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FROM EXPLOITATION TO EQUITY: BUILDING NATIVE-OWNED RENEWABLE ENERGY GENERATION IN INDIAN COUNTRY

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ABSTRACT

Indian country contains abundant renewable energy resources, and harnessing such resources is vitally important for national climate change mitigation efforts. Shifting the electric grid towards wind and solar generation also carries local environmental and health benefits, increases energy independence, and serves national security interests. For willing tribes, renewable energy development offers an opportunity for job growth and income base expansion. But if that development is to serve all parties—tribes, states, and the nation—then the current policy framework must change. If it does not change, policymakers risk continuing the long history of exploitative resource development on reservations.

This Article examines how legal structures impede utility-scale renewable energy development in Indian country and limit tribal self-determination. At the beginning of the Obama Administration, with increased national interest in climate change, commentators seized upon the potential of renewable energy to increase tribal sovereignty, improve Native economies, and provide greater access to electricity.[1] Following years of false starts, legal scholars asked why the clean energy revolution

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[1] Racheal M. White Hawk, *Community-scale Solar: Watt's in it for Indian Country?*, 40 ENVIRONS 1 (2016); Crystal D. Masterson, *Wind-Energy Ventures in Indian Country: Fashioning a Functional Paradigm*, 34 AM. INDIAN L. REV. 317 (2009). *See, e.g.*, Ryan David Dreveskracht, *Native Nation Economic Development Via the Implementation of Solar Projects: How to Make it Work*, 68 WASH. & LEE L. REV. 27 (2011); Kathleen R. Unger, *Change is in the Wind: Self-Determination and Wind Power Through Tribal Energy Resource Agreements*, 43 LOY. L.A. L. REV. 329 (2009).

was passing by Indian country and identified obstacles that slowed the growth of renewables.[2] Despite such barriers, by the end of 2017, a few large projects were operational. This Article examines how those projects succeeded within the current framework. The working installations serve as a rebuke to decades of abusive resource extraction arrangements and dirty fossil fuel power plants, which have produced severe health impacts and environmental degradation on Indian lands. But they also show how the existing legal and policy frameworks compel tribes committed to renewable energy development into certain arrangements, which then place constraints upon tribal sovereignty and limit the potential benefits to tribes.

Part I explains U.S. electricity law and renewable energy potential in Indian country. Part II addresses how the current legal and policy frameworks underpinning projects impede the widespread adoption of renewable energy in Indian country. Part III covers recent successes and failures, in order to draw functional lessons for parties interested in pursuing wind and solar projects within the existing framework. Part IV recommends policy and legal reforms that would increase tribal ownership of renewable energy projects while benefiting tribes, states, and the country as a whole. In particular, recommended reforms include providing mechanisms that promote self-determination through tribal project ownership, increasing federal financial support mechanisms, changes to current electricity regulations, and amending federal and state tax regimes to avoid stifling development in Indian country.

[2] Elizabeth Ann Kronk Warner, *Tribal Renewable Energy Development Under the HEARTH Act: An Independently Rational, but Collectively Deficient, Option*, 55 ARIZ. L. REV. 1031, 1031 (2013) ("[L]arge alternative and renewable energy projects are virtually absent from Indian country. This article explores why such little development is happening despite the great potential for alternative and renewable energy development in Indian country and strong tribal interest in such development.").

I. WIND AND SOLAR ENERGY DEVELOPMENT IS A POSITIVE OPPORTUNITY FOR CERTAIN TRIBES

Wind and solar development may be a valuable opportunity for certain tribes, particularly when compared against traditional fossil fuel extraction and energy generation. Indeed, certain Indian nations are already transitioning from burning fossil fuels to producing cleaner, sustainable energy. Due to the distribution of reservations across the United States, Indian country as a whole is rich in largely untapped renewable resources, presenting willing tribes with an opening for economic development and improved health and environmental outcomes. But large wind and solar projects are not isolated entities; a complex thicket of federal and state electricity laws largely determine project feasibility. Tribes making the transition to wind and solar must successfully navigate the modern electricity industry and the legal structures at the federal and state levels that shape it. Because of legal and policy hurdles, very few tribes have been able to do so. This Article advocates for the changes that would facilitate more utility-scale wind and solar installations in Indian country. If the recommended reforms were made, increasing renewable energy generation on reservations would strengthen tribal self-determination while simultaneously serving state policy goals and national security interests.

The purpose of Part I is to demonstrate (1) the potential for renewable energy development; and (2) how that development aligns with interests at the tribal, state, and federal levels. Part I begins with a description of the budding transition to clean energy in Indian country. It then presents the remarkable degree of overlap between high wind and solar energy potential regions and the location of reservations. Next is a description of the basic structure of electricity law, in which any large wind or solar project is embedded. The final subsection explains why increased renewable generation on Indian lands would serve native, state, and federal interests.

A. The Transition Is Beginning

The story of resource exploitation in Indian country is, to put it bluntly, not a happy one. Many tribes rely upon incomes derived from, and employment provided by, extractive industries such as large mines and coal plants.[3] In addition to income and employment, these industries bring with them severe and well-recognized health and environmental problems.[4] While tribal lands are rich in fossil fuel and mineral resources, they also carry vast wind and solar energy potential. Compared with fossil plants, renewable generators create significantly fewer negative health and environmental impacts,[5] and some tribes are already turning to solar and wind energy development as a deliberate, strategic alternative to resource extraction and dirty generation.[6]

Two of the three case studies described in Part III were built on lands held by tribes with a long history of extraction and environmental degradation. First, for the Moapa Band of Paiutes, the Reid Gardner Generating Station defines that history. In 2017, the Reid Gardner, a 557 Megawatt ("MW") coal fired power plant immediately adjacent to the Moapa River Indian Reservation, shut down after fifty-two years of operation.[7] Among other toxins, the Reid Gardner released coal ash, which drifted onto the reservation, contributing to unusually high lung, heart, and thyroid disease rates among the Moapa Band of Paiutes.[8] Yet, also in 2017, a 250 MW solar plant sitting on tribal land commenced operation.[9] Many tribal members consider the new solar plant as a positive

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[3] James Rainey, *Lighting the West, dividing a tribe*, NBC NEWS (Dec. 18, 2017), https://www.nbcnews.com/specials/navajo-coal [https://perma.cc/F4F7-X6BW].
[4] *Id.* (discussing the environmental issues the Navajo plant created).
[5] *See* U.S. ENVTL. PROT. AGENCY, THE MULTIPLE BENEFITS OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, https://www.epa.gov/sites/production/files/2018-07/documents/mbg_1_multiplebenefits.pdf [https://perma.cc/GE3S-MAVM] (last visited Jan. 11, 2019).
[6] *See* discussion *infra* Part III.
[7] NV ENERGY, *NV Energy Takes Final Unit of Reid Gardner Generating Station Offline*, PR NEWSWIRE (Mar. 16, 2017, 5:29 PM), https://www.prnewswire.com/news-releases/nv-energy-takes-final-unit-of-reid-gardner-generating-station-offline-300425227.html [https://perma.cc/JSW7-Y92B].
[8] *An Ill Wind: The Secret Threat of Coal Ash*, EARTHJUSTICE, https://earthjustice.org/video/an-ill-wind-the-secret-threat-of-coal-ash [https://perma.cc/5C3X-YGA2] (last visited Jan. 11, 2019).
[9] *First Solar Begins Operation of 250 Megawatt Moapa Southern Paiute Solar Project*, FIRST SOLAR (Mar. 17, 2017), http://investor.firstsolar.com/news-releases/news-release-details/first-solar-begins-operation-250-megawatt-moapa-southern-paiute [https://perma.cc/BU47-N9AT].

counterpoint, or a rebuke to, the history of local energy pollution from the Reid Gardner.[10]

Navajo Nation's analogous coal plant sits on tribal lands, making the tribe's relationship with fossil fuel interests more complicated than for the Moapa Band of Paiutes. The Navajo Generating Station, a 2,250 MW coal plant dating from 1971 and scheduled to close in 2019, sits on tribal land, yet pays Arizona state property taxes far in excess of the lease, permit fees, and payments-in-lieu-of-taxes the tribe receives.[11] The Navajo Generating Station ("NGS") causes severe damage to local health outcomes and the neighboring environment.[12] In terms of climate change, annual CO_2 emissions from NGS are equivalent to about 950,000 cars.[13] In 2017, NGS annually emitted 5,015 tons of SO_2, which causes acid rain and degrades into other greenhouse gasses far more potent than CO_2, as well as approximately 14,560 tons of NO_x, which creates particulate matter and ground-level ozone.[14] Yet, NGS has long been a reliable source of high-paying jobs for tribal members and income for the Navajo and Hopi governments.[15] With its closure, Navajo Nation is looking towards renewables as an alternative. In 2017, the 27 MW Kayenta Solar Project started delivering power to the grid.[16] Although Kayenta Solar is only a small fraction of NGS's capacity, the tribe has plans to expand its solar developments, and has already signed an agreement with the power purchaser

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[10] Telephone Interview with George Burdette, Director of Project Finance, First Solar (Feb. 1, 2018) [hereinafter Telephone Interview with George Burdette].

[11] *Navajo Generating Station*, U.S. DEP'T OF THE INTERIOR BUREAU OF RECLAMATION (May 1, 2018), https://www.usbr.gov/ngs/ [https://perma.cc/S7LH-QDR5].

[12] Michael Johnson, *Navajo man tells of health impacts from coal mines, NGS*, WHITE MOUNTAIN INDEPENDENT (May 30, 2018), https://www.wmicentral.com/news/latest_news/navajo-man-tells-of-health-impacts-from-coal-mine-ngs/article_0f374446-28a4-50bb-b97b-79de11ad9728.html [https://perma.cc/CBB6-Z49X].

[13] *See* Letter from Kenneth J. Frazier, Plant Manager, to Dr. Donald Benn, Executive Director, Navajo Nation Environmental Protection Agency, and Director of Enforcement Division, U.S. EPA Region IX (Apr. 25, 2018), https://www.srpnet.com/about/stations/ngs/pdfx/NGS-Annual-Emission-Report.pdf [https://perma.cc/2HPU-FJC3].

[14] *See id.*; IPCC, CLIMATE CHANGE 2014: SYNTHESIS REPORT 2 (2015), http://epic.awi.de/37530/1/IPCC_AR5_SYR_Final.pdf [https://perma.cc/MK4N-B5BY] (describing the connection between greenhouse gases and climate change).

[15] Rainey, *supra* note 3.

