

## WIND DEVELOPMENT OF OAXACA, MEXICO'S ISTHMUS OF TEHUANTEPEC: ENERGY EFFICIENT OR HUMAN RIGHTS DEFICIENT?

Laura HAMISTER\*

*ABSTRACT. Mexico's current law and policy regarding development of renewable energy sources is incompatible with the legal rights of its indigenous population. Specifically, a conflict exists in Mexico's Isthmus of Tehuantepec, a region that is both plentiful with wind power and the longtime home of many indigenous persons of the state of Oaxaca. The desire to harness the available wind energy has resulted in negative ramifications for the original inhabitants of the Isthmus, as Mexico's expansive energy policy conflicts with the rights of indigenous landholders in Oaxaca. These interests need not be competing. Utilizing the available wind energy through the construction of wind farms can be accomplished in a manner that accommodates the interests of potential wind developers and indigenous people. Regarding Mexico's energy legislation, more specific provisions regarding enforcement and potential sanctions are necessary to adequately protect the needs of the indigenous people. This would complement Mexico's substantial legislation regarding the rights of indigenous people. Reducing the use of unfair bargaining tactics, assuring that contractual negotiations are conducted in the appropriate language, expanding the indigenous participation in the economic benefits of wind development, and ensuring that the negative environmental ramifications are mitigated are all manners in which wind development in the Isthmus may be achieved successfully.*

*KEY WORDS: Indigenous, wind power, wind, Oaxaca, energy law, environmental law, comparative law, foreign law.*

*RESUMEN. La ley mexicana relativa al desarrollo de fuentes de energía renovable no es compatible con los derechos de su población indígena. Específicamente, existe un conflicto en el Istmo de Tehuantepec, una región que tiene energía eólica abundante y que también es el hogar de muchas personas indígenas en el estado de Oaxaca. La utilización de la energía eólica disponible ha tenido consecuencias negativas para los habitantes originarios del Istmo, porque la política*

---

\* Law Student, University of San Diego School of Law, associate member of the *San Diego Journal of Climate and Energy Law*; B.A. Loyola Marymount University, 2010. All translations in this paper are my own unless otherwise noted.

*energética expansiva de México entra en conflicto con los derechos de los terratenientes indígenas. Estos intereses y derechos no tienen que estar en competencia. Usando la energía eólica que está disponible se puede lograr la construcción del campo eólico de una manera que incorpora los intereses de desarrolladores potenciales de la energía eólica y la gente indígena. Respecto a la legislación mexicana que tiene que ver con energía, necesita disposiciones más específicas sobre su aplicación, y sanciones para proteger adecuadamente las necesidades de las personas indígenas. Estos cambios se ajustarán a la importante legislación mexicana sobre los derechos de la población indígena. Reducir el uso de tácticas de negociación injustas, asegurar que las negociaciones contractuales se llevan a cabo en el idioma correspondiente, amplificar de la participación indígena en los beneficios económicos del desarrollo de la energía eólica, y asegurar que las consecuencias ambientales negativas se atenúen, son todas maneras en que el desarrollo eólico en el Istmo puede lograrse con éxito.*

PALABRAS CLAVE: *Indígena, energía eólica, viento, Oaxaca, derecho de la energía, derecho ambiental, derecho comparado, derecho extranjero.*

#### TABLE OF CONTENTS

I. INTRODUCTION .....	152
II. CURRENT WIND PROJECTS IN MEXICO .....	153
III. MEXICAN ENERGY LAW AND POLICY.....	155
IV. MEXICO'S INDIGENOUS LAWS.....	160
V. ENVIRONMENTAL REPERCUSSIONS OF WIND FARMS.....	170
VI. POSITIVE ASPECTS OF WIND FARM DEVELOPMENT .....	174
VII. SOLUTIONS FOR THE FUTURE AND CONCLUSION.....	175

#### I. INTRODUCTION

Mexico, a country with abundant natural resources, has one particular resource that has yet to be fully harnessed: wind power. Known as *energía eólica* in Spanish, certain regions of Mexico have consistent strong wind currents. One such region is within the state of Oaxaca. Oaxaca is located in the southeast of Mexico, and is bordered by the states of Puebla, Veracruz, Chiapas, and Guerrero.<sup>1</sup> The southern border of Oaxaca has a significant coastline on the Pacific Ocean.<sup>2</sup> According to the U.S. Department of Energy, in a collaborative effort put forth by both Mexican and American Energy Institutes, there

<sup>1</sup> Oaxaca is one of 31 states in the United Mexican States. See *Map of Oaxaca, Mexico*, MAPQUEST, available at <http://www.mapquest.com/maps?country=MX> (last visited: Nov. 27, 2011).

<sup>2</sup> *Id.*

are approximately 6,600 square kilometers of land with “good-to-excellent wind resource potential” in Oaxaca, Mexico.<sup>3</sup> Using what the report deems a “conservative assumption,” this translates into over 3,000 megawatts of electric potential in the region.<sup>4</sup> An additional 5,300 square kilometers of Oaxacan land with “moderate wind resource potential” also exist, bringing the total of potential wind energy up to 44,000 megawatts.<sup>5</sup> To provide a comparison, the Hoover Dam generates approximately 4,000 megawatts, enough to bring power to about 1.3 million people each year.<sup>6</sup> Thus, the wind resource potential in Oaxaca is very high, with overall capacity in Oaxaca reaching more than ten times the energy production capacity of the Hoover Dam. The Mexican Wind Power Association (*Asociación Mexicana de Energía Eólica* or AM-DEE) came to similar conclusions, finding that the amount of wind energy generated in Oaxaca to be high enough to potentially fulfill seven percent of the country’s electric energy needs.<sup>7</sup>

Unfortunately, there also exists a negative side to Oaxaca’s wind potential: the construction of clean-energy windmills has been referred to as a “dirty business” by various news sources and environmental organizations due to the unethical practices of the companies funding the wind development.<sup>8</sup> This note intends to explore the development of various wind projects in Oaxaca, Mexico, the legal implications of the wind projects under Mexican law, as well as the human and environmental implications resulting from the projects.

## II. CURRENT WIND PROJECTS IN MEXICO

Mexico first began to explore Oaxaca’s wind potential on the Isthmus of Tehuantepec, also known as *La Ventosa*,<sup>9</sup> or “the windy region.”<sup>10</sup> The Isthmus is of special interest because it is situated near an unusually warm ocean

---

<sup>3</sup> See National Renewable Energy Laboratory, *Wind Energy Resource Atlas of Oaxaca*, U.S. DEPARTMENT OF ENERGY, 41-42, 45 (2003), [http://pdf.usaid.gov/pdf\\_docs/PNADE741.pdf](http://pdf.usaid.gov/pdf_docs/PNADE741.pdf) (last visited: Oct. 3, 2011).

<sup>4</sup> *Id.*

<sup>5</sup> *Id.*

<sup>6</sup> Hoover Dam: *Frequently Asked Questions and Answers, Hydropower at Hoover Dam*, U.S. DEPARTMENT OF THE INTERIOR BUREAU OF RECLAMATION (last reviewed: February 2009), <http://www.usbr.gov/lc/hooverdam/faqs/powerfaq.html>.

<sup>7</sup> See Ricardo Henestroza Orozco, *Centrales eólicas en el Istmo de Tehuantepec; su impacto ambiental y socioeconómico*, 74 *ELEMENTOS* 39, 41 (2009).

<sup>8</sup> See Chris Hawley, *Clean-Energy Windmills a ‘Dirty Business’ for Farmers in Mexico*, USA TODAY (June 17, 2009); see also Zach Dyer, *Clean Energy Plays Dirty in Oaxaca*, NACLA (March 23, 2009), <https://nacla.org/node/5638>; Ray Stern, *Windmills in Mexico’s Isthmus of Tehuantepec Screw Over Landowning Farmers*, PHOENIX NEW TIMES (June 24, 2009), [http://blogs.phoenixnewtimes.com/valleyfever/2009/06/windmills\\_in\\_mexicos\\_isthmus\\_o.php](http://blogs.phoenixnewtimes.com/valleyfever/2009/06/windmills_in_mexicos_isthmus_o.php).

<sup>9</sup> See Hawley, *supra* note 8.

<sup>10</sup> See Orozco, *supra* note 7, at 40.

current, which, combined with the area's temperature and pressure gradient, results in a strong northern wind.<sup>11</sup> Other attractive factors conducive to developing the region include: the potential of ground-level development, thus avoiding the high costs of installing windmills in the sea or on top of mountains; the high number of hours per year with wind; the wind's direction being substantially fixed with a long season from north to south and a short season from south to north; and a quality of wind considered "excellent" by experts.<sup>12</sup>

The pioneering wind project in the Isthmus is known as Venta I, which began operations in 1994.<sup>13</sup> This facility, comprised of seven wind turbines, is capable of producing approximately 1.575 megawatts.<sup>14</sup> It was largely financed by the Mexican government and received technical support from the World Bank.<sup>15</sup> Two similar projects, Venta II and Venta III, began in 2006 and 2008, respectively.<sup>16</sup> Venta II has a much higher output capacity, generating about 83.3 megawatts of energy.<sup>17</sup> Venta III exceeds both Venta I and Venta II combined, producing 101 megawatts of energy.<sup>18</sup> Subsequently, private industry became interested in developing the region.<sup>19</sup> Multibillion-dollar construction conglomerates CEMEX and ACCIONA developed the monumental EURUS wind farm, which became functional in 2009.<sup>20</sup> The EURUS farm delivers 250 megawatts of energy from 167 wind turbines, making it one of the larger wind energy facilities in the world.<sup>21</sup> Succeeding the Venta and EURUS projects came three new developments in 2010: Eurus II (212.5 megawatts); bii Nee Stipa I (26.35 megawatts); and La Mata-La Ventosa (67.5 megawatts).<sup>22</sup> The development of wind farms does not appear to be slowing

---

<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> See Shalanda H. Baker, *Unmasking Project Finance: Risk Mitigation, Risk Inducement, and an Invitation*, 6 TEXAS JOURNAL OF OIL, GAS, AND ENERGY LAW 273, 281 (2011); see also *Environmental and Social Strategy*, INTER-AMERICAN DEVELOPMENT BANK, [www.iadb.org/document.cfm?id=36289046](http://www.iadb.org/document.cfm?id=36289046) (last visited: Oct. 7, 2011).

<sup>14</sup> See Baker, *supra* note 14 at 281; Ricardo Henestrozo Orozco, *Desarrollo del proyecto eólico en la región del Istmo de Tehuantepec*, 42 INVESTIGACIÓN Y CIENCIA, 18-21 (2009).

