

# Finding The Balance: Harmonizing Renewable Energy With Wildlife Conservation

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# FINDING THE BALANCE:

## HARMONIZING RENEWABLE ENERGY WITH WILDLIFE CONSERVATION

by Tina R. Goel\*

In 2009, Secretary Salazar announced that the development of renewable energy is a “top priority” for the Department of the Interior (“DOI”),<sup>1</sup> and approximately one year later he approved the first offshore wind energy project.<sup>2</sup> Although prioritizing renewable energy development is an important step towards using fewer finite resources, renewable energy production must not be permitted to sidestep compliance with federal environmental laws.<sup>3</sup> Developers, regulators, and wildlife advocates must not be permitted to ignore threats to biodiversity and other aspects of natural ecology caused by renewable energy projects.

While energy consumption in the United States has been on the rise for sixty years, domestic production has been unable to keep up with the increase since 1970, resulting in substantial energy imports.<sup>4</sup> During the same period, domestic renewable energy consumption also increased and in 2008, it accounted for seven percent of total energy consumed.<sup>5</sup> To reduce dependence on foreign energy sources and slow the pace of climate change, stakeholders must seriously consider increasing domestic wind and solar energy production.<sup>6</sup>

The environmental effects of fossil fuels, such as coal and oil, are well established and often cited as reasons for diversifying energy production and consumption.<sup>7</sup> Coal’s unique environmental concerns begin with adverse effects on water and land during mining and persist well after we use coal-generated electricity, emitting greenhouse gases that exacerbate climate change.<sup>8</sup> Similar to coal, oil’s environmental effects begin as early as exploration with the use of seismic testing to identify oil reserves and continue through extraction, refining, transportation, and consumption.<sup>9</sup> In addition, whether for a coal mining operation or an oil-drilling project, a related concern is biodiversity conservation and compliance with the Endangered Species Act.<sup>10</sup>

Although the use of renewable energy has fewer adverse environmental effects than the use of fossil fuels, there are still numerous concerns arising from the development of wind and solar energy.<sup>11</sup> Before any “green” energy is generated, equipment for wind and solar projects must be produced, transported, and installed—all through a carbon-intensive process.<sup>12</sup> In addition, site selection for wind and solar energy projects must take into account possible conflicts with much needed habitat for endangered species.<sup>13</sup> To assist in site selection, the Natural Resources Defense Council (“NRDC”) developed and released an interactive map highlighting areas of the western United States that are inappropriate for development.<sup>14</sup> This however, should not discourage renewable energy advocates and industry; early collaborative planning can ensure the success of renewable energy projects.

Wind projects are often criticized for their potential to negatively affect avian and bat populations.<sup>15</sup> Proposed approximately a decade ago, the Cape Wind project has been a source of great conflict between those seeking to protect an important migratory bird route and those seeking to develop offshore wind power; it recently received federal approval.<sup>16</sup> This approval bodes well for renewable energy advocates and developers, but the cost of progress is too high if a thorough review of impacts upon endangered species has not been conducted.<sup>17</sup> Nonetheless, a balance between renewable energy and biodiversity is possible.<sup>18</sup>

In December 2009, in a West Virginia wind project litigation, the court held that although “there is a virtual certainty that Indiana bats will be harmed [during much of the year] . . . in violation of § 9 of the [Endangered Species Act]” the turbines already under construction may operate while the bats are hibernating in the winter.<sup>19</sup> To gain permission to operate the turbines year-round, the court invited the developer to apply for an incidental take permit,<sup>20</sup> which is designed to authorize takings of endangered species, such as the Indiana bat.<sup>21</sup> Such permits often contain mitigation measures designed to limit harm to wildlife.<sup>22</sup> As the court noted, “[t]he two vital federal policies . . . one favoring the protection of endangered species, and the other encouraging development of renewable energy resources . . . are not necessarily in conflict.”<sup>23</sup>

Solar energy projects are also anticipated to threaten endangered species<sup>24</sup> and projects near desert tortoise and pupfish habitats can learn from the Indiana bat wind project. In addition to disturbing important habitat, solar projects can cause avian mortality and consume scarce water supplies.<sup>25</sup> Nonetheless, by consulting the NRDC renewable energy map prior to siting a project,<sup>26</sup> applying for an incidental take permit,<sup>27</sup> and consulting with affected state governments, such as Arizona and California,<sup>28</sup> developers can gain access to much needed sites for energy generation.

We must not presume that a wind or a solar project is environmentally sound merely because it emits less carbon dioxide than fossil fuels.<sup>29</sup> All stakeholders—environmentalists, industry, and the government—must remember that no source of energy is truly green<sup>30</sup> and that a legal framework exists to help determine that a hydroelectric project in the middle of the desert is probably not environmentally sound. 