[16] Melissa Heffernan, *Navajo Tribal Utility Authority opens new solar plant*, DAILY WILDCAT (Sept. 2, 2017), http://www.wildcat.arizona.edu/article/2017/09/navajo-tribal-utility-authority-opens-new-solar-plant [https://perma.cc/G68K-MJF2] (last updated Sept. 5, 2017).

to build hundreds more MWs of solar on lands just sixty miles east of the coal plant.[17]

The Navajo and Moapa cases show the latent promise, but also the potential for disruption, from shifting energy generation towards renewables. Indian nations serve as microcosms of the broader transition necessary to avert the most severe climate change impacts. But if harnessed appropriately, wind and solar energy could provide a valuable opportunity for tribes while simultaneously serving state and national health, environmental, and climate change policies.

B. Indian Lands Carry Significant, and Largely Untapped, Renewable Energy Resources

Unlike fossil plants, wind and solar generators must be sited where the fuel source is most abundant: windy and sunny places. Indian country contains disproportionately abundant solar and wind resources.[18] These resources allow tribes an economic development opportunity in constructing and operating utility scale solar and wind farms.[19]

The best terrestrial wind energy in the U.S. is across the upper Midwest and the best solar energy resources are in the Southwest.[20] It would be difficult to overstate how well Indian lands overlap with these resources; the correlation is most striking when expressed through maps, contained below. Figure 1 shows the potential wind capacity map from the National Renewable Energy Laboratory for the Department of Energy. Figure 2 shows the technical potential, which is far greater than the economically exploitable potential, of wind on reservations across the Midwest. Figure 3 shows the utility-scale solar photovoltaic ("PV") energy potential, and Figure 4 shows the technical potential for solar PV on reservations.

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[17] Native News Online Staff, *Kayenta Solar Farm to Expand: Commitment between NTUA and SRP to Develop Renewable Energy Projects on Navajo Nation,* NATIVE NEWS ONLINE (Jan. 27, 2018), https://nativenewsonline.net/currents/kayenta-solar-farm-expand-commitment-ntua-srp-develop-renewable-energy-projects-navajo-nation/ [https://perma.cc/2XW2-KWZ9].

[18] Douglas C. MacCourt, *Renewable Energy Development in Indian Country: A Handbook for Tribes*, ATERWYNNE LLP, 1–2 (2010), http://www.nrel.gov/docs/fy10osti/48078.pdf [https://perma.cc/F4UU-MJ8Y] (last visited Jan. 11, 2019).

[19] *Id.*

[20] *See* Umair Irfan & Javier Zarracina, *4 maps that show who's being left behind in America's wind-power boom*, VOX (June 16, 2018, 11:28 AM), https://www.vox.com/energy-and-environment/2018/5/2/17290880/wind-power-renewable-energy-maps [https://perma.cc/7C3E-A5UA]; *Solar Energy Potential*, U.S. DEP'T OF ENERGY, https://www.energy.gov/maps/solar-energy-potential [https://perma.cc/P37E-4NMY] (last visited Jan. 11, 2019).

Figure 1: Land-Based Potential Wind Capacity[21]

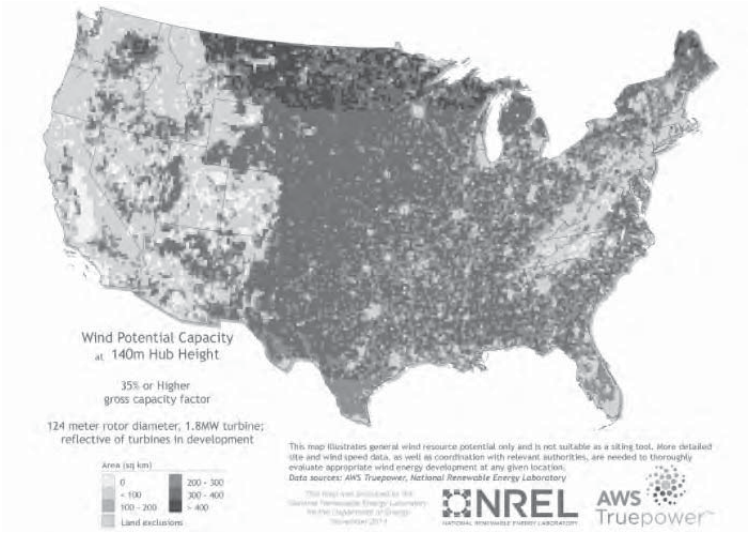

Figure 2: Technical Wind Energy Potential on Tribal Lands[22]

[21] OFFICE OF ENERGY EFFICIENCY & RENEWABLE ENERGY, *Wind Resource Assessment and Characterization*, U.S. DEP'T OF ENERGY, https://energy.gov/eere/wind/wind-resource-assessment-and-characterization [https://perma.cc/LEA9-CLPR] (last visited Jan. 11, 2019).

[22] OFFICE OF INDIAN ENERGY, *Developing Clean Energy Projects on Tribal Lands*, U.S. DEP'T OF ENERGY, https://www.nrel.gov/docs/fy13osti/57748.pdf [https://perma.cc/84VH-7U24] (last visited Jan. 11, 2019).

Figure 3: Utility-Scale Solar Photovoltaic (PV) Energy Potential[23]

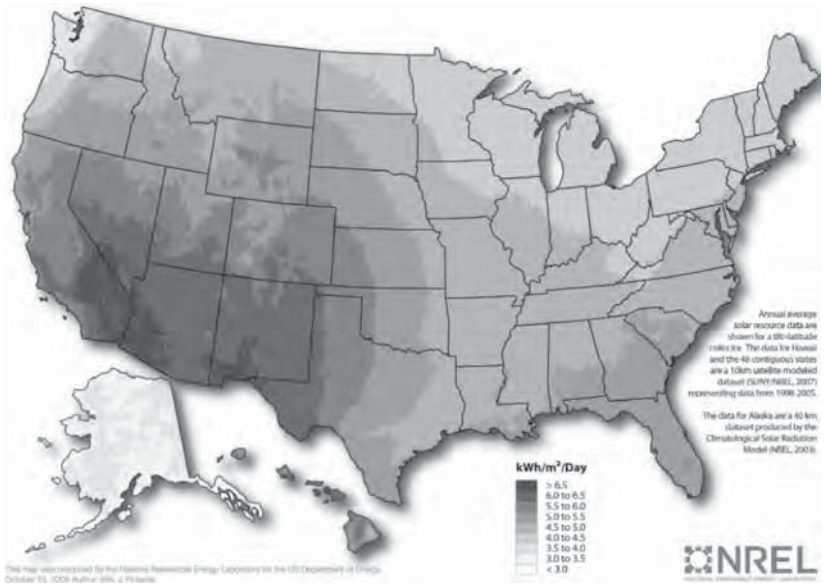

Figure 4: Technical Utility-Scale PV Generation Potential on Tribal Lands[24]

[23] *Solar Maps,* NATIONAL RENEWABLE ENERGY LABORATORY, https://www.nrel.gov/gis/solar.html [https://perma.cc/68JJ-JDMD] (last visited Nov. 25, 2018).
[24] OFFICE OF INDIAN ENERGY, *supra* note 22.

Clearly, the highest potential wind and solar resources overlap strikingly with Indian country. Indeed, reservations contain about 535 billion kilowatt-hours a year ("kWh/y") of technical wind energy potential and 17,600 billion kWh/y of solar energy potential,[25] which dwarfs the total amount of U.S. electricity generation. According to the Bureau of Indian Affairs, energy potential in Indian country accounts for approximately 10% of all U.S. energy resources.[26] The Energy Information Administration has identified nearly one hundred reservations that could build economical wind energy projects.[27] Legal writers debate whether the Great Plains reservations could sustain one third or one half of U.S. electrical capacity,[28] but none debate the resource potential is enormous.

Tribes could harness the wind and solar resources by constructing utility-scale renewable energy installations. Over the last fifteen years, small and distributed wind and solar projects have become fairly common in Indian country, often built with financing and/or technical assistance from the Department of Energy and the Department of Agriculture.[29] These projects are vitally important in addressing the severe energy poverty problem.[30] As in much of the unelectrified world, small solar and wind projects can help improve energy access in disperse, rural Indian lands, especially when combined with energy storage technologies. However, the barriers to scaling up, detailed in Part II, are significant and only a couple large projects are currently operating.[31] This Article solely focuses

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[25] MacCourt, *supra* note 18.

[26] Heather J. Tanana & John C. Ruple, *Energy Development in Indian Country: Working within the Realm of Indian Law and Moving towards Collaboration*, 32 UTAH ENVTL. L. REV. 1, 2 (2012).

[27] ENERGY INFO. ADMIN., *Energy Consumption and Renewable Energy Development Potential on Indian Lands* 28, U.S. DEP'T OF ENERGY (2000), https://www.energy.gov/sites/prod/files/2017/06/f34/EIA2000.pdf [https://perma.cc/7GPN-NG3Z].

[28] *Compare* Unger, *supra* note 1, at 334 *with* Masterson, *supra* note 1, at 327.

[29] *See, e.g.*, Nicholas M. Ravotti, *Access to Energy in Indian Country: The Difficulties of Self-Determination in Renewable Energy Development*, 41 AM. INDIAN L. REV. 279, 314–15 (2017). *See also* Kevin L. Shaw & Richard D. Deutsch, *Wind Power and Other Renewable Energy Projects: The New Wave of Power Project Development on Indian Lands*, ROCKY MTN. MIN. L. FOUND. SPECIAL ED. 10 (Nov. 2005).

[30] Ravotti, *supra* note 29, at 314–15. *See also* Jessica A. R. Hamilton, *Finding New Power in the Wind, the Earth, and the Sun: A Survey of the Regulation of Alternative Energy Generated on American Indian Reservations in the United States and First Nation Reserves in Canada*, 44 CONN. L. REV. 1383, 1385 (2012) (describing the wind, solar, biomass, and hydropower potential on American Indian and Canadian First Nations' lands).

[31] For example, the Rosebud Sioux tribe built a widely publicized 750 kilowatt (kW) wind turbine with support from the Department of Agriculture's Rural Utility Service and the Department of Energy in 2003. Shaw & Deutsch, *supra* note 29, at 20. For an idea of the scale involved, a diesel generator with the same capacity can now be purchased online for

on larger projects that would, at least in the foreseeable future, necessarily interconnect with the broader electrical grid. Utility-scale projects are orders of magnitude more complicated than small, distributed energy systems. But large wind and solar projects can also be a valuable tool for tribes, as they can derive benefits both as sovereigns and as project owners. Wind and solar installations can also provide consistent revenue streams, increase tribal institutional capacity, mitigate climate change's impacts on Indian lands, and generate local employment opportunities.[32]

When it comes to supporting utility-scale renewable energy in Indian country, tribal, state, and national interests align: all would benefit from tribal renewable projects playing a larger role in the national transition to clean energy. However, although the resource potential is enormous, constructing utility-scale renewable energy installations in Indian country requires an understanding of the national and state-level legal and regulatory frameworks underpinning electricity markets, as any utility-scale project will necessarily be embedded within those broader frameworks, which are complex and require expertise to successfully navigate.