<sup>15</sup> See Baker, *supra* note 14; Henestrozo Orozco, *supra* note 14, at 19.

<sup>16</sup> See Baker, *supra* note 15, at 281; see Henestrozo Orozco, *supra* note 14, at 19.

<sup>17</sup> See Henestrozo Orozco, *supra* note 14, at 19.

<sup>18</sup> *Id.*

<sup>19</sup> See *First Phase of 250-MW Eurus Wind Farm*, RENEWABLE ENERGY WORLD (January 30, 2009), available at <http://www.renewableenergyworld.com/rea/news/article/2009/01/first-phase-of-250-mw-eurus-wind-farm-54627>; Mexican President Inaugurates First Phase of EURUS Wind Farm (Jan. 22, 2009), <http://www.reuters.com/article/2009/01/22/idUS231680+22-Jan-2009+BW20090122>.

<sup>20</sup> See *supra* note 21.

<sup>21</sup> *Id.*

<sup>22</sup> See 2010 Wind Energy Status in Mexico- GWEC, Asociación Mexicana de Energía Eólica,

down, as the Mexican Wind Power Association estimates the development of an additional 717.2 megawatts of wind power in 2011.<sup>23</sup> Further, the Mexican government estimates that the entire country is capable of producing about 71 gigawatts of energy.<sup>24</sup>

### III. MEXICAN ENERGY LAW AND POLICY

Under Mexican energy law, the development of wind power is both accepted and encouraged.<sup>25</sup> Mexico is motivated to find clean, renewable energy, as demonstrated by legislative amendments to the country's energy-related statutes over the last few years.<sup>26</sup> Beginning in 2008, the Mexican government began working to find efficient solutions to the country's energy needs.<sup>27</sup> There are multiple legislative acts of interest that were created or amended to reflect this goal, including the Renewable Energy Usage and Energy Transition Financing Act, the Public Electricity Service Act, the Energy Regulatory Commission Act, and the Sustainable Usage of Energy Act.<sup>28</sup> These legislative acts speak to the paramount importance of developing alternative energy sources, however do not provide much commentary regarding the potential human and environmental repercussions associated with such development.<sup>29</sup> Specifically regarding wind turbines, little to no attention is paid to the negative ramifications that may occur as a result of the mass construction of wind farms in Oaxaca and other regions deemed to have wind potential.<sup>30</sup> While there are certainly positive effects of wind development in Oaxaca, such benefits are largely outweighed by the associated problems that come with such development.<sup>31</sup>

---

[http://www.amdec.org/Recursos/Wind\\_Energy\\_Status\\_in\\_Mexico-GWEC](http://www.amdec.org/Recursos/Wind_Energy_Status_in_Mexico-GWEC) (last visited: Oct. 7, 2011).

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *See generally* Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética [L.A.E.R.F.T.E.] [Renewable Energy Usage and Energy Transition Financing Act], *as amended*, Diario Oficial de la Federación [D.O.], 1 de enero de 2011 (Mex.); Ley del Servicio Público de Energía Eléctrica [L.S.P.E.E.] [Public Electricity Service Act], *as amended*, Diario Oficial de la Federación [D.O.], 22 de diciembre de 1975 (Mex.); Ley de la Comisión Reguladora de Energía [L.C.R.E.] [Energy Regulatory Commission Act], *as amended*, Diario Oficial de la Federación [D.O.], 31 de octubre de 1995 (Mex.); Ley para el Aprovechamiento Sustentable de la Energía [L.A.S.E.] [Sustainable Energy Use Act], Diario Oficial de la Federación [D.O.], 28 de noviembre de 2008 (Mex.).

<sup>26</sup> *See supra* note 28.

<sup>27</sup> *Id.*

<sup>28</sup> *Id.*

<sup>29</sup> *Id.*

<sup>30</sup> *Id.*

<sup>31</sup> *See infra* note 33.

Mexico's Renewable Energy Usage and Energy Transition Financing Act (*Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética*) establishes the country's main objectives regarding energy use and consumption. The Act states:

The use of renewable energy sources and clean technologies is of the public interest and will be held in the framework of the national strategy for energy transition by which the Mexican government will promote energy efficiency and sustainability, as well as reduce dependence on hydrocarbons as the country's primary source of energy.<sup>32</sup>

This Act has been described as the “development of a national strategy for the sustainable use of energy.”<sup>33</sup> The Act also includes a provision that allows the Executive Branch, in conjunction with the Secretariat of Energy, to enter into agreements with the Mexican states and the Federal District, with the objective of “promot[ing] measures to support industrial development for renewable energy use.”<sup>34</sup> The adoption of such a law and accompanying policy indicates strong support of energy development within Mexico, bringing such development into both the public and national spheres.

The Renewable Energy Usage and Energy Transition Financing Act does condition the government's approval of alternative energy sources to a certain degree. The Act limits itself, stating: “the use of [renewable energy sources] for electricity production [...] will be subject to the provisions of applicable law.”<sup>35</sup> Nevertheless, the Act fails to describe in detail what the “ap-

---

<sup>32</sup> “El aprovechamiento de las fuentes de energía renovable y el uso de tecnologías limpias es de utilidad pública y se realizará en el marco de la estrategia nacional para la transición energética mediante la cual el Estado mexicano promoverá la eficiencia y sustentabilidad energética, así como la reducción de la dependencia de los hidrocarburos como fuente primaria de energía.” *Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética* [L.A.E.R.F.T.E.] [Renewable Energy Usage and Energy Transition Financing Act], Article 2, *as amended*, Diario Oficial de la Federación [D.O.], 1 de enero de 2011 (Mex.).

<sup>33</sup> 2010 Wind Energy Status in Mexico- GWEC, *Asociación Mexicana de Energía Eólica*, [http://www.amdec.org/Recursos/Wind\\_Energy\\_Status\\_in\\_Mexico-GWEC](http://www.amdec.org/Recursos/Wind_Energy_Status_in_Mexico-GWEC) (last visited: Oct. 7, 2011).

<sup>34</sup> “II. Promuevan acciones de apoyo al desarrollo industrial para el aprovechamiento de las energías renovables;” *Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética* [L.A.E.R.F.T.E.] [Renewable Energy Usage and Energy Transition Financing Act], Article 3, *as amended*, Diario Oficial de la Federación [D.O.], 28 de noviembre 2008 (Mex.).

<sup>35</sup> “El aprovechamiento de [...] el viento [...] para la producción de energía eléctrica, se sujetará y llevará a cabo de conformidad con las disposiciones jurídicas aplicables en la materia.” *Ley para el Aprovechamiento de Energías Renovables y el Financiamiento de la Transición Energética* [L.A.E.R.F.T.E.] [Renewable Energy Usage and Energy Transition Financing Act], Article 4, *as amended*, Diario Oficial de la Federación [D.O.], 28 de noviembre 2008 (Mex.).

plicable law” that would restrain the development of varying power developments might be. Potential “applicable law” could be the Commission for the Development of the Indigenous People Act (*Ley de la Comisión Nacional para el Desarrollo de los Pueblos Indígenas*), which would bring the rights of Oaxaca’s indigenous people to the forefront of any discussion involving use of their land. While this section of the Act could be interpreted as a way to limit the “national strategy” from harming other important sectors of the country, such as its human population and environment, its power to do so remains uncertain due to the lack of detail provided.

The Renewable Energy Usage and Energy Transition Financing Act is the only energy-related legislation that directly addresses the rural populations living where the new energy projects are developed. Directly addressing projects with a capacity greater than 2.5 megawatts,<sup>36</sup> these projects are expected to: “Ensure participation of local and regional communities through meetings and public consultations convened by the municipal, *ejido*, or communal authorities [...] to agree on the participation of social development projects in the community.”<sup>37</sup> If the land used for new energy projects is not purchased by the energy developers, those in charge of the project are expected to be contractually bound to pay rent to the landowners.<sup>38</sup> Finally, the Act states: “To promote social development in the community where renewable energy generation projects take place, the projects should be run according to the best international practice and should meet the applicable regulations relating to sustainable rural development, environmental protection, and land rights.”<sup>39</sup> This provision of the law is certainly positive for the indigenous people, as it provides protection for the members of the population that could easily be overpowered by big industry moving into regions of Mexico based upon its energy appeal. However, it is unclear how the provision will be enforced. In fact, there is already concern for the manner in which landowners are being treated due to the use of Oaxacan land for wind energy, as there have been reports of inadequate compensation and unfair bargaining tactics.<sup>40</sup>

---

<sup>36</sup> *Id.* at Article 21.

<sup>37</sup> *Id.*

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

<sup>39</sup> “Promover el desarrollo social en la comunidad, en la que se ejecuten los proyectos de generación con energías renovables, conforme a las mejores prácticas internacionales y atender a la normatividad aplicable en materia de desarrollo rural sustentable, protección del medio ambiente y derechos agrarios.” *Id.*

<sup>40</sup> Betina Cruz Velásquez, *Free Trade and Climate Change Resistance: Voices from the South*, interview by Cecilia Olivet and Mary-Lou Malig (Dec. 2009), <http://www.tni.org/interview/free-trade-and-climate-change-resistance-voices-south-3>; See also Chris Hawley, *supra* note 8. Ms. Cruz Velásquez was recently arrested, with the cause of her arrest believed to be her participation in activism. Charges refer to a protest in April 2011 at a building controlled by CFE (*Comisión Federal de Electricidad*). See also Eric Vance, *A Case of Big Wind Bullying in Mexico?* THE CHRISTIAN SCIENCE MONITOR (February 28, 2012), available at <http://www.csmonitor.com/World/Americas/Latin-America-Monitor/2012/0228/A-case-of-Big-Wind-bullying-in-Mexico>.



