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Shalanda H. Baker*

MEXICAN ENERGY REFORM, CLIMATE CHANGE, AND ENERGY JUSTICE IN INDIGENOUS COMMUNITIES

ABSTRACT

Mexico's recent energy reform portends a new era of private engagement in the oil and gas sectors. According to government officials and industry leaders, the opening of energy reserves for private development will spur economic growth and establish the country as a leader in the energy arena. This article examines whether the reforms could also lead to community-led growth in the renewable energy sector, specifically in Oaxaca, Mexico, which has been identified as one of the windiest places in the world and is currently already the site of extensive wind energy development. Building on my prior work exploring the impact of renewable energy development on indigenous communities in Oaxaca, this article presents a framework to explore the aspects of the energy reform that could lead to greater participation in renewable energy development by communities who have historically disproportionately borne the brunt of the country's energy development in the country. This article utilizes the theory of energy justice, which incorporates principles of environmental justice and climate justice as well as energy democracy, to consider whether opening the Mexican energy market to private participation and increased competition in the electricity sector could render communities more resilient in the face of climate change and better able to meet their energy needs.

INTRODUCTION

The stage is set. Mexico's energy reform signals a change in the way energy has been produced and distributed in the country since 1938.¹ The opening of the electrical generation and distribution markets to private participants has been heralded as an opportunity to boost oil and gas production in the country by increasing competition for the beleaguered state-owned oil and gas company, Petróleos Mexicanos (Pemex), and the vertically integrated state-owned utility,

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1. CLARE RIBANDO SEELKE ET AL., CONG. RESEARCH SERV., R43313, MEXICO'S OIL AND GAS SECTOR: BACKGROUND, REFORM EFFORTS, AND IMPLICATIONS FOR THE UNITED STATES 2 (2015).

Comisión Federal de Electricidad.² Other voices decry the energy reform as a slippery slope that will lead to the massive transfer of state-owned energy resources to private interests, which will ultimately harm the people of Mexico.³ No matter which side of the debate one falls, there's an elephant in the room: though the reformation of Mexico's energy sector specifically targets the vast oil and gas reserves in the country,⁴ exploration of these reserves requires development of land and ocean resources that are vital to indigenous communities. To facilitate this development, the reforms allow for rights of way on indigenous land that arguably contravene principles set forth in the Mexican Constitution, International Labor Organization Indigenous and Tribal Peoples Convention 169, and the United Nations Declaration on the Rights of Indigenous Peoples.⁵ Moreover, the opening of the immense oil and gas reserves in the country runs afoul of the climate change commitments Mexico made at the Twenty-First meeting of the Conference of the Parties to the United Nations Framework Convention on Climate Change in Paris.⁶ In short, although the energy reforms hold significant promise for economic development, there remain key concerns regarding indigenous rights and climate change.

This article proposes an approach to reconcile these competing tensions. More specifically, it argues that the recent energy reforms in Mexico should be viewed as an opportunity to take advantage of the existing land tenure structure in indigenous communities to provide a pathway toward endogenous, community-led, renewable energy development. In this way, communities traditionally disenfranchised and displaced by large-scale energy development can begin to participate in the global renewable energy transition. Moreover, Mexico can make significant strides toward reaching its climate change goals.

This article proceeds in three parts. Part I briefly provides the background and historical context for the energy reforms, ending with a discussion of the implications of the reform vis-à-vis indigenous communities and current national efforts to mitigate and adapt to the impacts of climate change. Part II positions the energy reforms in an energy justice analytical framework, suggesting that the reforms could increase vulnerability along the climate justice, environmental justice, and energy democracy axes in ways not openly contemplated by lawmakers engaged in reform activities. Part III suggests potential ways to remedy this vulnerability by

2. *Id.* at 1.

3. See, e.g., Luis A. Ferreira, *Mexico's Secondary Energy Reforms*, HARV. INT'L REV., Jan. 30, 2014, <http://hir.harvard.edu/blog/visitormexico-s-secondary-energy-reforms/> (urging secondary reforms to "ensure that benefits return to the Mexican people").

4. SEELKE, *supra* note 1, at 8–10 ("Mexico is the world's 10th-largest producer of oil and holds approximately 11.1 billion barrels of oil reserves—the 18th largest in the world. Mexico may also have the 8th-largest tight oil resources globally, about another 13 billion barrels") (citing BP Statistical Review of World Energy (June 2014), <http://www.bp.com/en/global/corporate/about-bp/energyeconomics/statistical-review-of-world-energy.html>).

5. See generally Alejandra Ancheita & Eric J. Wiesner, *Mexico's Energy Reform in Conflict with the Human Rights of Indigenous and Agrarian Communities*, 3 GRIFFITH J. OF L. & HUM. DIGNITY 246 (2015).

6. UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, INTENDED NATIONALLY DETERMINED CONTRIBUTION (Mar. 30, 2015), <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf>.

relying on the existing land-tenure structure, which is community based; engaging communities actively in the development process through principles outlined in the United Nations Declaration on the Rights of Indigenous Peoples and the consultation frameworks established by development banks; and borrowing from current U.S. energy reform efforts that seek to provide pathways for low-income communities to participate in renewable energy development. The article concludes that the current reforms, although designed to increase oil and gas development, could be an unexpected opportunity to leapfrog the traditional, centralized method of energy generation and distribution to bring Mexico into a modern energy system rooted in energy justice.

I. BACKGROUND: PETROLEUM-BASED REFORM

One need not look far for comments lauding Mexico's energy reforms, which began in 2013 via sweeping constitutional amendment.⁷ By some accounts, the reforms were intended to liberate the oil and gas fields left underdeveloped by the Mexican-owned oil and gas company, Pemex.⁸ Proponents suggested that opening the markets to private developers would bring much-needed revenue in the form of royalties to the Mexican government and create competition.⁹ Under the new framework for energy development, the Mexican government would retain ownership of the oil and gas produced, but allow for extraction of Mexico's resources by private companies more efficient in the area of energy exploration and exploitation.¹⁰

At the outset of the reforms, its stated goals appeared unattainable. An unexpected downturn in the price of oil, coupled with Mexico's own uncertain investment environment, discouraged early investors from bidding in the initial auction of available exploratory blocks.¹¹ The results of the first auction left officials flummoxed as to how to move forward to realize the true potential of the 2013 reforms and secondary reforms enacted in 2014.¹²

These new uncertainties should be contextualized within Mexico's broader historical energy and development landscape. The following sub-part (A) sets forth a brief overview of the history of the ownership of the Mexican energy system. Sub-part (B) discusses the reforms initiated by President Peña Nieto, beginning with his 2012 election campaign. Sub-part (C) ends Part I by discussing the implications of the reforms for the climate-energy nexus.

7. SEELKE, *supra* note 1, at 1.

8. *Id.*

9. LISA VISCIDI & PAUL SHORTELL, INTER-AMERICAN DIALOGUE, A BRIGHTER FUTURE FOR MEXICO: THE PROMISE AND CHALLENGE OF ELECTRICITY REFORM 3, 6 (2014), http://archive.the-dialogue.org/uploads/IAD9603_MexicanEnergyFINAL.pdf.

10. *Id.* at 5; SEELKE, *supra* note 1, at 4.

11. SEELKE, *supra* note 1, at 7.

12. Velda Addison & Leslie Hanes, *Round One in Mexico Disappoints*, OIL & GAS INV., Jul. 15, 2015, <http://www.oilandgasinvestor.com/round-one-mexico-disappoints-810076#p=full> (noting that "[o]f the 14 blocks up for bid [in round one, phase one], eight blocks received no bids and four had bids thrown out because they did not meet the government's requirement of 40% pre-tax profits" and the Mexican government's disappointment in the bidding results).

A. Energy Development and Land Ownership—A Brief History

Conflicts surrounding land and energy development form a critical part of the Mexican self-narrative.¹³ The question of who owns the land and who has the right to exploit the resources beneath it arguably led to the Mexican Revolution. The Constitution of 1917 reflects the ongoing dynamic between the twin narratives of land ownership and energy development. The current transition of Mexico's energy sector, as reflected by the constitutional reforms, echoes these familiar themes. At the heart of the reform are questions concerning land ownership, energy development, and the role of foreign interests in shaping the destiny of Mexico's most vulnerable populations. These relationships are historical and inextricably connected.