C. Harvesting Wind and Solar Resources Requires an Understanding of Electricity Law, Which Is Fragmented and Complex

The following subsection is a primer on those aspects of electricity law in the United States relevant to tribes considering the construction of utility-scale wind and solar projects. A basic understanding of the overall system is essential before confronting the unique challenges for Indian country projects. To that end, this Section first provides a brief history of electricity regulation. The current system is largely the result of various path-dependencies and does not form a coherent, logical whole. Important historical steps include the emergence of federal regulation and the resulting division of jurisdictional authority in the industry between the central government and the states. The past forty years exhibit a general

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about $70,000. The tribe sought to build on its experience with the smaller project, but the tribe could not access the necessary financing or outside expertise. Thus far, larger wind systems have sputtered on the Rosebud reservation, for reasons explained *infra* Part III.

[32] Admittedly, the permanent jobs created by a large solar installation are a fraction of those created by a fossil fuel plant such as the Navajo Generating Station. When comparing a fossil fuel project to a renewable energy project, it is important for policy makers, including tribal leaders, to consider all costs and benefits incurred. Explicitly measuring all environmental, health, cultural, and economic values helps drive the decision-making process. In almost all cases, a comparative decrease in jobs will be significantly outweighed by the increased production on lands that would be otherwise poisoned by fossil plants and the improved health outcomes among locals.

trend toward a more competitive industry in electricity generation, in which the few tribal utility-scale projects already participate. However, this trend is not uniform, and important variations exist between states. Next, a description of the primary federal and state incentives for renewable generators follows, and lastly, an introduction to the challenges for tribes attempting to build wind and solar generators under the various existent regulatory models. While this subsection describes the thickly regulated arena in which tribal utility-scale generators operate, the next subsection addresses whether or not tribes *should* participate in the industry.

1. A Brief History of Electricity Law; the Emergence of a Competitive Market in Generation

The U.S. does not have a single electricity law. A complex tapestry of governing bodies at the tribal, municipal, state, regional, and national levels[33] regulate for-profit, non-profit, and governmental entities that create, transport, and deliver electric power to end-users. Often described as the "largest interconnected machine on Earth," the electrical grid is composed of approximately 200,000 miles of high-voltage transmission lines and 5.5 million miles of smaller distribution lines drawing power from thousands of electric power generators, including coal-fired power plants, dams, and wind systems.[34] The current electrical system arose organically over more than a century, developing in a "reactionary [manner] rather than [being] the result of long-term strategic planning."[35] The central challenge in running the system is perfectly matching electricity supply to demand at all times. Most expect the largest machine on Earth to increase in complexity as more consumers generate their own power from rooftop installations, battery-powered vehicles become commonplace, and minigrids proliferate.[36] Although participation in the electricity

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[33] The listing of regulatory bodies here is not intended to imply that tribes as governing entities occupy any particular place in an ordered hierarchy.

[34] *See* Jennifer Weeks, *U.S. Electrical Grid Undergoes Massive Transition to Connect to Renewables*, SCIENTIFIC AMERICAN (Apr. 28, 2010), https://www.scientificamerican.com/article/what-is-the-smart-grid/ [https://perma.cc/J3BX-LQVV] (last visited Jan. 11, 2019).

[35] Ravotti, *supra* note 29, at 283.

[36] Minigrids can help sustain electrical power through disturbances. Some may be "islanded" and disconnected from the broader infrastructure remotely in order to protect against cyber attacks or downed power lines and are often used for military installations, hospitals, and other institutions for which consistent power supply is mission-critical. *See Installing solar to combat national security risks in the power grid*, SCIENCE DAILY (May 8, 2010), https://www.sciencedaily.com/releases/2017/05/170508112414.htm [https://perma.cc/HCV7-KZBZ].

markets does not require an in-depth understanding of the entire system, basic legal aspects, including jurisdictional authority, are important to understand for tribal leaders seeking to construct large projects.

Actors in the electricity industry have long been subject to regulation as public utilities. Public utilities exhibit deep governmental involvement in, among other things, setting prices and controlling entry and exit.[37] In general, the electric power system is broken down into generation, transmission, and distribution functions.[38] Power plants generate power, transmission lines carry power, and distribution lines deliver that power to end customers.[39] Historically, the generation, transmission, and distribution functions were bundled within a single, vertically integrated utility and the system was considered a "natural monopoly," subject to public utility laws developed largely from late nineteenth century railroad regulations.[40] Electric utilities tended to be small and serve single cities or even portions of a given city. However, corruption and inconsistent decision-making drove regulation from the municipal level upward to state regulatory bodies known as public utility commissions ("PUCs") or public service commissions ("PSCs").[41] Under the traditional state regime, utilities considering expansion acquired from the public commission a "certificate of convenience and necessity," proving a need for more generation.[42] Some states provided utilities with a monopoly franchise, or an exclusive right to sell within a geographic area.[43] All commissions mandated that utilities meet service standards and deliver power to all customers at prices determined by tightly regulated and highly contested rate setting procedures.[44]

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[37] *See* DAVID E. MCNABB, PUBLIC UTILITIES, SECOND EDITION: OLD PROBLEMS, NEW CHALLENGES 133–46 (2016).

[38] For a complete history of electricity regulation in the United States, see ENERGY, ECONOMICS, AND THE ENVIRONMENT: CASES AND MATERIALS (Joel B. Eisen et al. eds., 4th ed. (2015)).

[39] U.S. ENERGY INFO. ADMIN., *Electricity Explained: How Electricity is Delivered to Consumers*, U.S. DEP'T OF ENERGY, https://www.eia.gov/energyexplained/index.php?page=electricity_delivery [https://perma.cc/Z7QA-PTKB] (last updated Aug. 31, 2018).

[40] *See* Jim Lazar, *Energy Regulation in the U.S.: A Guide*, REGULATORY ASSISTANCE PROJECT 8–13 (2016), http://www.raponline.org/wp-content/uploads/2016/07/rap-lazar-electricity-regulation-US-june-2016.pdf [https://perma.cc/N8Y8-YM5S].

[41] *See* Werner Troesken, *Regime Change and Corruption A History of Public Utility Regulation*, *in* CORRUPTION AND REFORM: LESSONS FROM AMERICA'S ECONOMIC HISTORY 259–63 (Edward L. Glaeser & Claudia Goldin eds., 2006).

[42] William K. Jones, *Origins of the Certificate of Public Convenience and Necessity: Developments in the States, 1870–1920*, 79 U. COLO. L. REV. 426, 427 (1979).

[43] *See* Lazar, *supra* note 40, at 6.

[44] *See id.* at 47–60.

As the industry grew, consumers inevitably found it cheaper to buy from utilities generating power in adjacent states, which drove the need for federal regulation under the commerce clause. In the foundational case of *Public Utilities Comm. of Rhode Island v. Attleboro Steam & Electric Co.*, 273 U.S. 83 (1927) a utility in Rhode Island and a utility in Massachusetts entered into an agreement whereby the Rhode Island utility would sell power to the Massachusetts utility so the Massachusetts utility could lower its capital costs by shuttering one of its generators near the border.[45] After the generator was closed, the Rhode Island utility appealed to the Rhode Island Commission to raise rates for the Massachusetts utility.[46] The Rhode Island Commission considered and approved the rate increase.[47] In response, the Massachusetts utility promptly brought suit, and in the resulting case the Supreme Court considered whether the Rhode Island Commission's order approving the rates impermissibly regulated the sale of electric power in interstate commerce.[48] The court held neither state could regulate the sale, as the interstate transaction was "essentially national in character," and the court invited Congress to remedy the "Attleboro gap."[49] Congress responded with passage of the Federal Power Act, which created the Federal Power Commission, whose regulatory progeny is now the Federal Energy Regulatory Commission.[50]

Over time, the jurisdictional line between federal and state regulation has been contested and has (somewhat) solidified. The allocation of authority is more complicated today than it was in 1927, but the basic line is as follows: the Federal Energy Regulatory Commission has jurisdiction over wholesale electric energy sales in interstate commerce[51] and transmission, and its authority attaches so long as the energy is "bound for interstate commerce."[52] On the other hand, states continue to regulate retail sales, distribution, generation facilities, and manage siting for transmission lines. States also have authority over resource needs, meaning a utility that requires a new generation facility often must still apply to

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[45] Public Utilities Comm. Of Rhode Island v. Attleboro Steam & Elect. Co., 273 U.S. 83, 84 (1927).
[46] *Id.* at 85.
[47] *Id.* at 85–86.
[48] *Id.* at 86.
[49] *Id.* at 90.
[50] Federal Power Act, 16 U.S.C. § 792 (2018).
[51] *See* 16 U.S.C. § 824 (2018).
[52] Ravotti, *supra* note 29, at 287.

the state public utility commission for the seemingly anachronistic "certificate of public convenience and necessity."[53] Jurisdictional authority and regulatory requirements vary between utility and non-utility participants, which play an increasingly significant role, especially in providing the generation function. Further, municipals, public authorities, co-operatives, and tribal utilities also provide various electricity services subject to tribal, federal, and state regulations.[54]

The emergence of competition, particularly in providing electric power generation, is the most significant development in the industry over the last century. Following the oil crises of the 1970s, the United States encouraged developing an increasingly disperse and diverse fuel base for electric power, in order to protect against shocks and reduce prices for wholesale electricity through market forces.[55] At the national level, the Federal Energy Regulatory Commission pursued this shift through "competitive restructuring," which is predicated on the insight that the generation and sale of electricity, unlike its transmission and distribution, is not a natural monopoly.[56] Creating a market in the generation function requires unbundling the price for delivery from the price for generation. With the dual-price system, one can create an environment for competition in sales, while maintaining traditional rate-making regulation for delivery. With the aim of driving competition in the generation function and diversifying the national fuel mix, Congress passed the Public Utility Regulatory Policies Act in 1978, providing the Federal Energy Regulatory Commission with the authority to mandate utilities purchase from Qualifying Facilities at "avoided cost" rates, set by states.[57] Essentially, Qualifying Facilities are market entrants, or generating plants not built, operated, and owned by the electric utility. The Public Utility Regulatory Policies Act allows Qualifying Facilities to sell power into existent utilities' networks and forces the utilities to accept that power so long as the price is less than what the utility would have spent to build its own generator.[58]

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[53] *See* Jones, *supra* note 42, at 426.
[54] For further information on tribal electric utilities, see MacCourt, *supra* note 18.
[55] *See* Ravotti, *supra* note 29, at 289.
[56] *See* David B. Spence, *The Politics of Electricity Restructuring: Theory v. Practice*, 40 WAKE FOREST L. REV. 417, 418 (2005).
[57] Public Utility Regulatory Policies Act of 1978, 16 U.S.C. 2601(2) (2018) ("PURPA"). *See also What is a Qualifying Facility?*, FED. ENERGY REG. COMM'N, https://www.ferc.gov/industries/electric/gen-info/qual-fac/what-is.asp [https://perma.cc/MSR5-DVET] (last updated Dec. 29, 2017) (describing qualified facilities under PURPA).
[58] *What Are the Benefits of QF Status?*, FED. ENERGY REG. COMM'N, https://www.ferc.gov/industries/electric/gen-info/qual-fac/benefits.asp?csrt=2205782456135362535 [https://perma.cc/V529-D8PA] (last updated Dec. 29, 2017).