In addition to regulating the development and proliferation of energy to the public, to promote the development of renewable energy sources, the Public Electricity Service Act (*Ley del Servicio Público de Energía Eléctrica*), also permits the sale of electrical energy. The Act provides, in relevant part: “The sale of electricity is governed by the rates approved by the Secretariat of Finance and Public Credit.”<sup>41</sup> Originally, this clause referred to the sale of energy by the government, as private electricity sales are not allowed under Mexican law.<sup>42</sup> However, the 1992 amendment to the Act, permitting *autoabastecimiento* or the self-generation of electricity, allowed the disbursement of electricity in five specified situations.<sup>43</sup> The Mexican government retains control of energy produced in excess of 30 megawatts, but this amendment opened the door to greater participation by private parties in energy production. Although the development of cleaner energy practices is undoubtedly positive, the Mexican legislature again fails to address exactly how these new projects will be implemented, especially concerning the protection of the inhabitants and environment of the windy regions. In fact, the Act has an entire section labeled “Sanctions,” yet these sanctions only address the technicalities of energy production.<sup>44</sup> More of a focus is required to protect the envi-

---

<sup>41</sup> “La venta de energía eléctrica se regirá por las tarifas que apruebe la Secretaría de Hacienda y Crédito Público.” *Ley del Servicio Público de Energía Eléctrica* [L.S.P.E.E.] [Public Electricity Service Act], Article 30, *as amended*, Diario Oficial de la Federación [D.O.], 22 de diciembre de 1975 (Mex.).

<sup>42</sup> See Baker, *supra* note 13, at 61.

<sup>43</sup> See *Ley del Servicio Público de Energía Eléctrica* [L.S.P.E.E.] [Public Electricity Service Act], Article 35, *as amended*, Diario Oficial de la Federación [D.O.], 22 de diciembre de 1975 (Mex.). Energy may be disbursed in the following situations: where the electrical energy is produced for the consumer’s own use, where the energy is cogenerated with a secondary type of energy (*e.g.* steam), where the energy is independently produced and sold to the Federal Electricity Commission, where the energy project has a low capacity (no greater than 30 megawatts), and finally where the electrical energy is intended for importation or exportation.

<sup>44</sup> The Act imposes: “an administrative penalty of a fine of up to three times the amount of electricity consumed from the date of the offense, in the cases referred to in Sections I to IV. In the case of the offenses described in Sections V and VI, the fine is one hundred times the daily minimum wage in effect for the Federal District per KW capacity of the plant’s self-supply, cogeneration, independent production or small-scale production per KW sold or consumed. In the case of Section VII the fine shall be fifty to one hundred times the amount of the minimum wage. The different cases are as follows: I. Whoever, without authorization, uses the lines or conductors of electricity belonging to the Federal Electricity Commission or another particular line fed by these lines; II. The user that consumes electricity through facilities that alter or impede the normal operation of the instruments of control measures or the supply of electricity; III. Those who consume electricity without having negotiated contracts; IV. A person who uses electricity in any form or quantity that is not authorized by the negotiated contract; V. The person who sells, resells, or for any other legal act, disposes of capacity or power, except as expressly permitted by this Act; VI. Who establishes self-sufficient plants, cogeneration, independent production or small scale production, or who exports or imports electrical energy without the permits referred to in Article 36 of this Act, and VII.



ronment of areas intended for energy development, as interaction between energy developers and the land's inhabitants, namely indigenous people and wildlife, will undoubtedly occur.

The possibility of energy exportation under the Public Electricity Service Act merits special attention. Mexico's Foreign Investment Act (*Ley de Inversión Extranjera*) excludes certain parts of industry from foreign investment —one of which is electricity.<sup>45</sup> Thus, it also appears as though there is a conflict between the Public Service Electricity Act and the Foreign Investment Act, as the former allows exportation, whereas the later reserves electricity-based transactions to the State. It is entirely possible that exportation is permissible under the Foreign Investment Act, however to what degree remains uncertain based upon the law as it exists currently. Regulatory measures are required to further clarify the intent of this law. If foreign investment is allowed, the potential for serious harm to the native population in the windy regions of Mexico becomes even more serious, as Mexico's high level of wind energy is likely very attractive to foreign investors. Currently, foreign companies in Mexico are only producing energy for their own use. However, some United States companies have already expressed interest in importing the energy for use within the States.<sup>46</sup> It would be unfortunate for Mexico's potential interest in foreign investment would supersede the rights of those already living in the areas of interest.

The final relevant Act, the Energy Regulatory Commission Act (*Ley de la Comisión Reguladora de Energía*), establishes a governing body for energy generation and usage within Mexico. This legislation gives the Commission the responsibility of overseeing energy production, sale, acquisition, and distribution.<sup>47</sup> It not only confers upon the Commission a list of detailed objectives, with the majority related to the aforementioned responsibilities, but also includes a few references to the health and safety of the regions where energy is being produced. The Act allows the Commission to “request the application of security measures when there is news of an event that may endanger the public health and safety [and] order verification visits [...] to supervise and monitor, within the Commission's competence, compliance with legal provisions applicable to the regulated activities.”<sup>48</sup> Further, the Commission is also allowed to “impose administrative sanctions” for those in violation of the

---

Whoever commits any other violation of the provisions of this Act or the regulations.” *Ley del Servicio Público de Energía Eléctrica* [L.S.P.E.E.] [Public Electricity Service Act], Article 40, *as amended*, Diario Oficial de la Federación [D.O.], 22 de diciembre de 1975 (Mex.).

<sup>45</sup> *Ley de Inversión Extranjera* [L.I.E.X.] [Foreign Investment Act], Article 5, *as amended*, Diario Oficial de la Federación [D.O.], 27 de diciembre de 1993 (Mex.).

<sup>46</sup> See Hawley, *supra* note 8.

<sup>47</sup> *Ley de la Comisión Reguladora de Energía* [L.C.R.E.] [Energy Regulatory Commission Act], Article 2, *as amended*, Diario Oficial de la Federación [D.O.], 31 de octubre de 1995 (Mex.).

<sup>48</sup> *Id.*

aforementioned “legal provisions.”<sup>49</sup> However, once again, the reader is confronted with the Act lacking enough specificity as it remains unclear what “legal provisions” are applicable under this Act. Thus, in pursuance of Mexico’s new clean energy agenda, it would be far too easy for the environmental and human repercussions to fall through the cracks of the law.

#### IV. MEXICO’S INDIGENOUS LAWS

In a stark contrast to the ambiguity of Mexico’s laws with respect to the human effect of environmental development are the country’s laws regarding its extensive indigenous population. The move toward including indigenous rights in the country’s laws started with the Indigenous and Tribal Peoples Convention of 1989, referred to as the “only binding international instrument dealing with indigenous peoples’ rights” to which Mexico was a party.<sup>50</sup> Then, beginning in 1992, Mexico made a marked shift towards the inclusion of its vast indigenous population in the country’s laws. Under President Carlos Salinas, Article Four (now Article Two) of the Mexican Constitution was amended, newly stating: “Mexico is a multicultural nation based originally upon its indigenous peoples.”<sup>51</sup> As the constitutions of the Mexican states largely follow the form and substance of the federal constitution,<sup>52</sup> the idea of multiculturalism is echoed by the constitution of Oaxaca, which similarly finds that its State is composed of “plural” ethnicities.<sup>53</sup> The amendment to the Federal Constitution’s Article Four further stated: “The law will protect and promote the development of [indigenous] languages, cultures, practices, customs, resources and specific forms of social organization [*sic*], and shall guarantee its members effective access to state jurisdiction.”<sup>54</sup> This was the

---

<sup>49</sup> *Id.*

<sup>50</sup> Rachel Sieder, *The judiciary and indigenous rights in Guatemala*, 5 INT’L J. CONST. L. 211, 214 (2007).

<sup>51</sup> “La Nación tiene una composición pluricultural sustentada originalmente en sus pueblos indígenas.” CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 4, as amended in 1992 (Mex.); see also Guillermo de la Peña, *A New Mexican Nationalism? Indigenous Rights, Constitutional Reform and the Conflicting Meanings of Multiculturalism*, 12 NATIONS AND NATIONALISM 279, 287 (2006).

<sup>52</sup> See JORGE A. VARGAS, *MEXICAN LAW FOR THE AMERICAN LAWYER* 19 (2009).

<sup>53</sup> “El Estado de Oaxaca tiene una composición étnica plural, sustentada en la presencia y diversidad de los pueblos y comunidades que lo integran. El derecho a la libre determinación de los pueblos y comunidades indígenas se expresa como autonomía, en tanto partes integrantes del Estado de Oaxaca, en el marco del orden jurídico vigente; por tanto dichos pueblos y comunidades tienen personalidad jurídica de derecho público y gozan de derechos sociales. CONSTITUCIÓN POLÍTICA DEL ESTADO LIBRE Y SOBERANO DE OAXACA, Apr. 4, 1922, Article 16 (Mex.).

<sup>54</sup> CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 4, as amended in 1992 (Mex.); see also Guillermo de la Peña, *supra* note 51. See also *supra* note 50

first time that Mexico referred to itself as “multicultural” and committed to preserving the resources of the indigenous.<sup>55</sup> The inclusion of these rights in the constitution initially created some controversy, with different indigenous rights groups being concerned with the lack of specificity within the amendment.<sup>56</sup> Further, other changes to Mexico’s constitution at the time, specifically the reform of the *ejido* system in Article 27, were highly criticized as many indigenous groups—notably those in Chiapas—were forced off their land.<sup>57</sup> However, the overall changes to the Constitution still demonstrated a shift in policy towards the support of the indigenous people in Mexico’s laws.<sup>58</sup>

Mexico’s focus upon indigenous rights continued with President Vicente Fox’s election in 2001.<sup>59</sup> Additional new amendments to the constitution referenced the importance of “indigenous identity” and established limited indigenous autonomy.<sup>60</sup> The amendments also established governmental responsibility for indigenous peoples’ equality and—to a certain extent—opportunity, stating:

The Federation, States, and Municipalities, to promote equal opportunities for indigenous people and to eliminate any discriminatory practice, shall establish institutions and determine policies to ensure the observance of the rights of indigenous people and the integral development of their people and communities, which shall be designed and operated in conjunction with their cooperation.<sup>61</sup>

Additionally, an especially relevant provision of the second Article of the constitution, largely dedicated to preserving the rights and autonomy of in-

---

regarding similarities between the federal and state constitutions in Mexico. Here, the constitution of Oaxaca nearly mirrors the language in the federal constitution regarding the rights of indigenous people.

<sup>55</sup> See Guillermo de la Peña, *supra* note 51, at 287-288.

<sup>56</sup> JORGE A. VARGAS, MEXICAN LEGAL DICTIONARY 700 (2009); see Guillermo de la Peña, *supra* note 51, at 288.

<sup>57</sup> Kimberly Olson, *Will Fox Change Chiapas? Not Unless Trade Partners Understand the Real Issues*, 10 MINN. J. GLOBAL TRADE 459, 463-64 (2001). Justifications for the amendment include: (1) communal farms could not produce enough food for the country, requiring imports to satisfy Mexico’s needs; (2) a change was needed to “encourage agricultural growth; and (3) the changes were made in preparation for NAFTA, with land privatization allowing corporations to buy land in the resource-filled area. *Id.*

<sup>58</sup> See Guillermo de la Peña, *supra* note 51, at 288.