Energy reforms and land reforms in Mexico have long existed on parallel tracks. Mexico's system of land tenure contains three types of property ownership: private, public, and social.¹⁴ The social form of land ownership, the ejido, is a form of collective land ownership that dates back to the pre-Columbian system of land tenure.¹⁵ Ejidos "are government-sponsored lands owned by groups of individuals, either collectively or, more commonly, as a combination of individually worked usufruct parcels and common lands owned and used by all."¹⁶ Ejidos persisted intact until the late 1800s, when the post-colonial Mexican government enacted widespread land and energy reforms to allow broader private land ownership and incentivize investment in petroleum and mining resources.¹⁷

Changes in mineral rights accompanied these changes to land tenure. Between 1884 and 1909, the Mexican government passed a series of laws establishing the rights of surface owners to minerals (and eventually oil) beneath the surface.¹⁸ The mining laws of 1884 and 1892 provided that private investors could stake claim to sub-surface minerals.¹⁹ In 1909, the Mexican government enacted a petroleum law establishing that oil belonged to surface owners,²⁰ which led the way for nearly five hundred individual oil companies to establish offices in Mexico.²¹

13. Antonio B. Charles & Carlos de Maria y Campos S., *Oil & Gas*, LATIN LAW. (Jun. 2, 2015), <http://latinlawyer.com/reference/topics/47/jurisdictions/16/mexico/> (noting that "Mexico's oil and gas industry has long been a sensitive activity from a social perspective" and for "years it has been linked to 'Mexicanity' and sovereignty.")

14. TONY PAYAN & GUADALUPE CORREA-CABRERA, RICE U. BAKER INST. FOR PUB. POL'Y, LAND OWNERSHIP AND USE UNDER MEXICO'S ENERGY REFORM 2 (2014), <https://bakerinstitute.org/files/8400/>.

15. David Yetman & Alberto Búrquez, *Twenty-Seven: A Case Study in Ejido Privatization in Mexico*, 54 J. OF ANTHROPOLOGICAL RES. 73, 77 (1998).

16. *Id.* n.15.

17. MYRNA I. SANTIAGO, *THE ECOLOGY OF OIL: ENVIRONMENTAL, LABOR, AND THE MEXICAN REVOLUTION, 1900–1938* 43 (Cambridge University Press 2006) (discussing the *Ley Lerdo*, which "dismantled communal indigenous land tenure systems").

18. *Id.* at 63.

19. *Id.* at 63.

20. *Id.* at 63.

21. *Id.* at 67.

The consolidation of wealth in the hands of a few large landholders²² and corporations sparked the 1910 Mexican Revolution, widespread oil worker strikes,²³ and the enactment of land and energy reforms embodied within the 1917 Constitution. As to land, Article 27 of the Constitution provided a procedural mechanism for the transfer of land back to the ejido.²⁴ Article 27 also converted the sub-surface mineral rights back to the state, declaring that the state owned “solid mineral fuels; petroleum and all hydrocarbons—solid or gaseous,”²⁵ but that the state could transfer such rights through a concessionary agreement.²⁶ The revolutionary energy reforms continued with President Lázaro Cárdenas’s 1938 decree, which nationalized the Mexican oil industry and expropriated the “machinery, installations, buildings, pipelines, refineries, storage tanks, means of communication, tankers, distribution stations, ships, and all other properties” belonging to foreign companies.²⁷ In addition, President Cárdenas granted state-owned Pemex the exclusive right to exploit the country’s oil and gas resources.

Pemex formed under auspicious circumstances. Mexico sought to ensure the energy independence and energy security of its citizens by capitalizing on state-led oil and gas development. Over the past ninety years, however, Mexico’s promise as an efficient producer in the global oil economy has not been realized.²⁸

The Latin American debt crisis of the 1980s and the need for foreign investment led to the neoliberalization of Mexico’s economy and extensive agrarian land reform. In 1992, at the tail end of the “lost decade” in Latin America and on the heels of the debt crisis, Mexico adopted constitutional amendments that allowed for greater alienation of ejidos by ejiditarios (members of the ejido). Under the reforms, ejiditarios could own their own land as well as sell or lease it,²⁹ with the agreement of a majority of the ejido members.³⁰ This land reform was structured to increase financial benefits tied to communal land and to attract investment, part of the overall neoliberal economic development project in the country.³¹ Despite this intent,

22. Sam G. Baggett, *Article 27 of the Mexican Constitution: The Agrarian Question*, 5 *Tex. L. Rev.* 1, 1 (1926) (noting that concentration of land ownership led to the Mexican Revolution, and Article 27 aimed to remedy this issue by dividing large land estates and reconstituting ejidos).

23. Santiago, *supra* note 17, at 232.

24. Baggett, *supra* note 22, at 4 (discussing the Carranza decree of 1915, which stated, in part, that “all conveyances made by political authorities, and all concessions, compositions or sales made by the federal authorities, that illegally invaded the communal lands of towns, hamlets, congregations and communities are null and void”).

25. Santiago, *supra* note 17, at 260.

26. *Id.* at 232.

27. *Id.* at 338–39.

28. Luis A. Ferreira, *Mexico’s Secondary Energy Reforms*, *HARV. INT’L REV.* (Jan. 30, 2014) (discussing production and tax concerns surrounding Pemex, which contributed to the reform effort), <http://hir.harvard.edu/blogvisitormexico-s-secondary-energy-reforms/>.

29. Yetman & Burquez, *supra* note 15, at 78.

30. Payan & Correa-Cabrera, *supra* note 14.

31. Yetman & Búrquez, *supra* note 15, at 89 (noting the sweeping neoliberal reforms in Mexico in the 1980s and 1990s, including “government disengagement from state-owned enterprises, sharp decreases in government expenditures on social programs, easing of tariffs and embargoes, relaxation of restrictions on foreign investment, and . . . ideological abandonment of the traditional government sponsorship of communally owned lands”) (emphasis in original).

however, the majority of the country—51 percent—remains social land.³² The reforms also preceded the current energy reforms, which could not be possible without liberalization of land ownership.

In 2013, nearly 100 years after the nationalization of Mexico's energy resources, President Peña Nieto proposed significant changes to the Mexican Constitution that would lead to the opening, once again, of the Mexican energy markets to broader private participation. The reforms were enacted as national attitudes towards Pemex soured. A series of calamities involving the death of dozens of rig workers in a short time span;³³ the ongoing social and environmental disruption of indigenous communities, such as Tabasco and Campeche;³⁴ and the perceived failure to efficiently extract existing oil and gas reserves³⁵—led to a call for broad scale reform of the energy sector. As the following section outlines, these energy reforms have direct implications for the ejido and the ejiditario, which are consistent with the past century of discourse concerning energy development and land ownership in the country.

B. Climate Change and Energy Reforms

1. Energy Reform

The energy reforms include revisions to Articles 25, 27, and 28 of Mexico's Constitution as well as extensive secondary law reforms. President Nieto proposed the energy reforms in August 2013.³⁶ The Mexican Congress approved the constitutional amendments as well as an energy bill in December 2013, along with a set of secondary laws in August of 2014³⁷ that include, among other laws, the Hydrocarbons Law and the Electric Industry Law.

Articles 25 and 27 of the Mexican Constitution make clear that Mexico retains exclusive rights to grant concessions to hydrocarbon and oil resources.³⁸

32. PAYAN & CORREA-CABRERA, *supra* note 14, at 2.

33. Karl Mathiesen, *Gulf of Mexico Oil Rig Explosion Leaves Four Workers Dead*, THE GUARDIAN (Apr. 1, 2015) (noting that the total number of deaths due to fires at facilities run by Pemex totaled 64 in less than three years).

34. See Living on Earth, *Anti-Pemex Protests*, <http://loe.org/shows/segments.html?programID=96-P13-00009&segmentID=1> (aired the week of March 1, 1996) (discussing social and environmental impacts to Tabasco and Campeche); Manuel Jesús Pinkus-Rendón and Alicia Contreras-Sánchez, *Impacto Socioambiental de la Industria Petrolera en Tabasco: El Caso de la Chontalpa*, Revista LiminaR. Estudios Sociales y Humanísticos, año 10, vol. X, núm. 2, Julio-Diciembre de 2012, 125–126 (discussing changes to agricultural economy and environmental impacts).