The Act also exempts Qualifying Facilities from rate regulation processes utilities are otherwise subject to.[59] The Energy Policy Act of 1992 built upon the 1978 Act's drive toward a more competitive marketplace for generation by requiring open access to transmission systems, further lowering barriers to entry and breaking utility monopolies' power.[60]

However, states retain significant authority in regulating electricity and the legal structures controlling participation in the industry vary dramatically from place to place. Therefore, the processes through which utility-scale tribal projects must participate in the markets are not generalizable, but instead require deep expertise in neighboring states' energy laws. While federal policy moved towards competitive markets, many states retained traditional rate regulation of vertically integrated utilities. However, nearly all sales (outside of Texas)[61] are in the interstate marketplace and therefore, even in states with traditional rate regulation, the Public Utility Regulatory Policy Act allows for non-utilities to compete, to varying extents, in providing the generation function.[62] In other areas, the 1978 Act plays a smaller role in driving non-utilities into the sector. Decades ago, Northeastern states restructured, cutting the generation function off from utility ownership and creating a more robustly competitive marketplace for new participant generators.[63] As an alternative approach to a fixed price contract with a given utility, new generators may be economically feasible as merchant operators—selling directly into competitive wholesale electricity markets, which have developed over time on top of the bilateral contracting at issue in *Attleboro*.

Independent System Operators ("ISOs")[64] further complicate the electricity space. In large regions of the country, ISOs act as tools for effectuating Federal Energy Regulatory Commission policies over utilities

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[59] *Id.*

[60] Energy Policy Act of 1992, Pub. L. No. 486, 106 Stat. 2776.

[61] Texas has an independent power grid named ERCOT. *See Electric Power Markets: Texas (ERCOT)*, FED. ENERGY REG. COMM'N, https://www.ferc.gov/market-oversight/mkt-electric/texas.asp [https://perma.cc/Q73T-872J] (last updated December 4, 2017).

[62] *Public Utility Regulatory Policy Act (PURPA)*, UNION OF CONCERNED SCIENTISTS, https://www.ucsusa.org/clean_energy/smart-energy-solutions/strengthen-policy/public-utility-regulatory.html#.XAReVsRReUk [https://perma.cc/Z3AU-V6FD] (last visited Jan. 11, 2019).

[63] Non-utility generators are known as independent power producers.

[64] ISOs and Regional Transmission Organizations ("RTOs") coordinate, control, and monitor large portions of the electric grid. These entities run complex and ever-evolving marketplaces for varying energy services under the directives of the Federal Energy Regulatory Commission, although each ISO and RTO has unique market rules and technical requirements. Although the Commission has the power to mandate the operators implement orders, those orders often carry significant areas of flexibility. As with states, experience with one operator does not necessary translate to any others.

(which have voluntarily submitted themselves to the ISO's operational systems).[65] Those operators run competitive marketplaces in various energy services, in which all types of generators, including merchant operators, participate. The utilities that fall within an ISO's purview spread across multiple state lines. Within the domain of the operators, generators offer bids to sell wholesale power into the grid at marginal cost.[66] All generators that are delivering energy into the system receive payment equal to the cost of delivering that last marginal unit.

The landscape for tribes constructing wind and solar installations is therefore highly differentiated depending on the location of the project. For marketplaces controlled by ISOs, tribal projects may enter the market as a merchant operator, which requires convincing investors the project will attain sufficient financial returns through participating exclusively in the competitive wholesale power markets. For states outside of ISO territories, such as those with the highest solar energy potential in the Southwest, new projects depend upon forecast demand. Utilities are typically required to submit integrated resource plans to the state public utility commissions that identify generation resources necessary to meet projected demand years into the future. Each state varies, but usually a state commission considers utilities' requests for new generation, which is then acquired through bidding processes. Those bidding processes may be competitive, or they may be heavily skewed in favor of the utilities.[67] For those states, the forecasted demand binds the opportunity for new generators, and the line for prospective independent power producers, such as projects on tribal lands, may be long.[68]

When it comes to actually building the wind and solar projects, the developer must: conduct a market analysis; conduct scoping studies,

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[65] *See Electric Power Markets: National Overview*, FED. ENERGY REG. COMM'N, https:// www .ferc.gov/market-oversight/mkt-electric/overview.asp [https://perma.cc/CMD3-LRXD] (last updated Apr. 13, 2017) (providing an interactive way to learn about ISOs/RTOs in the U.S.).

[66] For the restructured states of the Northeast, interstate wholesale transactions typically occur through (1) bilateral contracting, in which utilities sign power purchase agreements with generators for a certain amount of energy at a certain rate over a certain period of time. The Federal Energy Regulatory Commission will approve the rates if they are set through a good faith arm's length negotiation and do not harm the public interest. *See* Morgan Stanley Capital Group, Inc. v. Public Util. Dist. No. 1 of Snohomish City, 554 U.S. 527, 546–48 (2008); or (2) through RTO/ISO-administered competitive wholesale markets at the marginal price.

[67] This is particularly true in the Southeast.

[68] Telephone Interview with Chip Lewis, Regional Environmental Protection Officer, Western Regional Office, Bureau of Indian Affairs (Jan. 12, 2018) [hereinafter Telephone Interview with Chip Lewis].

load and transmission studies, and engineering design studies; acquire financial commitments for construction and commissioning; and meet various other large, upfront capital requirements. For wind projects, accurate wind data, collected over several years, is a necessary precursor to determining whether the resource is sufficient for a financeable array.[69] Siting for both solar and wind is challenging, as the best solar and wind resources tend to be in rural areas far from the transmission infrastructure necessary to bring the power to market.[70]

2. Incentives for Wind and Solar

Over the last fifteen years incentives at the state and federal level have transformed wind and solar generators from an obscure novelty to the majority of new capacity on the grid.[71] Both inside and outside of Indian country, renewable installations have been historically dependent upon those incentives.[72] States encourage utility-scale wind and solar by requiring their regulated utilities to purchase a certain percentage of energy from renewable sources, whereas the primary federal incentives are tax credits and accounting mechanisms.[73]

States promote renewables via Renewable Portfolio Standards, which mandate that utilities purchase a set percentage of their power from certain sources.[74] These state law regimes usually create property

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[69] For more on the wind scoping process in Indian country, see Patrick M. Garry, Candice J. Spurlin & Derek A. Nelsen, *Wind Energy in Indian Country: A Study of the Challenges and Opportunities Facing South Dakota Tribes*, 54 S.D. L. REV. 448, 451–53 (2009). *See also* Masterson, *supra* note 1.

[70] For an argument that siting renewable power plants is more difficult for a variety of reasons, see generally Robert Kahn*, Siting Struggles, the Unique Challenge of Permitting Renewable Energy Power Plants*, 13 ELEC. J. 21 (2000).

[71] Shaw & Deutsch, *supra* note 29.

[72] *Infra* Part IV. In more and more regions of the country, solar PV and wind generation are becoming cost competitive with traditional power sources such as coal, despite coal plants effectively externalizing much of their costs through environmental and health effects. As the renewables become cost competitive, federal incentives are fading out. *See* Dominic Dudley, *Renewable Energy Will Be Consistently Cheaper Than Fossil Fuels by 2020, Report Claims*, FORBES (Jan. 13, 2018), https://www.forbes.com/sites/dominicdudley/2018/01/13/renewable-energy-cost-effective-fossil-fuels-2020/#2e3f180c4ff2 [https://perma.cc/RV7S-C5CF].

[73] *Solar Tax Credit—everything you need to know about the federal ITC for 2018*, ENERGY SAGE, https://news.energysage.com/congress-extends-the-solar-tax-credit/ [https://perma.cc/X9S2-LJMU] (last visited Jan. 11, 2019).

[74] *State Renewable Portfolio Standards*, NAT'L CONF. OF ST. LEGISLATURES (July 20, 2018), http://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx [https://perma.cc/D759-SP8B] (last visited Jan. 11, 2019).

rights called "Renewable Energy Credits," which may be bundled or unbundled with each unit of clean energy purchased by the utilities, which demonstrate their compliance by filing the credits with the state regulator.[75] Authority to enforce Renewable Portfolio Standards derives in part from a 1976 Supreme Court case, which held that the commerce clause does not "inhibit a state's power to experiment with different methods of encouraging local industry."[76] Utilities' Integrated Resource Plans, regularly filed with state regulators, must account for how the utility will meet the state's renewable requirements for the upcoming years.[77]

In contrast to the state level, federal incentives for solar and wind farms are primarily effectuated through tax laws.[78] Wind farms usually rely upon the Production Tax Credit, which provides a tax credit to the owner for each kWh of wind-generated electricity for the first ten years of the project's operation.[79] In the past, the Production Tax Credit often made the difference between a viable and nonviable installation; ten years ago it could increase project profitability by as much as 17%.[80] The Production Tax Credit is increasingly considered unnecessary and is phasing out.[81] Solar farms usually rely upon the Investment Tax Credit,

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[75] Renewable Portfolio Standards vary in terms of the ultimate target, qualifying sources of generation, and accounting methods. *See generally Detailed Summary Maps*, DSIRE, http://www.dsireusa.org/resources/detailed-summary-maps/ [https://perma.cc/GB52-SDAQ] (last visited Jan. 11, 2019) (providing links to information about state-specific Renewable Portfolio Standards). Renewable Energy Credits (RECs) are similarly varied, restraining REC trading across jurisdictional lines (either state or RTO/ISO), decreasing compliance flexibility and limiting potential liquidity in the credit markets. *See* K.S. Cory & B.G. Swezey, *Renewable Portfolio Standards in the States: Balancing Goals and Implementation Strategies*, NAT'L RENEWABLE ENERGY LAB (2007), https://www.nrel.gov/docs/fy08osti/41409.pdf [https://perma.cc/TV6P-8972] (last visited Jan. 11, 2019).