<sup>59</sup> *Id.*

<sup>60</sup> CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 2 (Mex.).

<sup>61</sup> “La Federación, los estados y los municipios, para promover la igualdad de oportunidades de los indígenas y eliminar cualquier práctica discriminatoria, establecerán las instituciones y determinarán las políticas necesarias para garantizar la vigencia de los derechos de los indígenas y el desarrollo integral de sus pueblos y comunidades, las cuales deberán ser diseñadas y operadas conjuntamente con ellos.” CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 2 (Mex.).

indigenous populations, states: “This Constitution recognizes and guarantees the right of the indigenous people to self-determination and, consequently, to autonomy, including: [...] V. To conserve and improve the indigenous peoples’ habitat and preserve the integrity of their land in the terms of this Constitution.”<sup>62</sup> This constitutional amendment states there exists an affirmative obligation to conserve indigenous land, yet the current state of indigenous land in the Isthmus tells another story. That indigenous people are losing their territorial rights as a result of uneducated decision making can in no way be interpreted as a conservationist approach to their land rights.

The intent to preserve indigenous lands is further developed in the section of the Mexican constitution regarding land rights. Article 27, in relevant part, begins by stating: “The law will protect the integrity of indigenous groups’ land.”<sup>63</sup> The Article elaborates upon this statement, explaining: “The law, considering the respect and strength of the community life in the *ejidos* and communities, will protect the land for human settlement and regulate land use, forests, and shared waters and provide the incentive needed to raise the standard of living of its people.”<sup>64</sup> This section of the constitution reinforces the Mexican government’s intent to provide for the indigenous population and desire to protect its landholdings. Here, the language is especially definitive, reflecting the government’s agenda regarding the betterment of indigenous people as well, with the noteworthy addition of “rais[ing the indigenous peoples’] standard of living.”

Including indigenous rights in something as authoritative as Mexico’s constitution demonstrates the country’s commitment to furthering the rights of its indigenous population. Mexico’s constitution is the country’s highest source of law.<sup>65</sup> For this reason, it is unclear why Mexico’s laws regarding environmental development do not address in detail the conflict that is already occurring between the indigenous people and such development.<sup>66</sup> One

---

<sup>62</sup> “Esta Constitución reconoce y garantiza el derecho de los pueblos y las comunidades indígenas a la libre determinación y, en consecuencia, a la autonomía para: ...V. Conservar y mejorar el hábitat y preservar la integridad de sus tierras en los términos establecidos en esta Constitución.” CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 2 (Mex.).

<sup>63</sup> “La ley protegerá la integridad de las tierras de los grupos indígenas. La ley, considerando el respeto y fortalecimiento de la vida comunitaria de los ejidos y comunidades, protegerá la tierra para el asentamiento humano y regulará el aprovechamiento de tierras, bosques y aguas de uso común y la provisión de acciones de fomento necesarias para elevar el nivel de vida de sus pobladores.” CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 27 (Mex.).

<sup>64</sup> *Id.*

<sup>65</sup> *See* Vargas, *supra* note 52.

<sup>66</sup> *See* Vance, *supra* note 40. In La Venta, “according to eyewitnesses, a group of wind farm workers tried to break up the protest and fights broke out. [Land rights activist] Cruz herself was beaten and one of the wind farm employees was shot in the head and killed”; *see also* Mexico: *Indigenous People Attacked, Threatened*, AMNESTY INTERNATIONAL (March 20, 2012), available

possibility is that the constitution's support of preserving indigenous land is somewhat undermined by a further provision within Article 2, regarding the use of technology within indigenous lands. Article 2, section 7 explains that an additional goal of the government is to:

Support productive activities and sustainable development of indigenous communities through actions to reach economic sufficiency, the application of incentives for public and private investments that promote job creation, incorporation of technologies to increase their own productive capacity and to ensure fair access to the supply and marketing systems.<sup>67</sup>

The use of indigenous land for energy production could fall under this section of the Article, as the development of alternative energy certainly qualifies as the "incorporation of technologies to increase their own productive capacity." However, this statement remains subject to the aforementioned provisions regarding conservation of indigenous land and indigenous autonomy, which casts doubt upon the theory that this provision allows the energy developers to have unwanted control over indigenous land.

The constitution of Oaxaca also speaks to both the preservation and use of indigenous land.<sup>68</sup> Article 16 explains: "The State [of Oaxaca], within its competence, recognizes indigenous people and the social right to use and enjoyment of natural resources on their lands and territories, under the terms of the regulatory law as well as budgetary programs that shall dictate measures to ensure the economic, social, and cultural development of indigenous people and communities."<sup>69</sup> This provision comes to the same general conclusion as the federal constitution: the indigenous people should have use of their land, including the resources therein. However, Oaxaca's constitution takes indigenous land usage a step further by indicating that the land is sub-

---

at <http://www.amnesty.org/en/library/asset/AMR41/020/2012/en/f75157e0-1a78-4df1-8a8c-4d5e06fb85aa/amr410202012en.html> (reporting that members of the Coordination of United Peoples Ocotlán Valley, an organization defending the rights of indigenous landowners against mining companies, were shot and/or killed as a result of their protests).

<sup>67</sup> "Apoyar las actividades productivas y el desarrollo sustentable de las comunidades indígenas mediante acciones que permitan alcanzar la suficiencia de sus ingresos económicos, la aplicación de estímulos para las inversiones públicas y privadas que propicien la creación de empleos, la incorporación de tecnologías para incrementar su propia capacidad productiva, así como para asegurar el acceso equitativo a los sistemas de abasto y comercialización." CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 27 (Mex.).

<sup>68</sup> *See infra*.

<sup>69</sup> "El Estado, en el ámbito de su competencia, reconoce a los pueblos y comunidades indígenas el derecho social al uso y disfrute de los recursos naturales de sus tierras y territorios, en los términos de la ley reglamentaria; asimismo, de acuerdo a sus programas presupuestales, dictará medidas tendientes a procurar el desarrollo económico, social y cultural de los pueblos y comunidades indígenas." CONSTITUCIÓN POLÍTICA DEL ESTADO LIBRE Y SOBERANO DE OAXACA, Apr. 4, 1922, Article 16 (Mex.).

ject to the terms of “regulatory law” and “budgetary programs,” which leaves more room for other areas of industry to use the land if there are applicable legislative provisions that allow such an intrusion. This can be directly contrasted with the federal constitution, which phrases a similar section of the law to state that the land will be “protected” as opposed to including that it is subject to other laws and programs in existence.

In addition to the federal constitutional amendments of 1992 and 2001, to add further support to the commitment of Mexico to its indigenous people, Mexico promulgated several individual acts regarding indigenous rights. These acts include the Commission for the Development of the Indigenous People Act (*Ley de la Comisión Nacional para el Desarrollo de los Pueblos Indígenas*) and the Act for Linguistic Rights of the Indigenous People (*Ley General de Derechos Lingüísticos de los Pueblos Indígenas*), both enacted in 2003.<sup>70</sup> Regarding the preservation of indigenous rights, the Commission for the Development of the Indigenous People Act is significant in its designation of certain protective measures for indigenous rights and land. The Act for Linguistic Rights of the Indigenous People is groundbreaking in that it protects the indigenous culture, which was vastly ignored in Mexican legislation until the Act’s enactment. However, the Act for Linguistic Rights is less relevant in terms of a protectionist view of indigenous rights.

The Commission for the Development of the Indigenous People Act establishes a governing body that exists to support and protect the indigenous population.<sup>71</sup> The Commission is expected to govern its actions in accordance with a list of six principles, with the most relevant regarding environmental reform being to:

- I. Observe the multiethnic and multicultural nature of the Nation [...]
- III. Promote the integration and mainstreaming of policies, programs, and activities of the Federal Public Service for the development of people and communities;
- IV. Promote sustainable development for the reasonable use of natural resources in the regions without risking the indigenous heritage of future generations; [...]
- VI. Consult indigenous people and communities when the Federal Executive institutes legal reforms, administrative acts, development programs, or projects that significantly impact their living conditions and environment.<sup>72</sup>

<sup>70</sup> *Leyes Federales Vigentes*, CÁMARA DE DIPUTADOS (Oct. 19, 2011), available at <http://www.diputados.gob.mx/LeyesBiblio/index.htm>.

<sup>71</sup> *Ley de la Comisión Nacional para el Desarrollo de los Pueblos Indígenas* [L.C.N.D.P.I.] [Commission for the Development of the Indigenous People Act], as amended, Articles 1-2, *Diario Oficial de la Federación* [D.O.], 31 de mayo de 2002 (Mex.).

<sup>72</sup> La Comisión registrá sus acciones por los siguientes principios:

“I. Observar el carácter multiétnico y pluricultural de la Nación; II. Promover la no discriminación o exclusión social y la construcción de una sociedad incluyente, plural, tolerante y respetuosa de la diferencia y el diálogo intercultural; III. Impulsar la integralidad y transversalidad de las políticas, programas y acciones de la Administración Pública Federal para el desarrollo de los pueblos y comunidades indígenas; IV. Fomentar el desarrollo sustentable para

This part of Mexico's environmental legislation is especially troubling due to its contradictory nature. While the Commission exists to protect the "multiethnic and multicultural nature of the Nation," it also gives some leeway for the use of indigenous lands for the country's energy development. That is, although the Commission is expected to work for the "development of [indigenous] people and communities," it also is granted permission to "promote sustainable development for the reasonable use of natural resources in the [indigenous] regions." While the Act specifies that these advances should not "risk [...] the indigenous heritage" of the region, as previously mentioned, there are no safeguards in place to prevent Mexico's environmentally-focused policy from superseding the indigenous population's rights. If anything, this part of the Act further solidifies Mexico's commitment to renewable energy, and establishes that indigenous rights come secondary to such an advance.