**Endnotes:** Finding the Balance: Harmonizing Renewable Energy with Wildlife Conservation *continued on page 56*

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<sup>1</sup> Press Release, U.S. Dep't of the Interior, Secretary Salazar Issues Order to Spur Renewable Energy Development on U.S. Public Lands (Mar. 11, 2009), [http://www.blm.gov/ca/st/en/info/newsroom/2009/march/DOI0911\\_Salazar\\_spurs\\_renewables.print.html](http://www.blm.gov/ca/st/en/info/newsroom/2009/march/DOI0911_Salazar_spurs_renewables.print.html).

<sup>2</sup> Press Release, U.S. Dep't of the Interior, Secretary Salazar Announces Approval of Cape Wind Energy Project on Outer Continental Shelf off Massachusetts (Apr. 28, 2010), <http://www.doi.gov/news/doinews/Secretary-Salazar-Announces-Approval-of-Cape-Wind-Energy-Project-on-Outer-Continental-Shelf-off-Massachusetts.cfm>; see Ros Krasny, *Cape Wind, First U.S. Offshore Wind Farm, Approved*, REUTERS, Apr. 28, 2010, <http://www.reuters.com/article/idUSTRE63R42X20100428> (announcing that Cape Wind's approval is encouraging for other offshore projects because it has withstood much opposition).

<sup>3</sup> Cf. DOI Press Release, *supra* note 1 (announcing a task force "to resolve obstacles to renewable energy permitting, siting, development, and production"). Renewable energy regulation is not an insurmountable obstacle; those same companies that have adapted to complying with fossil fuel regulations are renewable energy research and development investors and are familiar with many applicable regulations. Cf. JERRY TAYLOR & PETER VAN DOREN, CATO INST., POL'Y ANALYSIS NO. 422, *EVALUATING THE CASE FOR RENEWABLE ENERGY: IS GOVERNMENT SUPPORT WARRANTED?* 2 (2002), available at <http://www.cato.org/pubs/pas/pa422.pdf> (highlighting that "corporate conglomerates" such as Exxon and Shell have invested in renewable energy research and development projects since the 1970s).

<sup>4</sup> See ENERGY INFO. ADMIN., U.S. DEP'T OF ENERGY, *ANNUAL ENERGY REVIEW 2008 xix* (2009) [hereinafter EIA], available at <http://www.eia.doe.gov/emeu/aer/pdf/aer.pdf> (illustrating production, consumption, and imports of various sources of energy). In 2008, the U.S. consumed 884.5 million tonnes of oil ("MTO"), 600.7 MTO-equivalent of natural gas, and 565.0 MTO-equivalent of coal; BRITISH PETROLEUM, *BP STATISTICAL REVIEW OF WORLD ENERGY 41* (2009), available at [http://www.bp.com/liveassets/bp\\_internet/globalbp/globalbp\\_uk\\_english/reports\\_and\\_publications/statistical\\_energy\\_review\\_2008/STAGING/local\\_assets/2009\\_downloads/statistical\\_review\\_of\\_world\\_energy\\_full\\_report\\_2009.pdf](http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/reports_and_publications/statistical_energy_review_2008/STAGING/local_assets/2009_downloads/statistical_review_of_world_energy_full_report_2009.pdf) (providing energy production and consumption information for over fifty countries).

<sup>5</sup> See EIA, *supra* note 4, at 282 (illustrating that wind and solar were each only one and seven percents of the total ten percent attributed to renewable energy). Nonetheless, the U.S. leads the world in wind power generation capacity; BRITISH PETROLEUM, *supra* note 4, at 5 (noting that wind and solar generation capacity are growing at above average rates).

<sup>6</sup> Cf. Lincoln L. Davies, *Alternative Energy & the Energy-Environment Disconnect*, 46 *IDAHO L.R.* 473, 474 (2010) ("An America no longer addicted to oil would be sustainable and secure: a more self-reliant nation . . . where energy consumption and environmental protection fit hand in glove . . . [B]reaking the nation's oil addiction inevitably demands the simultaneous pursuit of energy and environmental objectives.").

<sup>7</sup> See, e.g., Natural Resources Defense Council, *Stop Dirty Fuels*, <http://www.nrdc.org/energy/dirtyfuels.asp> (last visited Apr. 24, 2009) (arguing that "we now face a choice: to set a course for a more sustainable energy future of clean, renewable fuels, or to develop ever-dirtier sources of transportation fuel derived from fossil fuels — at an even greater cost to our health and environment").