[76] Hughes v. Alexandria Scrap Corp., 426 U.S. 794, 816 (1976) (Stevens, J., concurring) (stating that states may, to a certain extent, limit commerce in the renewable energy credit markets they created through subsidization).

[77] *See Integrated Resource Plan*, PACIFICORP, https://www.pacificorp.com/es/irp.html [https://perma.cc/HCB7-6VF5] (last visited Jan. 11, 2019).

[78] States often employ property tax credits for renewable projects as well, but those typically play a smaller role than the federal tax policies.

[79] For more on federal tax incentives for wind development in Indian country, see Garry, Spurlin & Nelsen, *supra* note 69, at 456. *See also* Masterson, *supra* note 1, at 334–35.

[80] Mark Shahiniam, *The Tax Man Cometh Not: How the Non-Transferability of Tax Credits Harms Indian Tribes*, 32 AM. INDIAN L. REV. 267, 277 (2007). Although now somewhat dated, the Shahiniam article is an excellent and accessible explanation of federal tax incentives and their applicability in Indian country.

[81] *See* Diane Bailey, *US approves five-year PTC phase out*, WIND POWER MONTHLY, https://www.windpowermonthly.com/article/1377405/us-approves-five-year-ptc-phase [https://perma.cc/3EXV-6EHV] (last visited Jan. 11, 2019).

which allows the owner to deduct a percentage of the cost of installation from federal taxes owed.[82] The Investment Tax Credit is also phasing out over the next several years: from 30% currently, down to 10% in 2022.[83] In conjunction with the federal tax credits, solar and wind project owners may employ accelerated depreciation rates, which allow deductions for depreciation to be front-loaded in the projects' operational life, providing additional tax benefits.[84]

3. The Unique Position and Special Challenges for Tribal Renewable Projects

Tribal installations must overcome certain unique challenges, which may be reduced to a few categories: the federal incentives were not designed with tribal projects in mind, state authority can stymie development, and the division of authority between federal and state limits the construction of transmission lines necessary to reach rural project sites. But important to note at the outset, utility-scale solar and wind projects in Indian country have successfully entered into electricity sales agreements with state-regulated utilities and are currently delivering power into the broader grid.[85]

First, federal renewable incentives were not designed for tribal projects. Since tribes and tribal corporations are not subject to federal taxes, they do not benefit from the primary incentives: the Production Tax Credit, the Investment Tax Credit, and accelerated depreciation rates.[86] The absence of those incentives places tribally owned projects at a competitive disadvantage.[87] Second, state law and policy may obstruct tribes. Since states maintain significant authority over siting transmission lines and determining the need for new generation, a poor relationship between tribes and states may affect tribes' opportunity to build generators.[88]

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[82] *Business Energy Investment Tax Credit (ITC)*, U.S. DEP'T OF ENERGY, https://www.energy.gov/savings/business-energy-investment-tax-credit-itc [https://perma.cc/WY4H-72BG] (last visited Jan. 11, 2019).

[83] *Depreciation of Solar Energy Property in MACRS*, SOLAR ENERGY INDUSTRIES ASS'N, https://www.seia.org/initiatives/depreciation-solar-energy-property-macrs [https://perma.cc/5SX6-TKXQ] (last visited Jan. 11, 2019).

[84] *Id.*

[85] This Article addresses the details of those arrangements later. *Infra* Part III.

[86] Rev. Rul. 94-16, 1994-1 C.B. 19.

[87] This issue is explored further. *Infra* Part II.

[88] *See The Electric Transmission Line Siting Compact*, THE COUNCIL OF ST. GOV'TS, https://www.csg.org/NCIC/documents/Transmission%20Line%20Overview.pdf [https://perma.cc/SY9W-8D9G] (last visited Jan. 11, 2019).

Transmission infrastructure is usually not designed for on-reservation energy generation, and "tribes are often left out of significant discussions among federal, state, and regional organizations when planning transmission line corridors, resulting in Indian land being excluded from transmission routing altogether."[89] Further, states may refuse to grant the "certificate of public convenience" necessary to build new generation if there is no "in-state" benefit from proposed project.[90] The tribal generator will almost always need to sell to a state-regulated utility.[91] Prices may change over the years it takes to develop a project, and state law may obligate the utility to abandon the project in favor of another.[92]

Although at least one scholar has argued that state power must be eliminated in context of energy regulation to empower tribal government,[93] electricity relations between tribes and states are not necessarily oppositional. Tribes and states can and do work together on building out infrastructure. For example, tribal taxes have been upheld as prudent to include in a state-approved utility rate base, allowing utilities in traditionally regulated states to recover costs incurred from tribal taxes from ratepayers.[94]

The division of authority between the federal government and the state may also impede tribal projects. For example, from a central planning perspective, if the United States desired more wind energy it would construct transmission lines from the Midwest to the population centers in the East. Certain entities recognize this, and have attempted to construct multibillion-dollar merchant transmission lines that would buy wind energy in the rural Midwest and sell into the wholesale electricity markets in the East.[95] However, states in the path of the transmission

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[89] White Hawk, *supra* note 1, at 1.
[90] Ryan David Dreveskracht, *Economic Development, Native Nations, and Solar Projects*, AM. J. OF ECON. & SOC. 122, 130 (2013).
[91] For very rural generators, it may be difficult to find a utility off-taker. *See* Symposium, *Renewable Energy in Indian Country*, CTR. FOR RESOURCE MGMT. Mesa Verde Nat. Park, CO 3, 6 (June 1995), https://digital.library.unt.edu/ark:/67531/metadc693977/m2/1/high_res_d/631185.pdf [https://perma.cc/3UDX-ZBDY].
[92] To avoid that scenario, developers often make changes to projects over time. But it may be difficult to explain to a community, without engendering their distrust, that certain concessions are necessary to maintain viability. Telephone Interview with George Burdette, *supra* note 10.
[93] Ryan David Dreveskracht, *Solar as an Economic Development Tool in American Indian Country*, INT'L RESEARCH CTR. FOR ENERGY & ECON. DEV. OCCASIONAL PAPER SERIES 18 (2011).
[94] Tanana & Ruple, *supra* note 26, at 20.
[95] Emma Foehringer Merchant, *US Wind Industry Frets as Major Transmission Lines Stall*, GREENTECH MEDIA (Mar. 9, 2018), https://www.greentechmedia.com/articles/read

line have denied the required licenses on the basis of there being no "in-state" benefit.[96] Those lines would change the calculus for tribal projects across the Midwest, since one of the primary costs for most wind and solar generators are new transmission lines and the wheeling charges incurred by sending power down the line.[97]

Despite the challenges generated by federal incentives, state law, and the division of authority, a limited number of tribal projects are commercially operational today. States are not always opposed to tribes' projects,[98] and tribes may find assistance through alternative incentives and revenue streams. Although the existent installations do not exploit them, such incentives do exist: federal New Markets Credits may support tribal generators,[99] and federal agencies' purchases of renewable energy to meet their own targets receive double credit for renewable energy that is produced on Indian lands.[100] Also, for federal agencies and military installations purchasing renewable energy, tribes qualify under the Section 8(a) program for sole-source contracting, which simplifies and speeds up the procurement process.[101] Separately, regional carbon offset markets could also provide additional revenue streams for developers that can

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/an-argument-as-old-as-wind-the-transmission-conundrum#gs.Zj7aPDo [https://perma.cc/L4EM-NB8Y].

[96] *See, e.g.*, In re Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity, Mo. Pub. Serv. Comm'n (July 1, 2015). For a general debate about state versus regional considerations in the regulatory approval process for transmission lines, see Ashley Brown and Jim Rossi, *Siting Transmission Lines in a Changed Milieu: Evolving Notions of the Public Interest in Balancing State and Regional Considerations*, 81 U. COLO. L. REV. 705 (2010).

[97] *New Transmission Projects Will Unleash Midwestern Wind Power—And Save Billions*, UNION OF CONCERNED SCIENTISTS, https://blog.ucsusa.org/sam-gomberg/midwest-transmission-wind-power?_ga2.164633338.473086921.1539322725-400782459.1537044760 [https://perma.cc/FP5H-E4UA] (last visited Jan. 11, 2019). Kelsey Misbrener, *8 Native American tribes going solar*, SOLAR POWER WORLD (Aug. 7, 2017), https://www.solarpowerworldonline.com/2017/08/native-american-tribes-solar/ [https://perma.cc/96QP-QKG4] (illustrating that states are not always opposed to tribal projects).

[98] *Id.*

[99] COHEN'S HANDBOOK OF FEDERAL INDIAN LAW 1330 (Nell Jessup Newton et al. eds., 2012) [hereinafter COHEN (2012)]; COHEN'S HANDBOOK OF FEDERAL INDIAN LAW 92 (Nell Jessup Newton et al. eds., Supp. 2017) [hereinafter COHEN (2017)].

[100] Energy Policy Act of 2005 § 203, Pub. L. No. 109-58, 119 Stat. 652. Although, as of June 2010, this incentive had never been employed. Dean B. Suagee, *The Climate Crisis, the Renewable Energy Revolution, and Tribal Sovereignty*, *in* TRIBES, LAND, AND THE ENVIRONMENT, 71 n.114 (Sarah Krakoff and Ezra Rosser eds., 2012).

[101] *See* Dreveskracht, *supra* note 93; Dreveskracht, *supra* note 1, at 67; Elizabeth Ann Kronk, *Alternative Energy Development in Indian Country: Lighting the Way for the Seventh Generation*, 46 IDAHO L. REV. 449, 460 (2010).

demonstrate the renewable energy offsets carbon dioxide emissions that would otherwise occur.

Most importantly, as sovereigns, tribes possess significant policy power to encourage renewables if doing so aligns with their strategic objectives. Tribes that choose to facilitate solar and wind development can ease some of the usual barriers to development.[102] That is, land use regulations on tribal lands are often less procedurally complex than in states.[103] And guidance for tribes engaging in such projects is generally available from various federal agencies.[104] Project owners *may* also enjoy a competitive advantage from Indian employees of the project companies being immune from non-tribal taxes, depending upon the state.[105]

No matter where they are constructed, utility-scale wind and solar projects are complicated affairs. But, with market economics increasingly driving the shift towards renewables, the future undoubtedly promises more solar and wind projects.[106] Some tribes have already proven the concept of economic development through wind and solar generation.[107] However, whether renewable energy development is a positive opportunity for tribes is a separate question from whether the projects themselves are possible.