It is crucial to speak to the importance of the *ejido* in indigenous culture and development.<sup>73</sup> The *ejido* system of land ownership began in 1917, following the Mexican Revolution, with the goal of returning land controlled by the wealthy elite to the people.<sup>74</sup> Under the *ejido* system, land was redistributed to the indigenous and poor via transfers from the federal government to communal groups under Article 27 of the constitution.<sup>75</sup> The land was then used by both of these groups, and was generally inalienable.<sup>76</sup> The *ejido* land became transferable in 1992 following reforms to the Mexican constitution and the Agrarian Act (*Ley Agraria*), however such transfer still remains limited.<sup>77</sup> For Mexican nationals, the process is reasonably simple: Mexican nationals

---

el uso racional de los recursos naturales de las regiones indígenas sin arriesgar el patrimonio de las generaciones futuras; V. Incluir el enfoque de género en las políticas, programas y acciones de la Administración Pública Federal para la promoción de la participación, respeto, equidad y oportunidades plenas para las mujeres indígenas, y VI. Consultar a pueblos y comunidades indígenas cada vez que el Ejecutivo Federal promueva reformas jurídicas y actos administrativos, programas de desarrollo o proyectos que impacten significativamente sus condiciones de vida y su entorno." Ley de la Comisión Nacional para el Desarrollo de los Pueblos Indígenas [L.C.N.D.P.I.] [Commission for the Development of the Indigenous People Act], *as amended*, Article 3, Diario Oficial de la Federación [D.O.], 31 de mayo de 2002 (Mex.).

<sup>73</sup> "En caso de que no se pusieran de acuerdo, el Tribunal Agrario proveerá la venta de dichos derechos ejidales en subasta pública y repartirá el producto, por partes iguales, entre las personas con derecho a heredar." Ley Agraria [L.A.G.] [Agrarian Act], *as amended*, Article 18, Diario Oficial de la Federación [D.O.], 26 de febrero de 1992 (Mex.).

<sup>74</sup> Carmen G. González, *An Environmental Justice Critique of Comparative Advantage: Indigenous Peoples, Trade Policy, and the Mexican Neoliberal Economic Reforms*, 32 U. PA. J. INT'L ECON. L. 723, 733 (2011).

<sup>75</sup> *Id.* See also *supra* note 60.

<sup>76</sup> *Id.*

<sup>77</sup> See Ann Varley, *Modest Expectations: Gender and Property Rights in Urban Mexico*, 44 LAW & SOC'Y REV. 67, 71 (2010); See also Carmen G. González, *An Environmental Justice Critique of Comparative Advantage: Indigenous Peoples, Trade Policy, and the Mexican Neoliberal Economic Reforms*, 32 U. PA. J. INT'L ECON. L. 723, 735 (2011).



may buy *ejido* land from the *ejidatarios* so long as the land has been privatized, which is permitted under Article 27. Only approximately ten percent of *ejido* owners have chosen to do so, however this remains a viable option for both Mexicans and *ejido* owners.<sup>78</sup> Pursuant to the reforms, under Article 27 of the constitution, foreigners can only acquire *ejido* land where it has been properly privatized, or the owner risks a former *ejido* member staking a claim to the title.<sup>79</sup>

The reforms to Article 27 have been criticized as a means utilized by the Mexican government to allow United States and Canadian approval of the North American Free Trade Agreement (*Tratado de Libre Comercio*); by permitting privatization of land, foreign entities would gain access to Mexico's natural resources and be more inclined to invest.<sup>80</sup> Possible justifications for the loss of indigenous land rights were offered: the inability of small farms to produce enough food to meet Mexico's needs, the need for change to allow Mexico to improve its agricultural sector, as well as the importance of corporation being allowed property rights for investment purposes.<sup>81</sup> However, these justifications are not enough to compensate for the loss faced by the indigenous populations who depend on the land for their sustenance and suffered as a result of losing the use of their land.<sup>82</sup>

Thus, the current law that is in place to protect the indigenous communities of Mexico may appear powerful but in reality poses little obstacle to those who require its protection. A likely result of the law's inability to protect the indigenous population is the severe conflict already existing between the indigenous people and the alternative energy developers in Oaxaca, namely the groups who are financing windmill construction in the Isthmus of Tehuantepec. There have been protests regarding windmill developments, where as many as "several hundred protestors" blocked the roads leading to the areas where proposed construction was to occur, some holding signs saying "no to the project."<sup>83</sup> According to the North American Congress on Latin America (NACLA), a nonprofit organization that reports on Latin America's relationship with the United States, the Mexican government used unethical means

---

<sup>78</sup> Oliver de Schutter, *The Green Rush: The Global Race for Farmland and the Rights of Farmland Users*, 52 HARV. L. REV. 503, n. 113 (2011).

<sup>79</sup> CONSTITUCIÓN POLÍTICA DE LOS ESTADOS UNIDOS MEXICANOS, Feb. 5, 1917, Article 27 (Mex.). For more on the changes to the Mexican Constitution regarding land rights, see generally María Teresa Vázquez Castillo, LAND PRIVATIZATION IN MEXICO: URBANIZATION, FORMATION OF REGIONS, AND GLOBALIZATION IN EJIDOS (2004); Wayne A. Cornelius & David Myhre eds., THE TRANSFORMATION OF RURAL MEXICO (1998); Richard Snyder & Gabriel Torres eds., THE FUTURE ROLE OF THE EJIDO IN RURAL MEXICO (1998).

<sup>80</sup> See Olson, *supra* note 60.

<sup>81</sup> *Id.*

<sup>82</sup> *Id.* at 464-465.

<sup>83</sup> Mark Stevenson, *Mexico Fires Up \$500 million wind farm*, USA TODAY (Jan. 2, 2009), available at [http://www.usatoday.com/money/industries/energy/2009-01-22-laventosa\\_N.htm](http://www.usatoday.com/money/industries/energy/2009-01-22-laventosa_N.htm).

to allow developers access to the wind ridden lands in the domain of the indigenous population.<sup>84</sup> In an interview with the Tepayac Center for Human Rights in Oaxaca, director Javier Balderas commented that when landowners contracted with representatives from EURUS regarding leases of their farmlands, the representatives stated that they were only interested in “the study of winds on their lands.”<sup>85</sup> There was allegedly no mention of wind turbine construction in the region. Further, Balderas explained that, due to the language barrier between the landowners and the representatives, there were further miscommunications that resulted in an uninformed transfer of land.<sup>86</sup>

Although energy developers generally comply with provisions of the Energy Acts requiring rental payments, this rent fails to provide fair compensation for land’s use with rents reported to be as low as \$50 to \$60 in total.<sup>87</sup> In comparison, a single cow produces about \$90 worth of milk each month;<sup>88</sup> being unable to use a large parcel of land for livestock, therefore, would substantially decrease profits and the low levels of rent do not properly offset this loss. A land rights activist from Oaxaca substantiated this suspicion, stating, “The indigenous landowners receive 150 pesos<sup>89</sup> per hectare per year. They also receive a one-time payment of 1,000 pesos<sup>90</sup> if they sign the contract.”<sup>91</sup> While the use of the land for windmill construction certainly reflects Mexico’s Energy policy, the rights intended to be asserted through the constitution and the Acts enacted for the protection of indigenous people are entirely disregarded here. This likely stems from the lack of enforcement provisions included in the legislation, and requires reform for the policies to be vindicated.

In addition to paying laughable amounts of rent, the companies and government entities using land for wind turbines are in theoretical violation of Mexico’s Agrarian Act (*Ley Agraria*).<sup>92</sup> According to the aforementioned Oaxacan activist, “the compan[ies that lease land in the Isthmus have] no restric-

---

<sup>84</sup> See Dyer, *supra* note 8.

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

<sup>86</sup> *Id.*

<sup>87</sup> *Id.* The average monthly rent for land use is significantly higher elsewhere in the world. Although it is difficult to draw an exact comparison, in the United States, land leased for wind turbines brought in between \$8000 and \$18000 annually for landowners. See Anne C. Mulhern, *Wind is the new cash crop in rural Wash. Town*, E&E (Oct. 10, 2010), <http://www.eenews.net/public/Greenwire/2010/10/18/1>. See also, *supra* note 15, at 286 (“Amounts paid to other farmers [in Oaxaca] are said to be ten to twenty times less than amounts offered to American farmers for similar uses”). Diego Cevallos, *Farmers and Scientists See Risks in Wind Energy*, TIERRAMERICA, Feb. 26, 2011, <http://www.tierramerica.info/nota.php?lang=eng&idnews=85> (“The landowners were fooled with fixed arrangements, ridiculous payments for rent (for installing the turbines) and impediments to farming.”).

<sup>88</sup> See Hawley, *supra* note 8.

<sup>89</sup> Approximately 11 dollars per 2011 conversion rates.

<sup>90</sup> Approximately 68 dollars per 2011 conversion rates.

<sup>91</sup> See Cruz Velásquez, *supra* note 40.

<sup>92</sup> See *infra* note 97.

tions in the use of the land. The contracts are for 30 years but they can be automatically renewed for another 30 years and only the company can terminate the contract.”<sup>93</sup> While the Agrarian Act does not regulate renting the land, it does set out specific parameters for the sale of *ejido* land, including that all of those who are part of the particular *ejido* up for sale must be in agreement in order for the sale to be legal.<sup>94</sup> Pertinent parts of the Article state: “Where plots [of *ejido* land] are sold, the family of the seller who have worked these fields for more than one year, the *ejidatarios*, those domiciled on the *ejido* and the *ejidal* population, in that order, shall have the right to notification [...] If notification is not made, the sale may be canceled.”<sup>95</sup> If *ejido* land is rented for a term of 30 years, with the provision of an additional 30-year extension, this is such a deprivation of use of the land that it essentially equates to the actual sale of the land. Thus, it is entirely possible that this type of contract could be illegal under Mexican law if the intent behind the laws is taken into consideration.<sup>96</sup>

The negative effect of the lack of enforcement provisions in legislation that exists to protect the indigenous extends further, as illustrated by the fact that the agreements, written in Spanish, were given to landowners whose only fluency lies in indigenous languages.<sup>97</sup> This purported practice is in direct conflict with the Act for Linguistic Rights of the Indigenous People, which states, “It is the right of all Mexicans to communicate in the language he or she speaks without restrictions whether the communication is public, private, oral, or in writing, in all social, economic, political, cultural, religious and any applicable contexts.”<sup>98</sup> Presenting a contract in Castilian Spanish to landown-

<sup>93</sup> See Cruz Velásquez *supra* note 40.

<sup>94</sup> “En caso de la primera enajenación [alienación] de parcelas sobre las que se hubiere adoptado el dominio pleno, los familiares del enajenante, las personas que hayan trabajado dichas parcelas por más de un año, los *ejidatarios*, los *avecindados* y el núcleo de población *ejidal*, en ese orden, gozarán del derecho del tanto, el cual deberán ejercer dentro de un término de treinta días naturales contados a partir de la notificación, a cuyo vencimiento caducará tal derecho. Si no se hiciera la notificación, la venta podrá ser anulada.” Ley Agraria [L.A.G.] [Agrarian Act], *as amended*, Article 84, Diario Oficial de la Federación [D.O.], 26 de febrero de 1992 (Mex.).