35. Patrick Burchat, *Mexico's Energy Reforms: A Shaky Solution*, COUNCIL ON HEMISPHERIC AFFAIRS (2014), <http://www.coha.org/mexicos-energy-reforms-a-shaky-solution/> (noting that the removal of the constitutional ban on foreign investment in the energy sector came after a decline in Pemex production and lack of exploration of new reserves).

36. Alejandro Garcia, *Mexico's Energy Reform: Opportunities for the United States*, INT'L AFFAIRS REV. (2013), <http://www.iar-gwu.org/node/516>.

37. See Maria del Carmen Landa, *Mexico's Energy Reform: The Timeline*, WILSON CENTER (Aug. 14, 2014), <https://www.wilsoncenter.org/sites/default/files/Energy%20Reform%20Timeline.pdf> (offering a detailed outline of the timeline of the energy reform).

38. MAYER BROWN, IN-DEPTH ANALYSIS OF MEXICAN ENERGY REFORM 2–3 (2014), <https://www.mayerbrown.com/files/uploads/Mexico-Energy/Mayer-Brown-Mexico-Reform-Reference-Materials.pdf>.

Further, pursuant to Article 27, the country retains control of the planning and control of the national electric system, as well as transmission and distribution of electricity.³⁹ In certain instances, however, the Mexican government may grant contracts to private companies to participate in transmission and distribution activities.⁴⁰ In addition, Article 28 establishes a public trust—the Mexican Fund of Petroleum for Stabilization of Development (“the Fund”), which shall be managed by its trustee, the Mexican central bank.⁴¹ The purpose of the Fund shall be to “receive, administrate, and distribute income derived from entitlements and contracts” pertaining to exploration.⁴² The Fund’s activities are tightly regulated but, subject to certain limitations, the Fund shall transfer excess monies to finance investment projects in renewable energy and other projects approved by the Chamber of Deputies.⁴³

The Hydrocarbon Law, one of the secondary reforms enacted by Mexico in 2014,⁴⁴ provides a set of regulations responsive to the amendments of Articles 25, 27, and 28. Chapter IV of the Hydrocarbon Law (governing the use and occupation of land surface) and Articles 100 through 117 provide among the most controversial aspects of the energy reform. The Chapter begins by making specific reference to the Mexican Constitution, Mexico’s laws, and the international treaties (to which Mexico is a party) that recognize the rights of indigenous communities.⁴⁵ It then methodically describes the process whereby landholders will be required, under the new law, to negotiate and agree to grant access to a contracting party seeking to develop a project pursuant to the new law.⁴⁶ The law is framed as a mandate for landholders, providing, among other aspects, that:

- (1) Energy companies must inform landowners of their intentions to use their land and the nature of the project they wish to undertake.
- (2) The energy company must notify the Secretariat of Energy of its intention to initiate negotiations over a specific property.
- (3) The landowner can rent, lease, and yield the land’s temporary use, or sell or exchange the land.
- (4) All payments must reflect the commercial market value of the property.
- (5) All payments to landowners should include the amount negotiated for the sale or use of the land, plus environmental remediation compensation and the royalty fees agreed to by the parties . . .

39. *Id.* at 3.

40. *See id.*

41. *Id.* at 4.

42. *Id.* at 4.

43. *See id.* at 14–17.

44. Secretaría de Gobernación, *Ley de Hidrocarburos*, DIARIO OFICIAL DE LA FEDERACIÓN [DO], 8 de noviembre, 2014, http://www.dof.gob.mx/nota_detalle.php?codigo=5355989&fecha=11/08/2014; *See* Diana Villiers Negroponte, *Mexico’s Energy Reforms Become Law*, BROOKINGS (Aug. 14, 2014), <http://www.brookings.edu/research/articles/2014/08/14-mexico-energy-law-negroponte>.

45. MAYER BROWN, HYDROCARBONS LAW 84 (2015), https://www.mayerbrown.com/files/uploads/Documents/PDFs/2015/January/UPDATE-HydrocarbonsLaw_Translation.pdf.

46. *Id.*

- (8) In their negotiations, communal landowners can utilize the legal counsel of the Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food. . . .⁴⁷

The Electric Industry Law became effective in August of 2014, and opens the “electric industry to private sector participation in generation, transmission, distribution and power marketing activities.”⁴⁸ The law reforms the electricity sector by disaggregating the vertically integrated electricity market formerly controlled by the state-owned Federal Electricity Commission (CFE).⁴⁹

Under the reforms, three government agencies will regulate generation, transmission, and distribution.⁵⁰ The Department of Energy (SENER) will provide policy directives for the sector. The Energy Regulatory Commission (CRE) will regulate the industry, and the National Energy Control Center (CENACE), will manage the grid and wholesale electricity market to allow for non-discriminatory access to the grid.⁵¹ CFE, the state-owned enterprise, will be just one competitor in the new electricity market.⁵² As with the new Hydrocarbons Law, land reform is embedded within the new Electric Industry Law. Given the “special” priority placed on the transmission and distribution of electricity over other uses of the surface and subsurface, the new law “contemplates the right of occupation and use of land owned by third parties for the location, construction [*sic*] and operation of site-specific generation projects . . . and transmission and distribution activities.”⁵³ If parties cannot reach agreement concerning the “purchase, use or occupation of land,” the “industry participant may request that (i) a district judge grant a legal easement or (ii) the Ministry of Agricultural, Territorial and Urban Development conduct a mediation.”⁵⁴

At a macro level, the foregoing secondary reforms are seen throughout the industry as a way to open “largely untapped oil and gas reserves to foreign investors and competitors,”⁵⁵ as well as create competition with respect to generation, transmission, and distribution for the state-owned CFE.⁵⁶ The new rules establishing a market for generation should also “open up power generation to all participants and

47. PAYAN & CORREA-CABRERA, *supra* note 14, at 3.

48. *Analysis of Mexico's New Electric Industry Law*, MAYER BROWN 1 (August 14, 2014), https://www.mayerbrown.com/Files/Publication/15cb6f04-748b-4836-a607-26c65997c1c1/Presentation/PublicationAttachment/0f38ad29-4abf-442b-ae9-319d68469310/UPDATE-AnalysisElectricityLaw_0814.pdf. See also Secretaría de Gobernación, Ley de la Industria Eléctrica, November 8, 2014, DO, http://www.dof.gob.mx/nota_detalle.php?codigo=5355986&fecha=11/08/2014.

49. *Id.*

50. *Id.*

51. *Id.*

52. *Id.* at 2.

53. *Id.* at 3.

54. *Id.* at 4.

55. Garrett Hering, *Energy Reform: Will Mexico's Newest Revolution Boost Renewables – or Just Fossil Fuels?*, THE GUARDIAN (June 2, 2015), <http://www.theguardian.com/sustainable-business/2015/jun/02/mexico-oil-companies-reforms-gas-hydrocarbon>.

56. Lisa Viscidi and Paul Shortell, *A Brighter Future for Mexico: The Promise and Challenge of Electricity Reform*, INTER-AMERICAN DIALOGUE (June 2014), http://archive.thedialogue.org/uploads/IAD9603_MexicanEnergyFINAL.pdf.

guarantee nondiscriminatory access to the electric grid.”⁵⁷ According to government officials and President Nieto, this market expansion bodes well for the overall economic growth in the country and should stimulate economic activity.⁵⁸

Oil features prominently in Mexico’s energy future. The Mexican government estimates that “oil production will increase to four million barrels per day by 2025 because of the reforms,”⁵⁹ which is over one million additional barrels of oil produced from its 2013 baseline, and seventy-five percent higher than the U.S. Energy Information Agency 2013 forecast. The reforms also promise the introduction of new technologies to allow for hydraulic fracturing and “ultra deep” off shore drilling, as the country estimates that the Gulf of Mexico contains approximately 50 billion barrels of oil.⁶⁰

The question is: how can Mexico do all of this and tackle climate change, something it has positioned as a key policy priority? The following section outlines the country’s current climate change policies.