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[102] Shaw & Deutsch, *supra* note 29, at 13–15.

[103] E-mail from Michael Connolly Miskwish, M.A., Resource Economist, to author (Sept. 16, 2018) (on file with author) [hereinafter E-mail from Michael Connolly Miskwish]; *see also* Sara C. Bronin, *The Promise and Perils of Renewable Energy on Tribal Lands*, *in* TRIBES, LAND, AND THE ENVIRONMENT 106–07 (Sarah Krakoff & Ezra Rosser eds., 2012). Neither Bronin nor this author would categorically argue that the lack of land use regulations in Indian country is necessarily a good thing. The uncertainty stemming from zoning authority in Indian country negatively impacts business opportunity and impairs tribes' ability to govern their rightful territory. The courts are largely responsible for the muddled doctrine on zoning on reservations. *See, e.g.*, Brendale v. Confederated Tribes & Bands of Yakima Indian Nation, 492 U.S. 408 (1989); Knight v. Shoshone & Arapahoe Indian Tribes, 670 F.2d 900, 903 (10th Cir. 1982). However, Congress shoulders part of the blame, as it has authority to remedy the uncertainty.

[104] *See, e.g.*, MacCourt, *supra* note 18.

[105] Masterson, *supra* note 1, at 325, 329; E-mail from Connolly Miskwish, *supra* note 103 (California, for example, levies an income tax upon tribal members working on Indian country land that is not possessed by their tribe. California also claims the right to, but has not implemented, income taxes upon Indian employees of a non-tribal business operating on the Indian's home reservation).

[106] *Green Shift to Sustainability: Co-Benefits & Impacts of Energy Transformation on Resource Industries, Trade, Growth, and Taxes,* G20 INSIGHTS, http://www.g20-insights.org/policy_briefs/green-shift-sustainability-co-benefits-impacts-energy-transformation-resource-industries-trade-growth-taxes/ [https://perma.cc/XBL2-MQFQ] (last visited Jan. 11, 2019).

[107] *See* Misbrener, *supra* note 97.

D. Projects on Indian Lands Can Increase Tribal Sovereignty and Self-Determination While Also Serving National Security and State Policy Goals

Tribal renewable energy installations can strengthen tribal institutions, promote self-determination, and aid in economic development strategies, and tribes should consider whether such projects align with their priorities. But in addition to serving tribes' needs, increasing renewable energy generation in Indian country promotes both state policy goals and national interests. Many states promote renewable energy generation as part of their climate and fuel diversification goals.[108] At the national level, the federal government should engage in more concerted climate change mitigation efforts, but it has recently moved in the opposite direction. Yet, even under the Trump Administration, the national security apparatus should still consider addressing climate change to be a key national security interest. In short, when it comes to increasing renewable energy generation in Indian country, tribal, state, and federal interests all align.

1. Tribal Interests

For their own self-interest, tribes should use their sovereign powers in crafting renewable energy strategies. The current federal policy of increasing tribal self-determination suggests the central government can and should provide assistance. Federal Indian policy has vacillated wildly over the past 200 years, but tribal sovereignty and the attendant, inherent authority to govern dates back to well before the formation of the United States Constitution.[109] That authority endures today. The power is best described in Felix Cohen's seminal treatise on Federal Indian Law: "powers which are lawfully vested in an Indian tribe are not, in general, delegated powers granted by express acts of Congress, but rather inherent powers of a limited sovereignty which has never been extinguished."[110] Since President Nixon's Special Message to the Congress on Indian Affairs

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[108] *See* Wilson Rickerson, Tina Halfpenny, & Sander Cohan, *The emergence of renewable heating and cooling policy in the United States*, 27 POL. & SOC'Y 365, 366 (2017).

[109] Early treaties between English settlers on behalf of the King and neighboring Indian tribes recognized tribal entities as governing bodies and entered such treaties as partners. *See Native American History*, ENCYCLOPEDIA BRITANNICA, https://www.britannica.com/topic/Native-American/Native-American-history [https://perma.cc/C36J-PRDU] (last visited Jan. 11, 2019).

[110] Felix Cohen, HANDBOOK OF FEDERAL INDIAN LAW, 122 (1941 ed.).

in 1970, the general federal policy promotes self-determination through strengthening tribal institutions.[111] Although a series of Supreme Court decisions have muddled the doctrine concerning whether the state has concurrent authority in Indian country, commercial transactions with tribes or tribal entities on reservations falls squarely within tribal jurisdiction.[112] Contracts between tribes or tribal members and non-Indians to construct, operate, and/or own a wind or solar facility are therefore subject to tribal jurisdiction.[113]

Since climate change will uniquely stress indigenous cultures, renewable energy development may not only be a self-determination tool, but also a mechanism for self-preservation. The effects of climate change "touch all aspects of Tribal life: health, governance, economic security, and cultural identity."[114] As Professor Elizabeth Ann Kronk Warner of the University of Kansas School of Law writes, "the impacts of climate change in Indian country are real, profound, and immediate."[115] Climate change alters migration patterns for fish and bird species upon which Native communities may rely for subsistence.[116] Since tribes hold legal rights to hunt or fish in defined geographical areas, the value of those rights declines as species move on.[117] Native communities are often tied through

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[111] *See* Pres. Richard Nixon's Special Message on Indian Affairs, July 8, 1970: Message from the President of the United States Transmitting Recommendations for Indian Policy, H.R. Doc. No. 91-363 (1970). *See also* Exec. Order No. 13,175, 65 Fed. Reg. 67,249 (Nov. 9, 2000). Oddly, Nixon's enlightened view may have been due to his football coach at Whittier College, Wallace "Chief" Newman. Nixon idolized his coach and wrote, "I think I admired him more and learned more from him than any other man aside from my father." Dr. Dean Chavers, *Richard Nixon's Indian Mentor*, INDIAN COUNTRY TODAY (Apr. 10, 2016), https://indiancountrymedianetwork.com/history/events/richard-nixons-indian-mentor/ [https://perma.cc/R7JE-SWS2] (last visited Jan. 11, 2019).

[112] COHEN (2012), *supra* note 99, at 1331; *see also* Montana v. U.S., 450 U.S. 544 (1981).

[113] States do, however, assert tax power against such installations—a major impediment to tribal renewable energy development that is addressed *infra* Part IV. Redevelopment is just one way in which tribes may use their sovereign authority to implement climate policies. For an explanation of climate policies available to tribes, see Suagee, *supra* note 100, at 71.

[114] *The New Energy Future in Indian Country: Confronting Climate Change, Creating Jobs, and Conserving Nature*, NATIONAL WILDLIFE FEDERATION 4 (Mar. 23, 2010), https://www.nwf.org/~/media/PDFs/Global-Warming/Reports/03-23-10_NWF_TribalLands_LoRes.ashx [https://perma.cc/46LA-2ZFG].

[115] Kronk, *supra* note 101, at 451.

[116] *See* Frank Seebacher & Eric Post, *Climate change impacts on animal migration*, CLIMATE CHANGE RESPONSES (Aug. 6, 2015), https://climatechangeresponses.biomedcentral.com/articles/10.1186/s40665-015-0013-9 [https://perma.cc/4HCF-GJJL] (last visited Jan. 11, 2019).

[117] Kronk, *supra* note 101, at 452.

treaty to certain lands.[118] As tribes "are tied to the environment . . . as the land changes many communities may be faced with devastating impacts on their culture and traditions due to the effect of climate change on their spiritual connections to their lands."[119] Changing weather patterns can also significantly impact tribal economies that center on agriculture, natural resources, and tourism.[120]

Unfortunately, the history of energy development on Indian lands likely discourages many tribes from considering wind and solar projects. Due to power imbalances, energy-related developments have indisputably harmed Native peoples. Reservations have been used as nuclear waste dumps, power plants on waterways have impaired tribes' treaty rights, mines have poisoned fish and caused severe human health impacts, "and the toxins left by uranium and fossil-fuel development in Indian country are likely to persist indefinitely."[121] The National Environmental Policy Act ("NEPA"), the foundation of environmental protection at the federal level, has been insufficient in protecting tribal interests.[122] Tribes have sometimes, for valid reasons, been opposed to renewable projects on federal lands and occasionally been able to stop them.[123]

But despite the poor history of energy development in Indian country, harnessing wind and solar resources on tribal lands an opportunity to flip the "energy paradigm in Native communities from one of exploitation to one of equity, and from one that undermines . . . cultures of Indigenous peoples to one that nurtures cultural revitalization."[124] A

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[118] *Id.* at 455–56.
[119] *Id.*
[120] Masterson, *supra* note 1, at 322.
[121] Dreveskracht, *supra* note 93, at 8–9.
[122] NEPA may undervalue tribal input by design through, for example, discounting data that is gathered by word of mouth. For an entertaining and somewhat whimsical treatise on NEPA in Indian country, see WILLIAM RODGERS, JR. & ELIZABETH BURLESON, ENVIRONMENTAL LAW IN INDIAN COUNTRY (2005); in particular, note the story of NEPA providing only a cursory look at alternatives to a transmission project Pueblos opposed, *id.* at 676–78, and the problems related to limited, variable mitigation, *id.* at 692–95.
[123] Dreveskracht, *supra* note 93, at 13 (describing a suit by the Quechan Tribe of the Fort Yuma Indian Reservation seeking to tank the Imperial Valley Solar Project in southern California). *See also* Ryan David Dreveskracht, *Alternative Energy in American Indian Country: Catering to Both Sides of the Coin*, 33 ENERGY L.J. 431, 433–34 (2012) (further describing how the Quechan Tribe was not consulted); *id.* at 439 (describing the opposition of the Colorado River Indian Tribes to a solar project, the construction of which disturbed a sacred cremation site); White Hawk, *supra* note 1, at 12 (explaining how the project at issue in *Quechan Tribe v. U.S. Dep't of the Interior* contained "hundreds of known historical sites to which the tribe attached great cultural and religious significance").
[124] Dreveskracht, *supra* note 93, at 16.

seminal Harvard Project on American Indian Economic Development study concluded successful economic development in Indian country depends upon three key pillars: exercising self-determination, bolstering cultural values, and strengthening tribal institutions.[125] Developing a large and complex project on tribal lands has the potential to check all three boxes, as tribes engage in a process to identify a project aligned with socio-environmental values and the multi-year affair strengthens institutional infrastructures.