<sup>95</sup> Ley Agraria [L.A.G.] [Agrarian Act], *as amended*, Article 84, Diario Oficial de la Federación [D.O.], 26 de febrero de 1992 (Mex.).

<sup>96</sup> See also Baker, *supra* note 13, at n. 73.

<sup>97</sup> *Id.* The disputed contract referenced by those being interviewed was negotiated between a large company and a Zapoteco-speaking landowner. *Zapoteco* is one of the indigenous language groups in Mexico. See Cruz Velásquez, *supra* note 40.

<sup>98</sup> “Es derecho de todo mexicano comunicarse en la lengua de la que sea hablante, sin restricciones en el ámbito público o privado, en forma oral o escrita, en todas sus actividades sociales, económicas, políticas, culturales, religiosas y cualesquiera otras.” Ley General de Derechos Lingüísticos de los Pueblos Indígenas [L.G.D.L.P.I.] [Act for Linguistic Rights of the Indigenous People], *as amended*, Article 9, Diario Oficial de la Federación [D.O.], 13 de marzo de 2003 (Mex.).

ers who primarily speak indigenous languages is in violation of this provision, as a contract qualifies as a communication “in writing” for an “economic” purpose; to comply, the contract should have been translated into the applicable indigenous language for the landowners. This practice also conflicts with the “right to notification” established by the Agrarian Act.<sup>99</sup> However, as has been previously noted, the constitutional and other legislative acts in favor of the indigenous populations have no real means of enforcement. Thus, while the legislation in favor of the indigenous represents positive ideals in theory, such legislation is severely deficient in practice.

It is imperative that contracts involving leases to companies intending to develop land for wind farm development are constructed in a satisfactory manner. In a 2009 guide developed by Farm Management Specialists at North Dakota State University, the important areas of negotiations are highlighted, including: duration, renewable period, tower removal responsibilities and specifications, placement of access roads, construction period, responsibility for fences and gates, type of payment and compensation packages, transparency of wind company financial records, inflation and escalator clauses, as well as the various taxes and liability issues that may or may not apply.<sup>100</sup> While information regarding the contracts has not been highly disseminated, with the majority of public knowledge of the contracts’ content being based upon news reports, it appears highly unlikely that all of these concerns were fairly bargained for in the execution of contracts between the landowners and the companies interested in wind development, as indicated by agreements based upon unfair levels of rent and negotiations conducted in unfamiliar languages.

Mexico’s Secretariat of the Environment and Natural Resources (*Secretaría de Medio Ambiente y Recursos Naturales*, hereinafter *SEMARNAT*) recently addressed the conflict between the indigenous people and the development of wind energy in Oaxaca. The SEMARNAT stated that it “plan[s] to adjust the technical and administrative processes to ensure [...] the incorporation of the local population [in the development of wind power].<sup>101</sup> The changes would occur in the form of an Official Mexican Norm (*Norma Oficial Mexicana*), and would involve “local stakeholders,” including landowners, in constructing the legal framework.<sup>102</sup> Such changes would help ease the tension that has developed between the landowners and the wind developers, as more involvement within the lawmaking process would likely allow the indigenous people to assert their rights more strongly. However, it remains to be seen

<sup>99</sup> Ley Agraria [L.A.G.] [Agrarian Act], as amended, Article 84, Diario Oficial de la Federación [D.O.], 26 de febrero de 1992 (Mex.).

<sup>100</sup> Dwight Aakre & Ron Haugen, *Wind Turbine Lease Considerations for Landowners*, NDSU Extension Services 2-5, 2009.

<sup>101</sup> *Semarnat adecua norma de explotación en energía eólica* (Aug. 26, 2011), available at <http://www.noticiasnet.mx/portal/principal/61006-semarnat-adecua-norma-explotacion-energia-colica>.

<sup>102</sup> *Id.*

whether such changes will actually be instituted, as well as if the changes will achieve their intended purpose.

## V. ENVIRONMENTAL REPERCUSSIONS OF WIND FARMS

The legal incompatibility of Mexico's energy and indigenous policy is not limited to the rights of the country's indigenous people, as other segments of the country's population have suffered from the energy-related advances in Oaxaca. Mexico's Ecological Equilibrium and Environmental Protection Act (*Ley General del Equilibrio Ecológico y la Protección al Ambiente*) addresses the need to protect the environment, yet the windmill construction, designed to be environmentally friendly, may do just the opposite. Environmental impact assessments of the targeted areas intended to be developed as wind farms are needed, because studies from other regions of the world demonstrate the negative environmental impact of windmills. For accuracy's sake studies should be conducted specifically in Mexico to see if the same issues hold true there.

The Ecological Equilibrium and Environmental Protection Act requires: "III. The preservation, restoration, and enhancement of the environment; IV. The preservation and protection of biodiversity and the establishment and administration of protected natural areas."<sup>103</sup> In one area of Oaxaca, the construction includes building new roads, pouring tons of concrete to create towers, and putting gravel into fields to sustain the cranes' weight.<sup>104</sup> This does not comport with the notion that the environment is to be preserved, as required by the Act, because these measures involve serious disruption of the land. The Act also includes measures for sanctions, requiring: "[t]he establishment of control measures to ensure the safety, compliance, and application of this Act [...] as well as the imposition of administrative and criminal penalties that apply."<sup>105</sup> However, it is unclear if this environmental policy is being realized, as there are significant drawbacks associated with windmill construction that are seriously affecting Oaxaca's environment, including harm to birds living

---

<sup>103</sup> The Act provides: "II. Definir los principios de la política ambiental y los instrumentos para su aplicación; III. La preservación, la restauración y el mejoramiento del ambiente; IV. La preservación y protección de la biodiversidad, así como el establecimiento y administración de las áreas naturales protegidas; [...] X. El establecimiento de medidas de control y de seguridad para garantizar el cumplimiento y la aplicación de esta Ley y de las disposiciones que de ella se deriven, así como para la imposición de las sanciones administrativas y penales que correspondan." *Ley General del Equilibrio Ecológico y la Protección al Ambiente* [L.E.E.E.P.] [Ecological Equilibrium and Environmental Protection Act], *as amended*, Article 1, Diario Oficial de la Federación [D.O.], 28 de enero de 1988 (Mex.).

<sup>104</sup> Chris Hawley, *Firms Rush to Stake Claims in Mexico's Isthmus*, ARIZONA BUSINESS & MONEY (June 24, 2009), <http://www.azcentral.com/business/articles/2009/06/24/20090624biz-winpower0624.html>.

<sup>105</sup> See *supra* note 106.

in the area, disruption of the Isthmus' natural ecosystem, and physical harm to people living in the area.<sup>106</sup>

Windmills also seriously affect migratory bird populations. Studies conducted at the site of Venta II, monitored by INECOL from 2007-2008, noted 78 bird carcasses.<sup>107</sup> This statistic is exceedingly conservative —experts suggest that the actual mortality at this single site is perhaps 50 times higher.<sup>108</sup> Furthermore, research from both Europe and the United States also demonstrates that windmills are harmful for birds, especially birds of prey.<sup>109</sup> A study of California's Altamont Pass, which has 6,500 windmills distributed across 190 kilometers of land, demonstrated that the turbines killed hundreds of birds annually.<sup>110</sup> Further, in the entire United States, there are between 10,000 and 40,000 bird fatalities annually that are attributed to windmills.<sup>111</sup> While Mexico's wind farms are substantially smaller, with the largest being home to only 167 turbines, the study still found that "the lower the turbine density, the higher the mortality rates."<sup>112</sup> As such, there may still be conflicts between the birds in Oaxaca and the installed windmills, especially considering that the Isthmus is considered a migratory bird corridor.<sup>113</sup> It is important to add that many more birds are killed by cars than by windmills each year.<sup>114</sup> However, the less wildlife that is harmed by the development of new technologies, the better, as established by the Ecological Equilibrium and Environmental Protection Act.<sup>115</sup>

---

<sup>106</sup> See *infra*.

<sup>107</sup> See GEORGE C. LEDEC ET AL., GREENING THE WIND: ENVIRONMENTAL AND SOCIAL CONSIDERATIONS FOR WIND POWER DEVELOPMENT 103 (2011).

<sup>108</sup> *Id.* Mortality is likely higher as a result of the following factors: "(i) rapid removal of small carcasses by scavenging animals, between the once-weekly searches [conducted by the researchers]; (ii) the inability to search much of the target area due to the type of vegetation and/or not enough searchers; and (iii) the tendency to overlook small, mostly camouflaged carcasses, even in open fields." *Id.* For larger birds, the adjustment need not be as high, because: (a) larger carcasses are generally scavenged on-site; (b) larger carcasses are more visible and more likely to be found during the researcher's search. *Id.*

<sup>109</sup> Victoria Sutton & Nicole Tomich, *Harnessing Wind is Not (By Nature) Environmentally Friendly*, 22 PACE ENV'T'L L. REV 91, 95-96 (2005).

<sup>110</sup> *Id.* at 95.

<sup>111</sup> *Id.* at 96.

<sup>112</sup> *Id.*

<sup>113</sup> Organizations and businesses that intend to develop areas in the Isthmus for wind energy are expected to submit Environmental Reports. One such organization, the Inter-American Development Bank, is partially funding the EURUS wind farm with additional monetary contributions from Acciona of Spain. See Inter-American Development Bank, Mexico Eurus Wind Project (ME-L1068) Environmental and Social Management Report (ESMR) 2 (Nov. 20, 2009), available at <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=2150998>.

<sup>114</sup> See Sutton & Tomich, *supra* note 109.

<sup>115</sup> Ley General del Equilibrio Ecológico y la Protección al Ambiente [L.E.E.E.P.] [Ecological Equilibrium and Environmental Protection Act], as amended, Article 1, Diario Oficial de la Federación [D.O.], 28 de enero de 1988 (Mex.).

The importance of Mexico protecting bird populations is further supported by the fact that Mexico is a party to the Convention for the Protection of Migratory Birds and Game Mammals. The treaty states: “it is right and proper to protect migratory birds, whatever may be their origin, in the United States of America and the United Mexican States, in order that the species may not be exterminated.”<sup>116</sup> Mexico has additional incentive to initiate reforms in its laws that prevent the birds from being harmed, as demonstrated by its responsibilities under both domestic and international laws to which it is a party. It is relevant to further note that windmills similarly affect bats, with a total of 123 bat carcasses found between 2007 and 2008.<sup>117</sup> Recently in Indiana, windmills were shut down at night after a rare bat was killed by their operation.<sup>118</sup> Such efforts to protect the environment are very important to maintain agreement between a country’s environmental law and its energy policy.