2. Climate Change Law

Mexico’s energy reforms are taking place within a rapidly evolving climate change landscape. Indeed, the reforms were situated against the backdrop of sweeping climate change legislation, setting forth an ambitious agenda to mitigate its greenhouse emissions, as well as its international commitments to act aggressively to combat climate change. To that end, the country’s climate change actions position it as a global leader.

The General Law on Climate Change, unanimously approved by the Mexican Congress in 2012,⁶¹ “sets voluntary national targets to reduce Mexico’s total emissions to half of 2000 levels by 2050 and requires Mexico to get over a third of its electricity from renewable sources by 2024.”⁶² Its enactment also made Mexico the first developing country to have a comprehensive law on climate change.⁶³

In a presentation describing Mexico’s climate change law and policies, the Secretariat of Environment and Natural Resources stated that the country has three general climate change goals: “[1] low-carbon development—[t]o achieve a competitive, sustainable, and low-carbon emissions economy; [2] resilient Mexico—[t]o reduce vulnerability of people, ecosystems, and infrastructure to the adverse

57. HERING, *supra* note 55.

58. *Mexican President Signs Landmark Energy Reform Into Law*, REUTERS (Aug. 11, 2014), <http://www.reuters.com/article/us-mexico-reforms-idUSKBN0GB26R20140811>.

59. Luis A. Ferreira, *Mexico’s Secondary Energy Reforms*, HARVARD INT’L REV. (Jan. 30, 2014), <http://hir.harvard.edu/blogvisitormexico-s-secondary-energy-reforms/>.

60. Myrna Santiago, *Mexico’s Energy Reform: National Coffers, Local Consequences*, REVISTA: HARV. REV. OF LATIN AM., Fall 2015, at 18, <http://revista.drclas.harvard.edu/book/mexico%E2%80%99s-energy-reform> (noting that crude oil now sought lies at “2,900 meters below the surface” of the ocean and by “comparison, the British Petroleum-Deepwater Horizon well that exploded in 2010 and dumped some nine million barrels of oil in the Gulf of Mexico was at 1,500 meters”).

61. INDC at 1, <http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mexico/1/MEXICO%20INDC%2003.30.2015.pdf> (last visited Apr. 18, 2016).

62. Christina McCain, *How Mexico’s Reforms Open New Doors for Reaching Clean Energy and Climate Goals*, ENVTL. DEF. FUND (Feb. 25, 2014), <http://blogs.edf.org/climatetalks/2014/02/25/how-mexicos-reforms-open-new-doors-for-reaching-clean-energy-and-climate-goals/>.

63. INDC at 1.

effects of climate change[; and 3] inclusive policy—[t]o ensure coordination among all levels of government with transparency and participation of all sectors of society[.]”⁶⁴ On paper, the country has taken aggressive steps towards its goals. In 2013, the country established an Inter-Ministerial Commission on Climate Change, as well as a Climate Change Council.⁶⁵ The same year, the country developed its National Climate Change Strategy and approved a carbon tax for fossil fuels.⁶⁶ Part of the country’s national strategy also involves adaptation and mitigation efforts supported by comprehensive climate change policies; technology; proper monitoring, reporting, and verification, consistent with international norms; economic, fiscal, and financial instruments; capacity building; and international cooperation.⁶⁷

Mexico’s international statements concerning climate change echo these internal legislative and administrative acts. In its Intended Nationally Determined Contribution statement to the United Nations, Mexico states that it seeks to “decouple” its greenhouse gas emissions from economic growth.⁶⁸ Moreover, the country views its climate change reforms as a part of a larger reform effort that includes the energy reforms enacted in 2013.⁶⁹ As the remaining portions of this article discuss, these dual energy and climate change reform efforts appear to be in tension.

C. Implications at the Climate-Energy Nexus

Reading these reforms together offers an interesting dialectic: on one hand, the state designed the energy reforms specifically to tap previously unexploited oil reserves available only through deep-sea ocean drilling, as well as exploit natural gas by engaging in hydraulic fracturing of parts of the Eagle Ford shale.⁷⁰ Simultaneously, and it would seem, contradictorily, the state is embarking on historic climate change reforms. These legislative acts would seem to be in conflict.

In addition, the social property regime could destabilize efforts to implement the energy reform, or worse, the law itself could run afoul of existing Constitutional and international treaty obligations respecting the rights of indigenous peoples.⁷¹ According to the Baker Institute for Public Policy, twelve states containing extensive tracts of social land could become “cauldrons of conflict,” as they also contain extensive hydrocarbon deposits. The climate change dialectic, coupled with the potential impact of the reforms on indigenous communities, raises significant

64. *Mexico’s Climate Change Law and Policies*, SECRETARIAT OF ENV’T AND NAT. RES., https://www.thepmr.org/system/files/documents/Mexico_Climate%20Change%20Law%20and%20Policies.pdf.

65. *Id.* at 3.

66. *Id.*

67. *Id.* at 8.

68. INDC at 2.

69. *Id.* at 1.

70. Reforma Energética, MÉXICO GOBIERNO DE LA REPÚBLICA 4–6, <http://embamex.sre.gob.mx/succia/images/reforma%20energetica.pdf> (discussing exploitation of the Eagle Ford shale, as well as ultradeep waters in the Gulf of Mexico, and the need for additional companies, technology and investment to develop the resources).

71. *See generally* Ancheita and Wiesner, *supra* note 5.

concerns regarding the wisdom of pursuing the energy reforms in the ways originally envisioned and construed by lawmakers and vocal proponents.

Part II introduces energy justice as a way to resolve these inconsistencies. It maps the ways that the energy reforms, as currently construed by lawmakers and vocal proponents, are at odds with certain energy justice principles. Part III offers possibilities to resolve these tensions so that they are consistent with Mexico's climate change efforts and international law.

II. ENERGY JUSTICE IN MEXICO

The concept of energy justice has only recently made its way into the modern discourse concerning energy development.⁷² Though not yet a cohesive field of study, this discourse has evolved in recent years to provide a useful overall framework to view three core related areas of law: climate justice, environmental justice, and energy democracy.

First, energy justice incorporates the concept of climate justice—a field that recognizes the ways in which low-income communities and developing states will disproportionately bear the burden of the impacts of climate change, even though these affected communities have done very little to create the problem of global climate change.⁷³ This discourse cuts across Global North and Global South and acknowledges that where there is vulnerability, climate justice requires substantive intervention to increase resiliency.⁷⁴ Energy justice, therefore, further requires that development activities bear in mind the need to reduce vulnerability to climate change and enhance resiliency when possible.

Second, environmental justice also finds a place within the broader energy justice rubric. Energy justice addresses the ways in which low income communities and rural communities often find themselves burdened by development, including large-scale energy developments.⁷⁵ These communities—sometimes called “sacrifice zones” within the environmental justice literature⁷⁶—exhibit certain

72. Lakshman Guruswamy was one of the first to define energy justice, framing energy justice as a moral obligation to ensure that those who lack access to clean energy, the energy poor, have access to clean energy technologies that limit exposure to harmful indoor pollutants. Lakshman Guruswamy, *Energy Justice and Sustainable Development*, 21 COLO. J. INT'L ENVTL. L. & POL'Y 231, 231–32 (2010). See also Lakshman Guruswamy, *Global Energy Justice Law and Policy* 87 (West 2016) (noting that, “[g]lobally, around 2.8 billion people (the ‘Other Third’ or ‘Energy Poor’) have little or no access to beneficial energy to meet their needs for cooking, heating, water, sanitation, illumination, transportation, or basic mechanical power”). In the intervening years, energy justice has evolved to incorporate principles of climate justice, environmental justice, and energy democracy. See Benjamin K. Sovacool & Michael H. Dworkin, *GLOBAL ENERGY JUSTICE: PROBLEMS, PRINCIPLES AND PRACTICES* (Cambridge Univ. Press, 2014) (for a useful overview of the philosophical underpinnings of energy justice).

73. Maxine Burkett, *Climate Reparations*, 10 Melb. J. Int'l L. 509, 510 (2009) (“those who will suffer most acutely [the impacts of climate change] are also those who are least responsible for the crisis to date.”).