Tribes can also derive concrete benefits from large wind and solar projects. Installations offer employment, infrastructure, government revenues, and the potential to deliver electricity to tribal members' homes for the first time.[126] Wind and solar projects create construction jobs, some permanent maintenance jobs, royalties, and a steady stream of income.[127] For projects built by non-Indian partners, tribes can use their Tribal Employment Rights Ordinances to ensure a fair percentage of the construction jobs go to tribe members.[128] Incomes earned by those members on the reservation are (often) immune from state income taxation, depending upon the state.[129] Although some tribal leaders may be justifiably wary of engaging in energy projects, "developing reservation economies is vital to sustaining and developing Native American cultural identities."[130]

2. State Interests

Reservations are embedded within the broader electric power system. Therefore, to build momentum for projects in Indian country, states and the national government must recognize those projects serve their interests as well. The wind and solar projects not only foster native empowerment, but also contribute to express state climate policies. As the incidences of severe weather increase, both utilities and state regulators are seeking to protect their infrastructure.[131] Renewable generation helps.

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[125] Kronk, *supra* note 101, at 457–58.
[126] Bronin, *supra* note 103, at 103.
[127] *See* Masterson, *supra* note 1, at 324–26.
[128] Telephone Interview with Chip Lewis, *supra* note 68.
[129] McClanahan v. State Tax Comm'n of Ariz., 411 U.S. 164 (1973); *but see* E-mail from Connolly Miskwish, *supra* note 103 (stating that California would contest that blanket immunity when either (a) the employer is a non-Indian or (b) the employee is employed outside of their home reservation).
[130] Dreveskracht, *supra* note 90, at 125.
[131] ICF INTERNATIONAL, ELECTRIC GRID SECURITY AND RESILIENCE 25–26 (June 2016), https://www.energy.gov/epsa/downloads/electric-grid-security-and-resilience-establishing-baseline-adversarial-threats [https://perma.cc/AQ2Z-L9GD].

In the energy sector, states' Renewable Portfolio Standards are the primary tool for controlling emissions from electrical power generation.[132] Twenty-nine states and Washington D.C. have mandatory standards and eight more states have voluntary goals.[133] Renewable Portfolio Standards are not limited to liberal strongholds: although Vermont and California have aggressive goals, at 75% by 2032 and 50% by 2030 respectively, Oklahoma, Kansas, the Dakotas, and Montana have mandatory standards too.[134] Such state policies have extraterritorial impacts: utilities may, depending on state law, use out-of-state renewable generation to meet in-state goals.[135] Individual utilities may also have separate, higher goals as well.[136] The tribal projects described in Part III all provide Renewable Energy Credits ("RECs") to the purchasing utilities, which are then used to satisfy state Renewable Portfolio Standards, proving the alliance between tribal and state interests in this domain.[137]

3. National Interests

Turning to the national level, President Trump does not have a real climate policy. He has announced the future withdrawal from the Paris Climate Accord[138] and has directed executive agencies to scrub

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[132] *See* NAT'L CONF. OF ST. LEGISLATURES, *supra* note 74.
[133] *Id.*
[134] NAT'L CONF. OF ST. LEGISLATURES, *supra* note 74; *Renewable Portfolio Standards (RPS)*, CAL. ENERGY COMM'N, https://www.energy.ca.gov/portfolio/ [https://perma.cc/WV9V-JNYS] (last visited Jan. 11, 2019); *Hawaii and Vermont set high renewable portfolio standard targets*, U.S. ENERGY INFO. ADMIN. (June 29, 2015), https://www.eia.gov/todayinenergy/detail.php?id=21852 [https://perma.cc/CHW9-EK6E]. Some conservative states' standards have not been raised in many years, lessening their influence in promoting further renewables in those markets. One hypothesis for this is that climate change only became a hyper-partisan issue in the U.S. in the last ten years. In the 2008 election Republican candidate John McCain voiced support for a mandatory cap-and-trade system to reduce greenhouse gas emissions. Already, by 2009, the American Clean Energy and Security Act, which would have largely mirrored McCain's proposal, passed the House by 219–212 but never even made it to the Senate floor.
[135] Note the purchaser for the Moapa project, *infra* Part III.
[136] Salt River Project, the purchaser of the RECs and energy from the Kayenta project, set a goal above Arizona's. *Infra* Part III.
[137] The arrangement between Moapa and the Los Angeles Department of Water and Power (LADWP) allowed for LADWP to purchase the "environmental attributes," including RECs, to satisfy the requirements of the California Renewable Portfolio Standards policy. *Infra* Part III. The Kayenta project provided RECs used by the Salt River Project (the purchaser) to meet its goal of 20% renewables by 2020. *Id.*
[138] Valerie Volcovici, *U.S. submits formal notice of withdrawal from Paris climate pact*, REUTERS (Aug. 4, 2017), https://www.reuters.com/article/us-un-climate-usa-paris/u-s-sub

online resources of references to climate change.[139] Not a proponent of scientific inquiry, President Trump has called climate change a concept "created by and for the Chinese in order to make U.S. manufacturing non-competitive."[140] But the problem does not go away if the President ignores it. Indeed, the National Climate Assessment, an interagency collaboration that assesses the causes and impacts from climate change on the United States, continues to release information confirming the global consensus on the science.[141]

While the national government is generally moving backwards, remarkable consensus remains among the military leadership that climate change is a threat to national security.[142] Military leadership is familiar with managing uncertain threats and more likely to accord with the precautionary principle.[143] Taking action to mitigate climate change at all levels of government, including promoting renewable energy alternatives to fossil fuel generation, serves national security interests by: limiting the negative impacts to vital infrastructure and military assets, reducing reliance on energy imports from hostile foreign states, and lessening the risks of drought and food shortages spurring conflict and displacement. The link between Indian country and serving in the military is strong: Native Americans are disproportionately likely to serve, with three to four times as many in active duty than would be expected as a proportion of total population.[144] Although it may not align with the

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mits-formal-notice-of-withdrawal-from-paris-climate-pact-idUSKBN1AK2FM [https://perma.cc/P3X4-U6QL].

[139] Coral Davenport, *How Much Has 'Climate Change' Been Scrubbed From Federal Websites? A Lot.*, N.Y. TIMES (Jan. 10, 2018), https://www.nytimes.com/2018/01/10/climate/climate-change-trump.html [https://perma.cc/ZZF2-4M65].

[140] Donald Trump (@realDonaldTrump), TWITTER (Nov. 6, 2012), https://twitter.com/realdonaldtrump/status/265895292191248385?lang=en [https://perma.cc/UY6T-2SLP].

[141] *See* U.S. GLOBAL CHANGE RESEARCH PROGRAM, Climate Science Special Report: Fourth National Climate Assessment, Volume II [D.J. Wuebbles et al., eds.] (2018), https://nca2018.globalchange.gov/ [https://perma.cc/R5JL-2VDL].

[142] NAT'L RESEARCH COUNCIL, NATIONAL SECURITY IMPLICATIONS OF CLIMATE CHANGE FOR U.S. NAVAL FORCES: LETTER REPORT (2010), https://doi.org/10.17226/12897 [https://perma.cc/ZGP8-XWKE]; *see also* Ray Mabus, Former U.S. Sec. of the Navy, Remarks at Harvard Law School (Mar. 21, 2018).

[143] *See, e.g.*, Andrew Holland, *Linking Climate Change and Conflict—New Report Stirs Old Debate*, AMERICAN SECURITY PROJECT (Aug. 2, 2013), https://www.americansecurityproject.org/linking-climate-change-and-conflict-new-report-stirs-old-debate/ [https://perma.cc/LH93-CS5W] (last visited Jan. 11, 2019).

[144] While only 0.4% of the American population is active military personnel, 1.33% of Native men and 1.56% of Native women are active duty. *Distribution of active-duty enlisted women and men in the U.S. Military in 2016, by race and ethnicity*, STATISTIC

current President's stance, increasing renewable energy generation on reservations can strengthen the connection between Indian country and the military while supporting national security.

II. THE UNDERLYING LEGAL AND POLICY STRUCTURES IMPEDE TRIBES AND POTENTIAL NON-INDIAN PARTNERS

Since wind and solar development in Indian country has the potential to serve tribal, state, and national interests, scholars such as Elizabeth Kronk Warner have analyzed why so few projects reach completion.[145] Those scholars identify a variety of issues, including the distance from transmission lines, difficulties in finding a utility customer, regulatory delays, changes in the marketplace, lack of financing, tax issues at the federal, state, and tribal levels, a long environmental review process, and other concerns.[146] But all large projects face significant costs, regulatory requirements, financing and tax issues, and an environmental review. Attributing success or failure to a particular discrete cause is generally not possible. All of these issues are simply factors to weigh when evaluating potential projects but do not on their own tip the scales.[147] However, certain factors weigh particularly heavy in Indian country.

This Part describes the four legal and policy hurdles most likely to deter projects on reservations. Limiting the analysis to four is arbitrary, but these four reflect what professors, developers, regulators, and tribal entities involved in the case studies in Part III identify the major issues to be. First, the federal regulations underlying wind and solar development do not promote tribal ownership of projects, which discourages tribes. Secondly, access to financing is grossly insufficient, both through the federal government and through the capital markets. Third, federal

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STATISTA, https://www.statista.com/statistics/214869/share-of-active-duty-enlisted-women-and-men-in-the-us-military/ [https://perma.cc/PLE3-LVRM] (last visited Jan. 11, 2019); *see also* Mona Chalabi, *What Percentage of Americans Have Served in the Military?*, FIVE THIRTYEIGHT (Mar. 19, 2015), https://five thirtyeight.com/features/what-percentage-of-americans-have-served-in-the-military/ [https://perma.cc/FUH3-NKYE].

[145] *See, e.g.*, Kronk Warner, *supra* note 2, at 1031 ("[L]arge alternative and renewable energy projects are virtually absent from Indian country. This Article explores why such little development is happening despite the great potential for alternative and renewable energy development in Indian country and strong tribal interest in such development.").

[146] *Id.* at 1041.

[147] Telephone Interview with Michael O'Connell, Shoreline, Washington attorney and Adjunct Professor, Seattle University School of Law (Jan. 12, 2018) [hereinafter Telephone Interview with Michael O'Connell].

tax incentives for renewables combined with recent common law rules from the Supreme Court place tribes in a bind: to finance projects, they must invite in non-Indian developers, who are then subject to certain state taxes. Lastly, history and cultural narratives drive a higher cost to building trust between Indian and non-Indian partners working on the installations. This Part outlines each of these issues in turn, and attempts to explain the reasons for the current structures. Part III then explains how the operational projects navigated around or through these hurdles, and Part IV advocates for legal and policy changes that will facilitate more development.