<sup>8</sup> See CLEAN AIR TASK FORCE, *CRADLE TO GRAVE: THE ENVIRONMENTAL IMPACTS FROM COAL 2* (2001), available at [http://www.catf.us/publications/reports/Cradle\\_to\\_Grave.pdf](http://www.catf.us/publications/reports/Cradle_to_Grave.pdf) (providing a life-cycle analysis of coal). Run-off from surface piles of mining materials contaminates surface water while groundwater is affected by the dislocation of aquifers. See *id.* (discussing adverse effects of coal extraction and mining). Coal transportation also results in damage to the ambient air. See *id.* at 3 (stating that coal transportation by truck, rail, or "coal slurry pipeline" indirectly or directly affects the air).

<sup>9</sup> See E&P FORUM/UNEP, *ENVIRONMENTAL MANAGEMENT IN OIL & GAS EXPLORATION & PRODUCTION 17-20* (1997), available at [www.ogp.org.uk/pubs/254.pdf](http://www.ogp.org.uk/pubs/254.pdf) (identifying the environmental concerns of oil and gas development in a chart); *id.* at 39-49 (providing a list of environmental protection measures for oil and gas development). Cf. Press Release, American Geological Institute, *Petroleum and the Environment* (Mar. 10, 2005), [http://www.agiweb.org/news/Petroleum\\_final.pdf](http://www.agiweb.org/news/Petroleum_final.pdf) (announcing the release of a report explaining environmental issues associated with petroleum).

<sup>10</sup> See 16 U.S.C. §§ 1531-1544 (2006) (prohibiting the unauthorized taking of a listed—endangered or threatened—species or modification of its critical habitat); see generally ENERGY & BIODIVERSITY INITIATIVE, *EBI REPORT: INTEGRATING BIODIVERSITY INTO OIL & GAS DEVELOPMENT* (2007), <http://www.theebi.org/products.html> (providing guides as to the incorporation of biodiversity protection into the various stages of oil and gas development).

<sup>11</sup> See generally Javier Santillan et al., *Environmental Impacts Associated with Manufacturing of Solar and Wind Power Alternative Energy Systems*, 20 *REMEDIATION J.* 107 (2010), available at <http://www3.interscience.wiley.com/journal/123308850/abstract?CRETRY=1&SRETRY=0> (summarizing "the environmental impacts associated with raw material extraction and refining, product manufacturing, use, and postuse disposal for photovoltaic (PV) and wind turbine technologies").

<sup>12</sup> *Contra* American Wind Energy Association, *Wind Energy and the Environment*, [http://www.awea.org/faq/wwt\\_environment.html](http://www.awea.org/faq/wwt_environment.html) (last visited Apr. 24, 2010) [hereinafter AWEA] ("Studies have found that even when . . . manufacturing wind turbines and building wind plants . . . are included, wind energy's CO<sub>2</sub> emissions are quite small.").

<sup>13</sup> See generally Victoria Sutton & Nicole Tomich, *Harnessing Wind is Not (By Nature) Environmentally Friendly*, 22 *PACE ENVTL. L.R.* 91 (2005) (arguing that wind energy regulation does not adequately protect endangered species).

<sup>14</sup> See *U.S. Groups Say Vast Areas Off-Limits to Clean Energy*, REUTERS, Apr. 1, 2009, <http://www.reuters.com/article/GCA-GreenBusiness/idUSTRE5307A020090401> (noting that the map covers thirteen western states); NRDC, *Clean Energy and Conservation*, <http://www.nrdc.org/land/sitingrenewables/default.asp> (last visited Apr. 18, 2010) (providing a link to view the map).

<sup>15</sup> See Meredith Blaydes Lilley & Jeremy Firestone, *Wind Power, Wildlife, & the Migratory Bird Treaty Act: A Way Forward*, 38 ENVTL. L. 1167 (2008) (suggesting that a bat protection act would assist in lowering bat mortality caused by wind projects); see also AWEA, *supra* note 12 (comparing sources of human-induced avian mortality and concluding that wind turbines cause far fewer avian deaths than collisions with buildings).

<sup>16</sup> See Krasny, *supra* note 2 and accompanying text (declaring approval of the Cape Wind project despite pending litigation); see also Sutton, *supra* note 13, at 100-02 (discussing the initial difficulty in assessing and permitting the project due to a lack of agency expertise).

<sup>17</sup> See Patrick Cassidy, *Wind Farm Lawsuit May Be Next*, CAPE COD TIMES, Mar. 19, 2010, <http://www.capecodonline.com/apps/pbcs.dll/article?AID=/20100319/NEWS/3190325/-1/special01> (noting that wildlife advocates argue that the biological opinion issued by the federal government does not contain “adequate measures to preserve the [roseate tern and piping plover]” two species of endangered and threatened birds).