74. See, e.g., Randall S. Abate, *Public Nuisance Suits for the Climate Justice Movement: The Right Thing and the Right Time*, 85 Wash. L. Rev. 197, 207, 209 (2010); Maxine Burkett, *Just Solutions to Climate Change: A Climate Justice Proposal for a Domestic Clean Development Mechanism*, 56 Buff. L. Rev. 169 (2008).

75. Uma Outka, *The Renewable Energy Footprint*, 30 Stan. Envtl. L.J. 241, 258 (2011).

76. Jessica Barkas, *Testing the Bomb: Disparate Impacts on Indigenous Peoples in the American West, the Marshall Islands, and in Kazakhstan*, 13 U. BAL. J. ENVTL. L. 29, 31 (2005); Lawrence J. Straw

features, such as lack of political voice, preexisting environmental degradation, and dense development.⁷⁷ Although environmental justice communities often refer to communities impacted by traditional oil and gas development, these communities may also face environmental impacts from utility scale renewable energy development.⁷⁸ Energy justice provides a theoretical framework to examine the siting issues surrounding energy development, and help avoid or remediate past harms related to such development.

Third, energy justice also incorporates energy democracy. Energy democracy provides affected communities a role in determining the types of energy distributed to them—clean or fossil fuel based—as well as the types of entities that distribute it. Energy democracy also suggests that, with respect to energy projects, communities should have participatory rights vis-à-vis financing mechanisms or other contractual mechanisms that incorporate mutually beneficial terms.⁷⁹ Development rooted in energy democracy thus allows for broader community participation through procedural mechanisms involving prior consultation and free, prior, and informed consent (FPIC); and substantive mechanisms offering benefits to community members. With this analytical framework, we examine the current reforms underway in Mexico.

A. Climate Justice

Climate change has already begun to impact various sectors within Mexico and promises to bring deeper hardship to certain communities. In the last 50 years, the country has experienced variations in temperature and precipitation.⁸⁰ In addition, Mexico has seen an increase in the number of extreme weather events, such as tropical cyclones, floods, and droughts, and the country predicts a 10 to 20 percent drop in precipitation across the country.⁸¹ Further, in 2014, the government agency monitoring climate impacts deemed approximately 30 percent of municipalities “highly vulnerable to the adverse impacts of change including droughts, floods, and landslides.”⁸² Climate justice requires energy development that is open to mitigating carbon emissions and to render communities less vulnerable to the impacts of climate change.⁸³ Mexico’s renewable energy efforts to date put these two aspects of climate justice at odds.

Jr., *Environmental Justice: Racial Gerrymandering for Environmental Siting Decisions*, 14 VA. ENVTL. L.J. 665, 670 (1995).

77. Dayna Nadine Scott, *Confronting Chronic Pollution: A Socio-Legal Analysis of Risk and Precaution*, 46 OSGOODE HALL L.J. 293, 319–20 (2008).

78. See generally, Shalanda Helen Baker, *Unmasking Project Finance: Risk Mitigation, Risk Inducement, and an Invitation to Development Disaster?*, 6 TEX. J. OIL GAS & ENERGY L. 273 (2010–11) (discussing indigenous communities impacted by widespread renewable energy development).

79. See Sovacool & Dworkin, *supra* note 72, at 208–13 (discussing procedural justice and stakeholder engagement in energy decision-making).

80. INDC at 6.

81. *Id.*

82. *Id.*

83. Abate, *supra* note 74, at 207, 209 (discussing the international and domestic underpinnings of climate justice, and noting that environmental justice theory provided a critical aspect of the theoretical foundation for climate justice by recognizing the “disproportionate impacts of environmental regulation

Clean and renewable energy provides a viable mechanism to reduce carbon dioxide, which would mitigate the impacts of climate change, especially considering that since the early 2000s, Mexico has embarked on an aggressive campaign to exploit its wind energy resources. The state of Oaxaca encompasses a wind energy corridor that connects the Pacific Ocean to the Gulf of Mexico, and the wind energy resources in this region are said to be the best in the world.⁸⁴ As of this writing, at least 21 individual large-scale wind farms are in development or operation in Oaxaca,⁸⁵ which houses approximately 90 percent of the developed wind energy capacity in the country.⁸⁶

In many ways, the early wind development in Oaxaca provided a preview of the comprehensive energy reforms that are now taking place in the country. In 1992, the Mexican government reformed the Power Public Services Law in the country to allow for private participation in renewable energy development as long as the generation fit within one of the following six categories: (1) “self-supply,” wherein the investor in the renewable energy project also owns the electricity generation facility;⁸⁷ (2) cogeneration, which involves the production of electricity from thermal energy not used in any process or fuel remains; (3) small production involving plants less than thirty megawatts and sold to CFE, or less than one megawatt used to power rural communities lacking electricity; (4) independent power production of more than thirty megawatts sold to CFE; (5) electricity for export; and (6) electricity produced for import and subject to a tax.⁸⁸ In practice, this meant that a company, such as Walmart or Heineken, would form a subsidiary to provide a nominal co-investment in the renewable energy development project. Next, the subsidiary, acting in a limited capacity, would develop a project in conjunction with a major energy investment firm, such as Macquarie International. The finished project would sell energy to the parent company or its affiliate (e.g., Wal-Mart stores or Heineken factories).⁸⁹

This early energy reform spurred extensive renewable energy development in Oaxaca. Although the government praised the clean energy development for its overall mitigation of carbon dioxide, the development provided limited benefits to

on minority and low-income communities” and that the vulnerability of developing nations has become a focus of climate justice).

84. *Mexico's Robust Wind Energy Prospects Ruffle Nearby Villages*, NAT'L GEOGRAPHIC (Feb. 10, 2013), <http://news.nationalgeographic.com/news/energy/2013/02/pictures/130208-mexico-wind-energy/>.

85. SOLEDAD MILLS, SEBASTIÁN PÉREZ & JOSH GARRET, *EQUITABLE ORIGIN, DEFINING AND ADDRESSING COMMUNITY OPPOSITION TO WIND DEVELOPMENT IN OAXACA 1* (2016) (noting that the Isthmus of Tehauntepec is one of several “hot spots” in the foreign energy investment boom, and that the “overlap of indigenous territories and large-scale energy development has sparked intense conflict between a number of indigenous communities and Mexican government agencies working in support of energy development companies”).

86. *Id.*

87. Shalanda Helen Baker, *Unmasking Project Finance: Risk Mitigation, Risk Inducement, and an Invitation to Development Disaster?*, 6 TEX. J. OIL GAS & ENERGY L. 273, 284 n.61 (2010–11) (discussing self-supply framework).

88. B.J. Ruiz-Mendoza & C. Sheinbaum-Pardo, *Mexican Renewable Electricity Law*, 35 RENEWABLE ENERGY 674, 675 (2010).

89. For a discussion of a sampling of projects developed in this manner, see Shalanda H. Baker, *Project Finance and Sustainable Development in the Global South*, in INT'L ENVTL. L. AND THE GLOBAL SOUTH 338 (Shawkat Alam et al. eds., 2015).

the local community. In addition, the development activity implicates climate justice because it may render certain communities less able to manage the impacts of climate change.

As a starting point, the controversy stemming from the wind energy development focuses primarily on land-use issues. Oaxaca is home to numerous indigenous communities that rely on the land to support a subsistence way of life. Moreover, the communities have centuries-long ties to their land, which holds substantial spiritual and cultural significance. Finally, the land is held in common through the ejido structure of land ownership. As discussed above, this communal land holding structure was reformed in 1992 to allow for some divestment of community holdings; however, any order, lease, or conveyance of land must be made with the consent of the community in which the ejido is held. Activists and community members opposing the wind development frequently cite the violation of the ejido as the chief offense of multinational companies engaged in the region's wind development.⁹⁰

Food security and water security also comprise core aspects of the renewable energy debate in Oaxaca. The communities in areas affected by the wind development point to the potential damage to the water table from dense wind energy development in the region.⁹¹ Southern Mexico already faces water security concerns, and strain on the water table due to extensive use of non-porous concrete could deepen water insecurity in the region.⁹² Further, the land leased to wind developers displaces crops and disrupts vital ocean resources.⁹³ Climate change will destabilize these vulnerable agricultural regions and add increased strain on existing water resources.