Harm to people living in areas where windmills are constructed poses an additional concern. Noise pollution is one issue associated with windmills.<sup>119</sup> Windmills may generate noise that is within hearing range from 4,500 feet upwind and 7,000 feet downwind.<sup>120</sup> Windmills also can impact television and radio transmission.<sup>121</sup> If windmills are constructed in areas with few human residents, these problems have virtually no effect. However, according to a 2010 survey, the Isthmus is home to over 3.8 million residents, so the likelihood of there being no residential conflicts with the windmills is slight.<sup>122</sup>

---

<sup>116</sup> See Convention for the Protection of Migratory Birds and Game Mammals, U.S.-Mex., Article I, Feb. 7, 1936. It is recognized that the treaty’s objective is to prevent the “extermination” of bird species, which is a low standard for both United States and Mexico to meet. However, if birds are, in fact, being harmed by the operation of windmills, the long-term effect of such harm must be examined in light of this treaty. The Isthmus is a migration corridor for many bird species, and experiences millions of birds flying through the region depending on the year. See *supra* note 110.

<sup>117</sup> See *supra* note 110.

<sup>118</sup> See Inter-American Development Bank, Mexico Eurus Wind Project (ME-L1068) Environmental and Social Management Report (ESMR) 2 (Nov. 20, 2009), available at <http://idb-docs.iadb.org/wsdocs/getdocument.aspx?docnum=2150998>; See also Kathy Mellot, *Windmills to Shut at Night Following Demise of Rare Bat*, THE TRIBUNE DEMOCRAT (Oct. 17, 2011), <http://tribune-democrat.com/local/x345569257/Windmills-to-shut-at-night-following-demise-of-rare-bat>. While it is undeniable that the social, economic, and political conditions in Mexico are vastly different to those in Indiana, the concern for wildlife in the areas where windmills are constructed remains a valid concern.

<sup>119</sup> See Organization for Economic Cooperation and Development (OECD), *Environmental Impacts of Renewable Energy* 7 (1988); See also Michael B. Walsh, *A Rising Tide in Renewable Energy: The Future of Tidal In-Stream Energy Conservation* (TISEC), 19 VILL. ENVTL. L.J. 193, 205 (2008).

<sup>120</sup> See Walsh, *supra* note 119 at 206.

<sup>121</sup> *Id.*

<sup>122</sup> *Santo Domingo Tehuantepec, Oaxaca*, MÉXICO EN CIFRAS, INFORMACIÓN NACIONAL, POR ENTIDAD



Research continues to investigate the physiologic responses caused by exposure to windmills, or “Wind Turbine Syndrome, indicating that humans’ brains respond to low frequency sound in a detrimental fashion.”<sup>123</sup> The human noise recipient is unaware of the noise, but the sound waves still send signals to the brain and “the physiologic response of the cochlea to turbine noise is also a trigger for tinnitus and the brain-level reorganization that tinnitus represents.”<sup>124</sup> Crop flooding is another negative side effect of windmills’ presence in rural areas. The large amounts of concrete needed to construct the wind turbines pose the risk of changing watershed levels.<sup>125</sup>

It may be argued that section 1 of the Ecological Equilibrium and Environmental Protection Act permits wind turbine construction, as the turbines qualify as “sustainable use” developments.<sup>126</sup> The fifth provision encourages: “[t]he sustainable use, preservation and, where appropriate, restoration of soil, water and other natural resources, to support the economic benefits and societal activities along with the preservation of ecosystems.”<sup>127</sup> This part of the law supports the required development of the “sustainable use” of “natural resources,” which can be used to justify the wind turbine construction. However, this law also limits the development of natural resources to a certain degree, requiring the reconciliation of environmental development with the “preservation of ecosystems.” Thus, any development is required to guard its environmental effects; this is an especially useful portion of the law, as it directly speaks to environmental protection in relation to renewable energy developments.

According to one of its delegates, the SEMARNAT intends to issue a rule that would “look [...] for companies to establish projects that adhere to international standards and respect the local environment, especially biological diversity, wildlife, flora, and care of the groundwater.”<sup>128</sup> This is especially promising, as such a rule would help resolve some of the major issues that the development of wind power creates. However, it is the opinion of this author that anything issued by the SEMARNAT would have to be very explicitly worded to be effective. The SEMARNAT states that it would prefer

---

FEDERATIVA Y MUNICIPIOS, available at <http://www.inegi.org.mx/sistemas/mexicocifras/default.aspx?c=20>.

<sup>123</sup> Nina Pierpoint, MD, PhD, The First International Symposium on the Global Wind Industry and Adverse Health Effects: Loss of Social Justice?, Keynote Address: Wind Turbine Syndrome & The Brain. Oct. 30, 2010, available at <http://www.epaw.org/documents.php?lang=en&article=n13>.

<sup>124</sup> *Id.*

<sup>125</sup> See also Baker, *supra* note 13, at 287.

<sup>126</sup> Ley General del Equilibrio Ecológico y la Protección al Ambiente [L.E.E.E.P.] [Ecological Equilibrium and Environmental Protection Act], as amended, Article 1, Diario Oficial de la Federación [D.O.], 28 de enero de 1988 (Mex.).

<sup>127</sup> *Id.*

<sup>128</sup> See *supra* note 104.

companies to “adhere to international standards” in terms of respecting the environment, however without specific provisions delineating exactly what this means, enforceability will be at a minimum.

## VI. POSITIVE ASPECTS OF WIND FARM DEVELOPMENT

In contrast to the indigenous and environmental issues that accompany windmill construction in Oaxaca, there are many positive aspects of the development that aid Mexico in both a global and local context. Reducing the country’s dependence upon nonrenewable energy is certainly beneficial, especially considering the serious environmental consequences associated with use of fossil fuels, most notably the acceleration of global warming as a result of using natural gas, coal, and oil.<sup>129</sup> Once a windmill is constructed and becomes functional, it does not rely on any fuel use whatsoever, reducing the predominant dependence on fuel-generated electricity that is common elsewhere in Mexico.<sup>130</sup> Because of this, it may be argued that although there are negative repercussions associated with the windmills, a lesser reliance on fossil fuels supersedes any such conflicts due to the serious threat that global warming poses. Additionally, in general, wind power has a low societal cost. That is, because wind power is harnessed using an existing and renewable resource, it has fewer adverse effects when compared to the use of fossil fuels, which pollute, contaminate, and generate waste when being extracted.<sup>131</sup> The use of wind power also does not require a high level of water use, because it relies upon kinetic energy, not thermal energy. This is an additional positive aspect associated with the use of wind power, as water is in short supply in many areas and needed for other purposes.<sup>132</sup>

The United States is in advantageous location; it is close enough to Mexico to allow for the importation of energy while making it a clear contender for production of windmill-generated electricity. In fact, the United States has already expressed interest in utilizing some of the energy produced by windmills in both Oaxaca and Baja California.<sup>133</sup> In addition to spreading renewable energy throughout the continent, higher environmental cooperation at the international level may come out of Mexico’s windmill development as the countries will potentially be working together to achieve the spread of wind-generated electricity.

Increasing the number of jobs and stimulating the economy are other positive results derived from the windmill construction. Windmills are often

---

<sup>129</sup> Ronald H. Rosenberg, *Diversifying America’s Energy Future: The Future of Renewable Wind Power*, 26 VA. ENVTL. L.J. 505, 506 (2008).

<sup>130</sup> *Id.* at 522.

<sup>131</sup> *Id.* at 523.

<sup>132</sup> *Id.* at 524.

<sup>133</sup> See Stevenson, *supra* note 83.

constructed in either rural or low-income regions, and with the development of a new industry comes the possibility of new employment opportunities for the residents in the area.<sup>134</sup> According to ACCIONA, a Spanish company engaged in a joint endeavor with Mexico's CEMEX to construct a wind farm capable of powering up to 25% of CEMEX's electricity needs, 850 jobs were created by the construction of the wind farm.<sup>135</sup> To provide examples of such jobs, one landowner in Oaxaca stated that he used part of the money that the wind developers gave him to use his land to buy a bus that he uses to take windmill workers to and from the construction sites. Additionally, another landowner used the money from the wind developers to open up an automotive parts store, and another Oaxaca resident was able to get a job as a traffic conductor in the area surrounding the windmill construction site.<sup>136</sup> While there is nothing to substantiate ACCIONA's claims of creating 850 new jobs as a result of windmill construction, the aforementioned examples suggest that at least a finite number of employment opportunities would be created by wind development in Oaxaca. Further, through establishing leases with the landowners, it can be expected that additional income will be generated from having the windmills on primarily agricultural lands, as already experienced by various United States' towns.<sup>137</sup> One scholar even posits that windmill development may have a preservationist effect upon agricultural lands, leaving them undisturbed by prospective developments due to the desire to maintain the windmills' integrity.<sup>138</sup>

## VII. SOLUTIONS FOR THE FUTURE AND CONCLUSION

Considering the importance of renewable energy in today's political and environmental policy, there needs to be a way to reconcile the negative impact the windmills have upon Oaxaca's environment and indigenous population with the Isthmus's incredible potential as an energy source. One such way is to allow the indigenous populations to profit from the wind energy development, allowing wealth to be spread to the indigenous communities via the new wind-based technology. If the aforementioned assertion is assumed equitable, that renewable energy supersedes any potential environmental consequences, then Mexico's indigenous policy can potentially be vindicated through allowing the indigenous populations a share of proceeds derived from wind energy development.

---

<sup>134</sup> See Rosenberg, *supra* note 129, at 525.

<sup>135</sup> See Stevenson, *supra* note 83.

<sup>136</sup> See Hawley, *supra* note 8.

<sup>137</sup> James R. Healey, *Wind Power Generates Income*, USA TODAY (Aug. 15, 2002), available at [www.usatoday.com/money/industries/energy/2002-08-15-wind\\_x.htm](http://www.usatoday.com/money/industries/energy/2002-08-15-wind_x.htm).

<sup>138</sup> See Roseberg, *supra* note 129, at 525-526.