<sup>18</sup> Cf. U.S. FISH & WILDLIFE SERVICE, WIND TURBINE GUIDELINES ADVISORY COMMITTEE RECOMMENDATIONS vii (2010), [http://www.fws.gov/habitatconservation/windpower/Wind\\_Turbine\\_Guidelines\\_Advisory\\_Committee\\_Recommendations\\_Secretary.pdf](http://www.fws.gov/habitatconservation/windpower/Wind_Turbine_Guidelines_Advisory_Committee_Recommendations_Secretary.pdf) (noting that “as the United States moves to expand wind energy production, it also must maintain and protect the nation’s wildlife and habitats, which wind energy production can negatively affect”). For a discussion of the European Union’s approach to wind projects, see Donald Zillman et al., *More Than Tilting at Windmills*, 49 WASHBURN L.J. 1 (2009).

<sup>19</sup> Animal Welfare Inst. v. Beech Ridge Energy LLC, 675 F. Supp. 2d 540, 579-81 (D. Md. 2009); see Maria Glod, *Court Constricts W.Va. Wind Farm to Protect Bats*, WASH. POST, Dec. 10, 2009, <http://www.washingtonpost.com/wp-dyn/content/article/2009/12/09/AR2009120904106.html> (stating that although the environmental plaintiffs “support wind power as one way to mitigate climate change” that the risks to the bat presented by the wind project as proposed was too great).

<sup>20</sup> See *Beech Ridge*, 675 F. Supp. 2d at 581 (“Outside [the hibernation] period determining the timing and circumstances under which wind turbine operation can occur without danger of the take of an Indiana bat is beyond the competence of this Court, but is well within the competence of the FWS under the ITP process.”).

<sup>21</sup> See 16 U.S.C. § 1533(a) (authorizing the grant of a permit for the taking of an endangered species that is “incidental to, and not the purpose of, the carrying out of an otherwise lawful activity”).

<sup>22</sup> *Id.* A comparable authorization to take an endangered species is available for projects with a federal nexus via the § 7 inter-agency consultation process. See 16 U.S.C. § 1536.

<sup>23</sup> *Beech Ridge*, 675 F. Supp. 2d at 581 (noting Congressional encouragement to develop of wind energy through the Wind Energy Research and Development Act of 2009, H.R. 3165, 111th Cong. (2009)).

<sup>24</sup> See Posting of Todd Woody to Green Blog, <http://green.blogs.nytimes.com/2010/02/11/brightsource-alters-solar-plant-plan-to-address-concerns-over-desert-tortoise/> (Feb. 11, 2010, 12:20 EST) (highlighting the threat to the desert tortoise posed by a solar energy project); *Desert Clash in West Over Solar Power, Water*, ASSOCIATED PRESS, Apr. 18, 2009, <http://www.msnbc.msn.com/id/30283556> (discussing the conflict over water as a result of its use as a cooling agent in solar power generations).

<sup>25</sup> See Hadassah M. Reimer & Sandra A. Snodgrass, *Tortoises, Bats, & Birds, Oh My: Protected-Species Implications For Renewable Energy Projects*, 46 IDAHO L.R. 545, 572 (2010) (highlighting that desert solar projects could affect the Mohave desert squirrel, burrowing owl, pygmy rabbit, and Amargosa toad).

<sup>26</sup> See *supra* note 14 and accompanying text (providing information about NRDC’s renewables map).

<sup>27</sup> See *supra* notes 21-22 and accompanying text (discussing authorizations to take endangered species).

<sup>28</sup> See generally RENEWABLE ENERGY ACTION TEAM, BEST MANAGEMENT PRACTICES & GUIDANCE MANUAL: DESERT RENEWABLE ENERGY PROJECTS (2009), <http://www.energy.ca.gov/2009publications/CEC-700-2009-016/CEC-700-2009-016-SD-REV.PDF> (recommending that “[b]ecause of the potential magnitude of the impacts to desert tortoises from proposed renewable energy projects, FWS and DFG must evaluate translocation efforts on a project-by-project basis in the context of cumulative effects”); ARIZ. GAME & FISH DEP’T, GUIDELINES FOR SOLAR DEVELOPMENT IN ARIZONA (2010), <http://www.azgfd.gov/hgis/documents/FinalSolarGuidelines03122010.pdf> (providing guidelines to protect wildlife habitat, including limiting the spread of non-native, invasive species).

<sup>29</sup> See *supra* note 11 and accompanying text (providing a life-cycle analysis of solar and wind energy).

<sup>30</sup> See generally Elizabeth Thomas, *The Myth of a Single, “Green” Power Resource*, 10 NAT. RES. & ENV’T 65 (1996) (arguing that it is more appropriate to determine whether a certain project is appropriate in a specific location rather than labeling any energy source as green).