the numerous incidental take cases prosecuted under the Bird Act and the various ways courts have come to their holdings).

axis wind turbines could be unreasonable, as it may unnecessarily stifle growth in the industry by imposing large financial burdens on wind farm operators.<sup>176</sup> Courts could rely on a cost-benefit analysis of the adoption of vertical-axis wind turbines, to ensure that the hybrid test is not unfairly prosecuting wind farm operators for failing to adopt a technology that is not yet competitive with traditional technology.

In short, widespread use of vertical-axis turbines over horizontal-axis turbines will have numerous benefits for both migratory birds and wind farm operators.<sup>177</sup> The smaller target provided by vertical-axis turbines will reduce the number of migratory bird deaths caused by collisions with turbines. Wind turbine siting is less of an issue with vertical-axis turbines, as the turbines can operate in low wind-speed areas.<sup>178</sup> Clever siting of vertical-axis turbines will take advantage of a vertical-axis turbine design that lets the turbines work together to overcome individual

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<sup>176</sup> The Bird Act's misdemeanor penalty imposes up to \$15,000 in fines, six months in prison, or both. 16 U.S.C §§ 703, 707 (2013). This might not seem like much, but it is a "per bird" fine so there is potential for prohibitively high fines. *Id.* The Altamont Pass area, with the highest number of bird collisions among wind farms, could be liable for up to \$64,000,000 in fines. *See* SMALLWOOD & THELANDER, *supra* note 94 (taking the higher estimate of 4,271 bird collisions and multiplying it by the \$15,000 maximum fine under the Bird Act's misdemeanor provision).

<sup>177</sup> There are a handful of disadvantages associated with vertical-axis wind turbines, however. The Dabiri study cited earlier in this Recent Development is still only discussing the *potential* energy density of vertical-axis wind turbines, not the field-proven energy density of the turbines. Dabiri, *supra* note 77, at 043104-2. Another major roadblock to widespread adoption of vertical-axis wind turbines is the upfront cost of powering down old turbines and installing and powering up new turbines. Horizontal-axis wind turbines vastly outnumber vertical-axis wind turbines, and the costs associated with replacing turbines may mean that wind farms are locked in to the horizontal-axis technology for the foreseeable future.

<sup>178</sup> This actually creates a number of benefits, and not just for the birds. Wind farms often come under fire from citizens concerned about the visual impact of the turbines, but lower-profile wind turbines could alleviate those concerns. *See* Katharine Q. Seelye, *Koch Brother Wages 12-Year Fight Over Wind Farm*, N.Y. TIMES (Oct. 22, 2013), available at [http://www.nytimes.com/2013/10/23/us/koch-brother-wages-12-year-fight-over-wind-farm.html?\\_r=0](http://www.nytimes.com/2013/10/23/us/koch-brother-wages-12-year-fight-over-wind-farm.html?_r=0).

inefficiencies.<sup>179</sup> While adopting vertical-axis wind turbines will not eliminate migratory bird takings by turbine collisions entirely, it will demonstrate that the wind industry is taking proactive steps to reduce its impact on the environment. Regardless of whether the courts adopt a new rule or if USFWS promulgates an unambiguous interpretation under the *Chevron* deference, the wind energy industry needs to consider this forward-thinking step to mitigate its impact on migratory birds.

#### IV. CONCLUSION

The wind energy industry is a vital part of America's energy profile. If the current Administration is serious about reducing America's reliance on foreign and nonrenewable fuels, the federal government needs to reevaluate how the Bird Act interacts with the wind energy industry.<sup>180</sup> Wind farm operators could be charged with several thousand violations of the Bird Act if no action is taken to resolve the ambiguity of the Bird Act's language. The uncertainty surrounding the Bird Act's treatment of incidental takes needs to end. Extending the Bird Act to allow incidental takes by wind turbines that are lawful and reasonable will ensure the health of the wind energy industry and America's energy independence.

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<sup>179</sup> See *supra* note 77 and accompanying text (discussing the high energy potential of well-placed vertical-axis wind turbines).

<sup>180</sup> After this Recent Development was completed, Duke Energy Corp. pled guilty to violations under the Bird Act for the deaths of roughly 160 birds between 2009 and 2013. See Dina Cappiello, *Guilty Plea in Bird Deaths at Wind Farms a First*, THE BIG STORY (Nov. 23, 2013, 3:18 AM), <http://bigstory.ap.org/article/guilty-plea-bird-deaths-wind-farms-first>. This marks the first time that a wind farm operator was prosecuted under the Bird Act. *Id.* In response to this plea, the Obama administration announced a new rule that will allow wind farm operators to "kill or injure eagles without the fear of prosecution." See Dina Cappiello, *US to Allow Eagles Death – To Aid Wind Power*, THE BIG STORY (Dec. 6, 2013, 3:20 PM), <http://bigstory.ap.org/article/wind-power-us-extends-permit-eagle-deaths>. This new rule pertains only to the taking of eagles, and not migratory birds generally. *Id.* The Obama administration's actions seem to be consistent with the policy reforms that the author advocates in this Recent Development, boding well for the industry.



To promote clean, renewable energy and protect migratory birds, while still ensuring the wind energy industry is not unfairly stopped from growing, several steps should be taken. First, Congress should take definite steps to update and clarify the Bird Act. By addressing how the Bird Act treats incidental takes, Congress could provide guidance to the courts and federal agencies, which have struggled with uniform enforcement of the Bird Act. Second, the courts should adopt a hybrid *Brigham/CITGO* approach to incidental take cases under the Bird Act. This will ensure that the government can still prosecute unlawful activity resulting in migratory bird deaths under the Bird Act, which will further discourage the unlawful activity in the first place. A hybrid approach also allows some leeway for instances of purely accidental migratory bird deaths, like when birds fly into wind turbines. Third, USFWS could adopt and promulgate a clearer interpretation of the Bird Act and end the question over whether it applies to incidental takes. Under the *Chevron* deference, USFWS could guide courts on how to interpret the Bird Act and could use that deference to protect the wind energy industry and others who incidentally take migratory birds. Fourth, the wind energy industry should adopt vertical-axis turbines. This would greatly reduce the number of migratory deaths caused by wind turbines, and would be a proactive step by the wind energy industry to demonstrate its commitment to conservation and a healthy environment. Further, vertical-axis turbines could allow for greater power generation, as the turbines' design efficiencies create higher power densities.

The Migratory Bird Treaty Act is one of the first environmental statutes enacted, dating back to 1918. It is time to update how the Bird Act is enforced, especially when new technologies and goals unanticipated by the Bird Act's creators are being threatened by the incidental take prohibition in some jurisdictions. Any of the solutions proposed in the article would create stability for not just the wind energy industry, but also for future enforcement of the Migratory Bird Treaty Act.