An analogy exists between the Native American's control of the United States' casino gaming industry and the possibility for Mexico's indigenous population to have potential control over the development of wind power on its lands. The Native Americans face great disadvantages, with lower education levels, a high rate of unemployment, and a lower life expectancy among their people.<sup>139</sup> To help aid the Native Americans in developing self-sufficiency, both the judicial and legislative branches acted to help the different Tribes produce a profit through gaming.<sup>140</sup> The Indian Gaming Regulatory Act was groundbreaking in this arena, because it created a "statutory basis for the operation of gaming by Indian tribes as a means of promoting tribal economic development, self-sufficiency, and strong tribal governments."<sup>141</sup>

The outcome of allowing Native Americans to profit from gaming has had both positive and negative effects upon the United States' indigenous population.<sup>142</sup> There are clear social advantages to allowing Native American's to control the gaming industry, as revenue has been used for educational programs as well as nutrition, housing, and healthcare programs that were not federally funded.<sup>143</sup> Some of the proceeds from gaming also have been used for substance abuse rehabilitation and prevention programs.<sup>144</sup> Money earned through gaming also has been invested into other sectors of business to allow more Native American job opportunities.<sup>145</sup> However, there also exist the dangers of exploitation. Assuming non-Native Americans enter the gaming industry and gain control, an increased danger of criminal activity that is commonly associated with gaming could arise, or a lessened sense of sovereignty on account of intrusion by nontribal government with respect to gaming, as well as the possibility of internal divisiveness on the sundry issues that could therein arise.<sup>146</sup>

An additional analogy may be drawn between the current situation in Mexico regarding monetizing wind power on the lands of indigenous people and the American Congress's attempts to create a similar agreement between Native Americans and private industries' interest the Native American's mineral rights. The ninety-seventh United States Congress passed the Indian Mineral Development Act of 1982 (IMDA)<sup>147</sup> to provide Indian tribes with flexibility

---

<sup>139</sup> CATHY H.C. HSU, LEGALIZED CASINO GAMING IN THE UNITED STATES 44-45 (1999).

<sup>140</sup> *Id.* at 48. See also, e.g., *California v. Cabazon Band of Mission Indians*, 480 U.S. 202 (1987), Indian Gaming Regulatory Act of 1988. But see *Red Lake Band v. Swimmer* (1990).

<sup>141</sup> CATHY H.C. HSU, LEGALIZED CASINO GAMING IN THE UNITED STATES 48 (citing Indian Gaming Regulatory Act of 1988, 25 U.S.C. § 2701 et seq.).

<sup>142</sup> *Id.* at 55-60.

<sup>143</sup> *Id.* at 55.

<sup>144</sup> *Id.*

<sup>145</sup> *Id.*

<sup>146</sup> *Id.* at 57-59.

<sup>147</sup> Indian Mineral Development Act of 1982 (IMDA), 25 U.S.C.A. §§ 2101-2108.

in the development and sale of mineral resources.<sup>148</sup> “Foremost among the beneficial effects of IMDA was the opportunity for Indian tribes to enter into joint venture agreements with mineral developers.<sup>149</sup> The contractual relationships permitted by IMDA were designed to meet two objectives: First, to further the policy of self-determination and second, to maximize the financial return tribes can expect for their valuable mineral resources.”<sup>150</sup>

A structure similar to the Native Americans’ mineral and gaming control may be a viable solution to the conflict between Oaxaca’s indigenous people and the wind farm developers. Allowing the indigenous people to derive a profit from the presence of wind power, separate from a lease of the land, would prevent the purported takings of land that are occurring today and help foster participation between the now-competing groups. Such additional revenues are especially important because, similar to the Native Americans, Mexico’s indigenous people are faced with serious disadvantages. The injustices faced by Mexico’s indigenous “are linked to land and territories, natural resources, administration of justice, internal displacement, bilingual education, language, migration and constitutional reforms.”<sup>151</sup> A recent study demonstrated that approximately 75 five percent of Mexico’s indigenous population lives below the poverty line, as opposed to only 50 percent of non-indigenous people in Mexico.<sup>152</sup> In Oaxaca specifically, approximately 56 percent of the population self-identifies as indigenous, thus there is a high concentration of people in this region who could utilize additional financial support.

Just as the Native Americans used proceeds from gaming and mineral development for services to better their community, the same could exist for the indigenous people, using the funds derived from wind energy to combat discrimination and poverty. Additional monetary support would provide for an increased level of autonomy, as well as the establishment of additional resources to improve the indigenous peoples’ strikingly low standard of living. The income from wind energy could be used for basic needs, such as food, healthcare, and education. The new source of income could aid the indigenous in becoming more self sufficient through the establishment of long-term goals such as increasing indigenous employment. Furthermore, if the indig-

---

<sup>148</sup> See S. Rep. No. 97-472, 97th Cong.2d Sess. 2 (1982); see also *Quantum Exploration, Inc. v. Clark*, 780 F.2d 1457, 1458 (Mont. 1986).

<sup>149</sup> *Advancing Indigenous People’s Rights in Mexico*, UNITED NATIONS HUMAN RIGHTS (July 7, 2011), available at <http://www.ohchr.org/EN/NewsEvents/Pages/IndigenousPeoplesRightsInMexico.aspx>.

<sup>150</sup> *Id.*

<sup>151</sup> *Id.*

<sup>152</sup> See Vicente A. García Moreno & Harry Anthony Patrinos, *Indigenous peoples and poverty in Mexico*, THE WORLD BANK (April 2011), available at [http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1289834880964/Mexico\\_brief.pdf](http://siteresources.worldbank.org/EDUCATION/Resources/278200-1099079877269/547664-1289834880964/Mexico_brief.pdf). See also Figure Four, *id.*

enous people were to have ties to the burgeoning wind industry, it is likely that their participation in the political process would increase. It is conceivable that having a significant stake in energy development would require involvement in local government, energy counsels, etc. Such involvement would also help counter discriminatory practices, as the indigenous people would occupy a more prominent place in society. A notable positive difference between the Native American's involvement with the gaming industry and the potential for Mexico's indigenous community to derive a profit from windmills is that it is unlikely there will be the same type of crime associated with wind energy development as exists with gaming.

However, the existence of additional income may not be enough to overcome the years of oppression faced by the indigenous. Similarly, it is difficult to foresee whether or not it would even be possible to include the indigenous people in wind production, as this would require significant collaborative efforts between wind power developers, the indigenous, and the government, which is quite the undertaking. In conclusion, legislative action could be a viable option for Mexico to address the land rights of the indigenous in a way that allows for a mutually beneficial relationship between the indigenous and private parties.

Another option would be the construction of a community wind project. Community wind projects, also referred to as "decentralized energy projects," permit small groups to produce energy and sell it, deriving a profit from the sale.<sup>153</sup> Such projects exist internationally, and have been quite successful.<sup>154</sup> An illustrative example exists in Denmark:

Denmark's story began in the 1980s, with families becoming shareholders in cooperative wind farms. Hundreds of families came together and decided to pool money, create a cooperative, and buy, install and operate a wind turbine. The Danish government made sure that these wind turbines could be connected to the national power grid and that they received a cost-covering payment from the utilities for the generated electricity. As a result, around 200,000 Danish families became shareholders in wind turbines and several former land machinery companies started manufacturing wind turbines. Today many Danish wind companies are world market leaders, with their specific know-how and with an overall turnover of €4.7 billion in 2007 (US\$7 billion).<sup>155</sup>

A similar approach, albeit a bit ambitious, could be very successful in areas of Mexico intending to develop wind power, where the indigenous people hold shares in a wind farm and participate in the wind farm's operations. If the indigenous were to invest in the farms, not only would they have bet-

---

<sup>153</sup> Stefan Gsanger, *Community Power Empowers*, DISCOVERY NEWS (May 26, 2009), available at <http://news.discovery.com/tech/community-wind-power-opinion.html>.

<sup>154</sup> *Id.*

<sup>155</sup> *Id.*

ter bargaining power, they would also have additional sources of income, which may help them escape poverty. One obstacle to this approach would be the federal government's regulation of the sale of electricity.<sup>156</sup> Further, wind power plants are prohibitively expensive to finance.<sup>157</sup> It is unlikely the indigenous people would be able to provide such funds given the high incidence of poverty they experience.<sup>158</sup>

A final viable option would be the creation of an organization that exists specifically to enforce indigenous peoples' rights.<sup>159</sup> The organization would bridge the gap between the large companies wanting to develop wind power and the indigenous people.<sup>160</sup> This would likely improve the indigenous people's bargaining power, and perhaps provide a solution to some of the issues discussed above. If the indigenous people were to have a resource devoted to their protection, it is highly likely that they would have a better chance to vindicate their rights. However, it is important to note that the indigenous community is mainly rural and somewhat isolated from big cities. Thus, any such organization would face the challenge of establishing an effective outreach program to be effective. Further, the organization would need to find an efficient way to meet the different linguistic needs of the different indigenous populations in Oaxaca, which may be additionally difficult. Nevertheless, some sort of protective entity is necessary to uphold the rights of the indigenous people, and certainly merits attention from the Mexican government.

This is not the first time that the indigenous' land rights have been addressed. In 1994, after Mexico became a party to NAFTA, there was a rebellion in Chiapas regarding indigenous land rights.<sup>161</sup> The indigenous people claimed rights over potentially impacted lands, advocating that Mexico should have one state devoted to the indigenous people.<sup>162</sup> This rebellion, while not resulting in a single indigenous state, did result in the acknowledgement of Mexico as a multicultural country after negotiation between communities and the federal government took place to gain recognition of this right.<sup>163</sup> It is time to revisit this struggle, and either vindicate the indigenous rights that were established as a result of this conflict, or renegotiate indigenous land rights in a way that allows energy-based progress as well as protects the indigenous claim to the land.

---

<sup>156</sup> See *supra*, note 153.

<sup>157</sup> To provide an example, the construction of the Venta II, III, and IV wind farms cost more than 600 million U.S. dollars. See *New Wind Farms for a Cleaner Mexico*, POWER ENGINEERING (Mar. 8, 2012). <http://www.power-eng.com/news/2012/03/08/new-wind-farms-for-a-cleaner-mexico.html> (last visited: Mar. 29, 2012).

<sup>158</sup> See *supra* note 148.

<sup>159</sup> Pers comm., Jorge A. Vargas, Nov. 16, 2011.

<sup>160</sup> *Id.*

<sup>161</sup> See Olson, *supra* note 48.

<sup>162</sup> *Id.*

<sup>163</sup> *Id.*

Recibido: 11 de enero de 2012.

Aceptado para su publicación: 20 de marzo de 2012.