Ironically, this resource-rich region also has the second lowest electrification rates in the country. In 2012, CFE reported a national electrification rate of 97.9 percent; however, just over 94 percent of the population of the state of Oaxaca has access to electricity.⁹⁴ When the electricity data is disaggregated by community, a staggering one in three communities in Oaxaca state lacks access to electricity.⁹⁵ CFE attributes this high rate of energy poverty to the dispersal of communities that lack a large population.⁹⁶

90. Baker, *supra* note 87, at 285–87.

91. *Id.* at 287.

92. Diana M. Liverman, *Vulnerability and Adaptation to Drought in Mexico*, 39 NAT. RESOURCES J. 99, 102 (1999) (noting historical periods of drought in Oaxaca).

93. Jennifer M. Smith, *Indigenous Communities in Mexico Fight Corporate Wind Farms*, UPSIDE DOWN WORLD (Nov. 1, 2012), <http://upside-downworld.org/main/mexico-archives-79/3952-indigenous-communities-in-mexico-fight-corporate-wind-farms> (discussing potential impact of Parque Eólico San Dionisio, a proposed project containing 102 wind turbines in the ocean near the ancestral land of the Ikoots people of Oaxaca); Renata Bessi & Santiago Navarro F., *Biío Hioxo Wind Energy Project Hurting Indigenous Peoples and Their Territories*, AMERICAS PROGRAM (May 17, 2014), <http://www.cip.americas.org/archives/12042> (discussing various environmental impacts associated with the Biío Hioxo Energy wind project in Oaxaca).

94. COMISIÓN FEDERAL DE ELECTRICIDAD, MEETING THE DUAL GOAL OF ENERGY ACCESS AND SUSTAINABILITY – CSP DEPLOYMENT IN MEXICO 5 (2012), http://www.esmap.org/sites/esmap.org/files/CFE_Meeting_dual_goal_Mexico.pdf

95. *Id.* at 6.

96. *Id.* at 7.

A climate justice approach to the wind energy development in Oaxaca would provide more, not less, security to communities. Such security might be addressed by examining the scale, scope, and distribution modality of the wind energy development as well as involving communities in the planning process to minimize watershed impacts and maximize food production areas.

B. Environmental Justice

Environmental justice requires remediation of past harms from environmental development and prospectively siting projects in order to minimize negative environmental impacts.⁹⁷ Much of the energy reform has focused on the potential of private developers to increase oil and gas production in the country. Decision-making rooted in environmental justice must acknowledge the prior harms caused by development in certain communities and minimize environmental harm going forward.

Major accidents, spills, and conflicts mar Mexico's history of oil and gas development. Certain regions have disproportionately borne the brunt of Pemex's activities. Salina Cruz in the state of Oaxaca, for example, is home to the country's biggest oil refinery and has seen its share of major spills⁹⁸ and accidents.⁹⁹ The state of Veracruz also has a long history of oil and gas development. The region's cancer rates and other industrial-related illnesses make it a classic environmental justice community deserving of remediation.¹⁰⁰ Indeed, as noted, Pemex's poor record of oil and gas development provided the impetus for the current reform.

The country's untapped reserves are located in extreme locations such as areas of the ultra-deep sea twice the depth of those that were home to the ill-fated British Petroleum Deepwater Horizon oil well.¹⁰¹ Any oil and gas extractive activities in such deep water will necessarily involve a great deal of complexity and risk. Communities relying on the ocean resources in these potential drilling areas should be engaged in consultations regarding such development activity. Environmental justice would also require exploring alternative methods of development that involve less risk.

97. Carmen G. Gonzalez, *Environmental Justice, Human Rights, and the Global South*, 13 SANTA CLARA J. OF INT'L L. 151, 155 (2015) (noting that the four key aspects of "environmental injustice experienced by historically marginalized communities" asserted by environmental justice scholars: "(1) distributive injustice arising from disproportionate exposure to environmental hazards and limited access to environmental amenities, (2) procedural unfairness caused by exclusion from environmental decision-making, (3) corrective injustice due to inadequate enforcement of environmental legislation, and (4) social injustice because environmental degradation is inextricably intertwined with deeper structural ills, such as poverty and racism.").

98. See e.g., Serge Dedina, *Pemex Oil Spill in Oaxaca, Mexico, Threatens Sea Turtles and Surfing Beaches*, WILD COAST (Aug. 24, 2012), <http://www.wildcoast.net/media-center/news/676-pemex-oil-spill-in-oaxaca-mexico-threatens-sea-turtles-and-surfing-beaches>.

99. Ana Isabel Martinez, *Update 2-Fire Erupts at Mexico's Biggest Oil Refinery, Some Hurt*, CNBC (Nov. 24, 2015), <http://www.cnbc.com/2015/11/24/reuters-america-update-2-fire-erupts-at-mexicos-biggest-oil-refinery-some-hurt.html>.

100. Myrna Santiago, *Mexico's Energy Reform: National Coffers, Local Consequences*, HARV. REV. OF LATIN AMERICA (Fall 2015), at 16, <http://revista.drclas.harvard.edu/book/mexico%E2%80%99s-energy-reform>.

101. *Id.* at 18; see REUTERS, *supra* note 58, and accompanying text.

The country is also looking to hydraulic fracturing, or “fracking,” a method of extracting oil and gas from the earth by first injecting water and a mixture of sand and chemicals into the earth at high pressures to release oil or gas.¹⁰² Fracking has vocal opponents in the United States and other countries, primarily due to the amount of water required in fracking operations. Opponents also point to the environmental concerns surrounding the wastewater produced by fracking, as it can only be deposited in pools on the surface or re-injected into the earth.¹⁰³ For a developing country such as Mexico, the specter of fracking raises significant concerns about the ongoing vitality of water resources and the possibility of negative impacts on the environment. Environmental justice requires that communities facing potential fracking activities be provided with effective pathways for redress in the event of environmental harm. Officials considering further development activities in a region should also consider the historical impacts of development to determine whether the community has borne a disproportionate burden of high-risk, pollution-causing development.

C. Energy Democracy

Opponents of the energy reforms base many of their concerns on the theoretical framing of energy democracy. The energy reforms explicitly require that private companies engage in potential energy development activities and actively work with communities and individuals to acquire the land required for project activities. However, the law further provides that when the private entity cannot reach agreement with a community member, the entity has the legal right to pursue claims against the landholder.¹⁰⁴

These provisions in the Hydrocarbon Law and Electric Industry Law run afoul of international legal norms protecting the rights of indigenous peoples. The doctrine of free, prior, and informed consent, or FPIC, is set forth in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP),¹⁰⁵ incorporated into the International Finance Corporation’s performance standards,¹⁰⁶ and comprises a key part of the Equator Principles standards concerning the financing of large development projects.¹⁰⁷ The UNDRIP provides, in relevant part, the state must obtain the free, prior, and informed consent of indigenous peoples prior to enacting legislative or administrative measures that affect indigenous peoples; and prior to the

102. SEELKE ET AL., *supra* note 1.

103. Shalanda H. Baker, *Is Fracking the Next Financial Crisis? A Development Lens for Understanding Systemic Risk and Governance*, 87 TEMP. L. REV. 229, 265 (2015).

104. Patrick Burchat, *Mexico’s Energy Reforms: A Shaky Solution*, COUNCIL ON HEMISPHERIC AFFAIRS (July 30, 2015), <http://www.coha.org/mexicos-energy-reforms-a-shaky-solution/> (discussing the controversial aspect of the reforms that “allows for the government’s forcible seizure of land for oil exploitation, regardless of a community’s concerns or protests”).

105. United Nations Declaration on the Rights of Indigenous Peoples, G.A. Res. 61/295, U.N. GAOR, 61st Sess., 107th plen. mtg., Supp. No. 49, U.N. Doc. A Res/61/295 (Sept. 13, 2007).

106. See Shalanda H. Baker, *Why the IFC’s Free, Prior, and Informed Consent Policy Does Not Matter (Yet) to Indigenous Communities Affected by Development Projects*, 30 WIS. INT’L L.J. 668, 678 (2012) (discussing International Finance Corporation policy incorporating the doctrine of free, prior, and informed consent, which is also incorporated into the Equator Principles).

107. *Id.* at 685-686.

approval of projects affecting indigenous land, territory, and other resources, particularly with respect to the utilization or exploitation of natural resources.¹⁰⁸ Moreover, International Labor Organization Convention 169 requires consultation of indigenous peoples in projects affecting them;¹⁰⁹ and Article 2 of the Mexican Constitution grants substantial rights to indigenous peoples.¹¹⁰

The new energy reform provisions also contravene the broader principles of energy democracy. Energy democracy under the new legal framework would entail active engagement by government entities and private companies with communities and individuals who may be impacted by any development activities. Such engagement would go beyond consultation to allow for provision of community benefits or other remuneration in connection with the development activities.¹¹¹ Energy democracy would also allow community members to participate in development activities by having a partial or complete ownership stake in the development project.

III. IMPLEMENTING ENERGY JUSTICE

Energy justice requires that all three elements be met: climate justice, environmental justice, and energy democracy. What emerges from the above discussion of these elements is a set of requirements for energy development that is clean, has limited impact on burdened and vulnerable communities, and provides substantive and procedural opportunities for community participation. However, due to the history of energy development and present momentum surrounding the energy reforms in Mexico, meeting all three aspects of the energy justice framework presented here could prove difficult. Fortunately, the legal framework provided by the Mexican government does appear to provide room for some form of energy development rooted in energy justice. Part III outlines the contours of such an approach.

A. Animating FPIC

The Mexican government has engaged in rounds of consultation involving indigenous communities in connection with renewable energy development.¹¹² Such consultations have been criticized by observers as lacking meaningful opportunities

108. *Id.* at 676 (discussing the contours of the doctrine).

109. Ancheita & Wiesner, *supra* note 5, at 259 (quoting the Convention and noting that the “fundamental principles of the Convention are that indigenous and tribal peoples should be consulted and should fully participate at all levels of decision-making processes that concern them”).

110. Article 2 of the Mexican Constitution provides, among other protections, for the recognition of the right to self-determination of indigenous peoples, respect for indigenous languages, and the preservation of indigenous territory. Constitución Política de los Estados Unidos Mexicanos [C.P.], art. 2, DO, 5 de Febrero, 1917 (Mex.), <http://info4.juridicas.unam.mx/ijure/fed/9/3.htm?s=>. See also Ancheita & Wiesner, *supra* note 5, at 256–57 (discussing the June 2011 amendments to the Mexican Constitution, which enhanced human rights protections by providing that “rules on human rights shall be interpreted in accordance with the Constitution and international treaties on the subject”).

111. See Baker, *supra* note 106, at 671 (proposing adoption of an Environmental and Social Risk Agreement in connection with large projects).

112. Ancheita & Wiesner, *supra* note 5, at 249.

for substantive participation by indigenous communities.¹¹³ The emerging international norms surrounding FPIC coupled with the obligations set forth in Mexico's Constitution and its ratification of ILO 169 provide a strong legal basis on which to argue for both procedural and substantive reforms of the consultation process to give meaning to existing national and international law. Giving deeper meaning to FPIC within the current energy development landscape also advances the energy justice principle of energy democracy.

In the face of intimidation, threats, and harassment,¹¹⁴ communities affected by energy development or electricity transmission and distribution activities must continue to press for procedural remedies. The scope and scale of the energy reforms underway have galvanized non-governmental agencies and brought renewed international attention to indigenous rights concerns in Mexico. Organizations such as ProDESC (Proyecto de Derechos Económicos, Sociales y Culturales) are currently engaged in strategic legal efforts to halt procedurally defective wind energy development in Oaxaca.¹¹⁵ Such recent efforts shine a light on the flaws of the government consultation process, and may ultimately pressure the Mexican government to reform its approach to the prior, informed consultation and consent process. These grassroots endeavors to enforce the rights of indigenous peoples that are enshrined in international and domestic law appear to be the current best avenue to secure procedural justice in Mexico's moment of deep transition.

Substantively, the consultation process must offer opportunities for meaningful exchanges among community members, and also among community members, government officials, and developers. The process must be initiated in time for the community to affect the direction of the development, rather than after the grant of governmental approvals for the project.¹¹⁶ Finally, the consultation process should also offer opportunities for significant economic participation and other meaningful social benefits in connection with the project.

113. *Id.* at 269 *passim*, 276 (discussing flaws to consultation process in connection with wind energy development in Juchitán, Oaxaca, including "(1) lack of transparency in providing information about the project to affected community members; (2) failure to conduct the proceedings in a way that was culturally adequate for indigenous participants; (3) a lack of clear and fair decision-making mechanisms that included real input from impacted communities; and (4) the inappropriate and undue involvement of [the project developer] itself in the process").

114. *Id.* at 266 (describing the vulnerability of Mexican human rights advocates and communities opposing private development).

115. *Id.* at 269–270 (the strategic approach taken by ProDESC with respect to two large wind developments in Oaxaca, Bií Hioxo and Eólico del Sure, include "(1) organizing and outreach to empower local communities impacted by energy projects . . . (2) legal action within the Mexican judicial system designed to press federal and state authorities to respect the human rights protections guaranteed under the Mexican Constitution and international law; (3) documentation of human rights violations; (4) political engagement and policy advocacy; (5) coordination and coalition work with organizational allies in Mexico and abroad; (6) communication and engagement with media; and (7) strategic corporate research.").

116. *Id.* at 276 (Alejandra Ancheita and Eric Jason Wiesner describe this flaw in the consultation process related to the Eólica del Sur project in Juchitán, Oaxaca. A group of non-governmental observers critiqued the validity of the consultation process, since it occurred after Mexico's environmental agency, SEMARNAT, had already approved the environmental impact assessment in connection with the project.).

B. Respecting the Ejido

Despite the land reforms of the 1990s, the ejido remains relevant in Mexico. The community land ownership structure provides the potential to empower communities in ways not currently contemplated by the current energy reforms. The strength of the ejido lies in its community assembly decision-making process.¹¹⁷ With respect to major issues concerning the disposition of land or other community matters, decisions are made by majority vote.¹¹⁸ Although outside observers might view the consensus-based decision making process as unduly cumbersome and inefficient when it comes to making complex decisions concerning energy,¹¹⁹ the ejido structure offers a surprising opportunity for community-based energy development that mirrors the emerging community energy development models gaining acceptance in the United States.¹²⁰

The ejido is well positioned to implement emerging community energy models. As Hannah J. Wiseman and Sara C. Bronin describe, “community-scale” energy is energy “managed, or the generation project must at least be instigated by, a community: an organized group of residents and/or business owners” who are “involved in some of the stages of land use planning, acquisition, and installation of renewable equipment, maintenance and operation of this equipment, and the sale of energy—either electricity or heat—from it.”¹²¹ Under their analysis community-scale energy is also small, “roughly 50 kilowatts to one megawatt: substantially less generation than utility-scale installations.”¹²² Also, the footprint of the energy development is limited to several acres and, finally, the physical power source must be connected to a central power distribution “node” and to “individual end users.”¹²³ The authors envision that a set of solar panels or small to medium sized wind turbines installed in separate locations connected to a central node, or a set of solar panels or small wind turbines located in a centralized generation location or common area such as a park would fit within this model of community-scale energy.

The ejido is well suited for this type of project development, as the ejido itself refers to both the system of land tenure in Mexico and the decision-making structure with respect to the land. The land tenure system in indigenous communities in Mexico does not easily accommodate private investment in energy projects;

117. William D. Signet, *Grading a Revolution: 100 Years of Mexican Land Reform*, 16 L. & BUS. REV. AM. 481, 515 (2010).

118. Steven E. Hendrix, *Property Law Innovation in Latin America with Recommendations*, 18 B.C. INT'L & COMP. L. REV. 1, 29 n.220 (1995).

119. See, e.g., Cesar Rodriguez-Garavito, *Ethnicity.gov: Global Governance, Indigenous Peoples, and the Right to Prior Consultation in Social Minefields*, 18 IND. J. GLOBAL LEGAL STUD. 263 (2011) (discussing the iterative decision-making process surrounding consultations with communities in Colombia).

120. See *Community Solar*, National Renewable Energy Laboratory, http://www.nrel.gov/tech_deployment/state_local_governments/community-solar.html (“As of April 2015, 13 states and Washington D.C. have enacted policies that support community solar. Shared solar projects are located in 25 states, plus Washington D.C., and represent 172 MW of installed capacity.”) (last updated Oct. 7, 2015).

121. Hannah J. Wiseman and Sara C. Bronin, *Community-Scale Renewable Energy*, 4 SAN DIEGO J. CLIMATE & ENERGY L. 165, 168 (2012–13).

122. *Id.*

123. *Id.* at 169.

however, the ejido provides a ready-made infrastructure for consensus-based decisions regarding community energy development. Further, common space is abundant, as the land is owned in common and any decisions related to the common space would be subject to collective decision-making. Under an ejido-led approach to energy development activities, the ejido would be kept intact because land would not necessarily change hands or be alienated in any way, and the benefits and burdens of the energy development would be spread equitably across the entire ejido. This approach would preserve the traditional land ownership structure and allow community members to collectively decide on the highest, best use for community-held property. It would also reflect the key energy justice principles of energy democracy and environmental justice.

C. Community-Led Development

A community-led approach to energy development would also promote climate justice and be consistent with the country's existing energy, land, and environmental laws. Community-led development refers to energy development that is planned, financed, and developed by a community. In this type of project development, the energy is sited near the community and scaled to meet the community's energy needs. This decentralized form of energy generation could be completely localized, in the form of a microgrid, or be connected to the larger grid operated by CENACE. The development would match the community's needs and render the community more resilient in the face of storms that could devastate a centralized grid system.

Under the new Electric Industry Law, the energy regulatory commission (CRE) will issue permits to generators, or suppliers, eligible to sell to retail customers and the wholesale market.¹²⁴ CENACE, the new independent system operator, will manage non-discriminatory access to the electric grid.¹²⁵ As to transmission and distribution, CFE, the former utility, will be able to contract with private entities for this role, which is still reserved for the state.¹²⁶ The initial reforms focus on the inclusion of qualified customers, large consumers of electricity who will be eligible to participate in the wholesale electricity market; and qualified suppliers of electricity to the wholesale market.¹²⁷ At the outset, CFE will retain its ability to sell to basic retail customers (e.g. individual homes) with the expectation that the market will expand to allow for greater competition.¹²⁸

124. MAYER BROWN, *Analysis of Mexico's New Electric Industry Law 2*, https://www.mayerbrown.com/files/Publication/15cb6f04-748b-4836-a607-26c65997c1c1/Presentation/PublicationAttachment/0f38ad29-4abf-442b-ae9f-319d68469310/UPDATE-AnalysisElectricityLaw_0814.pdf (Aug. 14, 2014).

125. *Id.*

126. *Id.*

127. Alejandro Ibarra-Yunez, *Energy Reform in Mexico: Imperfect Unbundling in the Electricity Sector*, 35 UTIL. POL'Y 19, 23 (2015) (noting that qualified users are "facilities with capacity larger than 3 MW during the first year of the law's enactment," but such threshold will eventually be lowered to 1 MW at the end of year three of the reforms).

128. DELOITTE, *Mexico's Utility Reform Investment Opportunities in an Emerging Market 2-4*, <http://www2.deloitte.com/content/dam/Deloitte/us/Documents/energy-resources/us-er-mexicos-utility-reform-investment-opportunities-in-an-emerging-market.pdf> (2015).

This legal framework provides a potential opening for community-scale energy development, given that the grid infrastructure in Mexico is relatively sparse¹²⁹ and positioned for greater growth to electrify regions experiencing energy poverty.¹³⁰ As the market evolves, communities might seek participation in the wholesale electricity market as qualified suppliers eligible to participate in the broader market. More likely, however, communities might seek assistance from CRE and CFE, respectively, to qualify as a supplier under the new regulatory framework to provide electricity to retail customers. Communities would work with the regulatory agency and incumbent utility develop proper distributed generation protocols and create a small-scale distribution network within an ejido. This type of approach to new energy generation in areas experiencing energy poverty runs counter to the traditional, centralized method of generation and distribution, but is consistent with an energy justice approach to energy development.

The road to energy justice in Mexico will not be easy, but a pathway already exists. The following section illuminates potential barriers to implementing the recommendations outlined above.

D. Barriers to Implementation

1. Shifting the Discourse of Oil and Gas Exploration

The first, and most obvious, barrier to implementing a comprehensive energy justice framework to the energy reforms is the allure of oil and gas exploration. The energy reforms were specifically designed to allow for broader private exploitation of oil and gas resources in the country and the distribution of electricity produced by such activities. Despite the current extensive wind energy development taking place in Oaxaca, the discourse shaping the reforms is oriented toward oil and gas development. This narrative should be subverted in recognition of the current and future strain that the country faces from climate change, as well as the country's commitments at the Twenty-First meeting of the Conference of the Parties under the United Nations Framework Convention on Climate Change in Paris.

2. Private Privilege to Public Power

Communities, as a rule, lack the financial and human resource capacity to develop large projects. Indeed, the basis of our global economy—neoliberalism—relies on private actors for development activities rather than communities empowered to engage in place-based development projects. The embedded efficiencies, expertise, and access to low-cost capital that private entities bring to development place communities at a disadvantage. Fortunately, these disadvantages are not insurmountable. For example, the Mexican government could enact additional reforms that provide explicit requirements to require CFE to broaden markets to increase citizen participation. This approach would be consistent with recent energy reform efforts underway in the American state of New York. In that

129. Ibarra-Yunez, *supra* note 127, at 21 (noting the “sparse Mexican transmission grid” in contrast with the “depth and width of US grids”).

130. *Id.* at 26 (discussing Mexico's need to expand its electricity infrastructure).

jurisdiction, pursuant to the Renewing the Energy Vision regulatory docket concerning community distributed energy development, the state utility regulatory agency ordered that 20 percent of the customers in demonstration projects developed by utilities be low-income customers of the utility.¹³¹

The government could also set aside additional funds within the Mexican Fund of Petroleum for Stabilization of Development to provide for low-cost access to capital for ejidos. This capital could provide critical seed money for communities to procure small or medium-sized wind turbines or solar panels to be placed on communal land. Finally, the government could also provide training and capacity building workshops to community members who are willing to engage developers in building community-scale development projects. This training could have a multiplying effect, as neighboring communities receive training and advice concerning best practices from those who have undertaken community energy development projects.

3. Lack of Political Will

President Nieto has made the energy reforms the centerpiece of his administration. The reform is structured to open markets for oil and gas exploration and exploit the country's existing reserves. Changing this reform narrative will require persistent reference to the parallel climate change legislation the country has enacted, which carries substantial weight in the international court of opinion. Advocates and indigenous communities must also tirelessly reaffirm the rights of indigenous peoples enshrined in domestic and international law. Further, communities might seize this unprecedented moment of energy reform to relentlessly agitate for community-based energy development to alleviate energy poverty.¹³² Once a community demonstrates a successful pilot project, perhaps other communities will follow to press for greater subsidies and government support for such programs.

CONCLUSION

This article provides one view of the current energy revolution underway in Mexico, arguing that rather than viewing the reforms as a part of the neoliberal development narrative, the reforms can be viewed as an unprecedented opportunity for community-led energy generation. Such generation would be consistent with the ejido system of land tenure, render communities more resilient to climate change impacts, promote environmental justice by allowing communities to have a say over the siting and scale of their energy, and foster energy justice by allowing for meaningful participation in energy development. Indeed, Mexico's energy reform efforts could provide a blueprint for other developing countries to leapfrog the traditional system of centralized energy generation and electricity distribution to a more modern, resilient system rooted in community participation and energy justice.

131. State of New York Public Service Commission, Order Establishing a Community Distributed Generation Program and Making Other Findings, Case 15-E-0082, Filing No. 31, at 22, <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={76520435-25ED-4B84-8477-6433CE88DA86}> (July 17, 2015).

132. See Guruswamy, *supra* note 72 (discussing global energy poverty).