A. The Regulatory System for Leasing Indian Lands Limits Tribal Participation

For both the host tribe and non-Indian developers or financiers, the underlying federal statutes and regulations do not enable partial or full tribal project ownership. These laws are merely the latest iteration in hundreds of years of federal policy towards native nations. The current laws spring from the more modern (and enlightened) "self-determination" period and are intended to both protect the tribal land base and support tribal sovereignty. In noting the limitations of these statutes for renewable developments, this Article does not intend to advocate for the removal of essential protections. Most tribes are in favor of the basic principle that, to protect native nations, there must be limitations on the alienability of native lands. This Section merely argues that the current federal laws do not enable or even encourage the tribe to own valuable projects over their multi-decade operational lifetimes.[148]

This Section first provides a brief history of federal Indian policy, limitations on alienability of Indian lands, and the reasoning behind those policies. Then, it describes how the Section 415 leasing statute (the "Indian Long-Term Leasing Act"), including the most recent amendments under the Helping Expedite and Advance Responsible Tribal Home Ownership Act of 2012 ("the HEARTH Act"), enables leasing but not partial ownership. The next subsection explains why the Indian Tribal Energy Development and Self-Determination Act ("ITEDSA"), which would allow for more versatile arrangements, including partial or complete tribal project

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[148] *Infra* Part III (showing the result of that gap: only one tribal project is actually owned by a tribal entity); *Infra* Part IV (recommending changes to the frameworks that make them more flexible and better aligned with self-determination principles).

ownership, has failed to meet its potential. While it would enable ownership roles, ITEDSA is too costly for tribes; in its fourteen years, no tribe has yet used the legal tools it creates. Finally, the last subsection describes how, in part due to legal uncertainty generated by common law rules, a constellation of other federal Indian laws, which might otherwise provide routes for tribal-owned projects, are insufficient.

1. Federal Indian Law and the Inalienability of Native Nations' Lands

The limitations on alienability of Indian lands serve two basic goals: protecting the land base, and preserving the tribe's jurisdiction/authority, or "the right of the Indians to govern themselves."[149] Those limitations date back to the beginning of the United States.[150] Since 1790, sales of Indian land have required validation from the federal government.[151] The current form of the Indian Nonintercourse Act, codified at 25 U.S.C. § 177, states that "no purchase, grant, lease, or other conveyance of land, or of any title or claim thereto, from any Indian nation or tribe of Indians, shall be of any validity in law or equity, unless the same be made by treaty or convention entered into pursuant to the constitution."[152] Similar to sales, leases of both subsurface and surface rights to non-Indian project companies entered into without federal authorization are invalid.[153] Executive authority over Indian affairs is delegated to the Secretary of the Interior and then further delegated to the Bureau of Indian Affairs, leaving the Bureau as the primary administrator charged with approving leases.[154]

Tribes generally favor the restriction on alienation, as it serves to give some protection to their land base from the state and non-Indians.[155] This support carries with it an understanding that the federal government's involvement necessarily brings the potential for delays and inefficiencies. For example, in the realm of renewable projects, federal action approving a lease triggers the NEPA requirements, which may be lengthy.

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[149] Williams v. Lee, 358 U.S. 217, 223 (1959).
[150] *See* Act of June, 30 1834, Sec. 12, 4 Stat. 729, 730 (codified as amended at 25 U.S.C.A. § 177 (2018)) (showing early law on Native American–U.S. relations).
[151] *Id.*
[152] *Id.*
[153] *See* 25 U.S.C. § 2102 (2018).
[154] *See* 25 C.F.R. § 162.021 (2018) (discussing the Bureau of Indian Affairs' responsibilities in approving leases on Native American lands).
[155] *See generally* 42 U.S.C.A. § 4321 (2018).

Although federal control has been "the guiding motif of federal legislation on Indian affairs" since 1790,[156] conceptions of the federal role have changed since Nixon and the dawn of the self-determination era.[157]

More recently, limitations on alienability have been construed to empower tribal governmental authority, jurisdiction, and control over activity in Indian country. Since Nixon, federal policy has aimed to strengthen the decision-making power of tribal institutions in order to meet the federal trust responsibility.[158] The evolution in policy is reflected by the changes in federal Indian property laws over the last few decades, which tend toward increasing flexibility for tribes and lessening overly paternalistic, restrictive, or redundant oversight measures.[159] But striking the balance between oversight and autonomy is difficult. For example, the mechanism in ITEDSA that allows for tribal ownership has shifted the costs and liability away from the federal government and onto tribes, without providing tribes with the requisite authority to control their own success or failure. The following subsections explain how the current frameworks are not aligned with broader self-determination policies and therefore discourage tribes from building renewable energy projects with non-Indian partners. Proposals for amending those regulations while maintaining the benefits of limitations on alienability are discussed in Part IV.

2. HEARTH Act: The Primary Method for Renewable Development in Indian Country

Almost all utility-scale wind and solar development in Indian country has occurred on leases to non-Indian owners: this structure allows tribes to secure some economic benefits through their Tribal Employment Rights Ordinances and in royalty payments, but does not allow for the more significant gains that accrue to project owners. What follows is a short description of the leasing laws and history leading up to the HEARTH Act, which was created specifically with wind and solar leases

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[156] Felix S. Cohen, *The Spanish Origin of Indian Rights in the Law of the United States*, 31 GEO. L.J. 1, 6 (1942).

[157] *See generally* Stephen Cornell & Joseph P. Kalt, *American Indian Self-Determination: The Political Economy of a Successful Policy*, JOINT OCCASIONAL PAPERS ON NATIVE AFFAIRS (Nov. 2010), http://nni.arizona.edu/pubs/jopna-wp1_cornell&kalt.pdf [https://perma.cc/636T-VHCD] (last visited Jan. 11, 2019).

[158] *Id.*

[159] Dean Chavers, *9 Laws and Programs Passed for Indians After the Occupation of Alcatraz*, INDIAN COUNTRY TODAY, https://newsmaven.io/indiancountrytoday/archive/9-laws-and-programs-passed-for-indians-after-the-occupation-of-alcatraz-bfO4irLCzkqrwO_rBtoFAA/ [https://perma.cc/2828-4DVN] (last visited Jan. 11, 2019).

in mind. For reasons addressed in the subsequent subsection on state taxation, the leasing structure also limits the benefits tribes gain as sovereign hosts. The common law rules about state taxation, rather than the HEARTH Act itself, make the leasing strategy less attractive for tribes. However, it is still important to understand the basics of the leasing laws, since the Act is the primary mechanism used thus far by Indian country renewable generators.

Section 415 Indian land leases,[160] named after the corresponding section in the U.S. Code, require an approval from the Bureau of Indian Affairs to be valid. The leases are either individually approved by the Secretary of the Interior under the Indian Long-Term Leasing Act of 1955, or made under regulations pursuant to tribal leasing laws, which must be approved by the Secretary of the Interior.[161] The HEARTH Act created the latter mechanism in 2012.[162] In either case, the tribe, tribal corporation, or individual member is the landowner and lessor while a non-Indian entity is the lessee. That entity may be structured to facilitate tax equity financing and generally takes the form of a special purpose vehicle or project company.[163] Tribes that enter into these leases receive royalty payments or payments-in-lieu-of-taxes from the project company owners.[164] The regulations thus facilitate a lessor-lessee relationship, reminiscent of traditional resource extraction agreements, but do not allow for tribal project company ownership. This may undermine self-determination, as tribes play a more limited role in controlling their economic development.

The 1955 Indian Long-Term Leasing Act has long governed non-mineral leases.[165] In approving such leases, the Bureau of Indian Affairs considers land use and environmental factors, and an approval typically triggers a NEPA review.[166] Tribes may cancel leases anytime before the review is complete.[167] Leases may be for terms up to twenty-five years,

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[160] 25 U.S.C. § 415 (2018).
[161] *Id.*
[162] *Id.*
[163] *Id.*; Kronk Warner, *supra* note 2, at 1048.
[164] Kronk Warner, *supra* note 2, at 1048.
[165] *See* U.S. DEP'T OF THE INTERIOR, BUREAU OF INDIAN AFFAIRS, NATIONAL POLICY MEMORANDUM NO. NPM-TRUS-29, GUIDANCE FOR THE APPROVAL OF TRIBAL LEASING REGULATIONS UNDER THE HEARTH ACT 3 (Jan. 16, 2013), https://www.bia.gov/sites/bia.gov/files/assets/public/raca/national_policy_memoranda/pdf/idc-040839_0.pdf [https://perma.cc/QT9Y-MPJB]. *See generally* 25 U.S.C. § 415.
[166] 25 U.S.C. § 415(e)(3).
[167] *See* AMERICAN INDIAN LAW DESKBOOK, CONFERENCE OF WESTERN ATTORNEYS GENERAL, 185–87 (Clay Smith ed., 4th ed. 2008) (showing that tribes possess governmental powers

with the possibility of renewal.[168] While the Bureau approval system ensures a degree of protection for the land base, which tribes favor, the case-by-case methodology proved unwieldy, especially for tribes with high institutional capacity and significant non-Indian investment. In a move towards increasing deference to tribal processes, Congress began to experiment with alleviating the cumbersome process. First, it passed the Navajo Trust Leasing Act of 2000, authorizing long-term leasing of Navajo lands without Bureau approval so long as the leases were made pursuant to a Bureau-approved, general regulatory scheme for leasing lands under tribal law.[169] But the Navajo Leasing Act limited U.S. liability for losses sustained by either party to a lease approved under the Navajo Nation leasing regulations.[170]

Following the path of the Navajo Act, the HEARTH Act of 2012 amended the 1955 Indian Long-Term Leasing Act to incorporate the Navajo provisions and apply them to all federally recognized tribes opting into the scheme.[171] Such opt-in provisions are fairly common in more recent Indian land laws, and reflect the increased federal attention to self-determination. For example, as in the Navajo Leasing Act, the HEARTH Act allows "tribes to approve leases [up to twenty-five years] for enumerated purposes without prior approval of the Secretary of the Interior, assuming the lease is executed under the tribal regulations approved by the Secretary."[172] The Obama Administration, major tribal organizations, the Department of the Interior, many members representing tribes, and a bipartisan group in Congress all supported the passage of the HEARTH Act.[173] Among other goals, the supporters contemplated that the HEARTH Act would spur renewable energy development,[174] and regulations specifically addressed wind and solar provisions. The regulations also state that state

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known as inherent tribal authority). *But see generally* Joseph William Singer, *Remembering What Hurts Us Most: A Critique of the American Indian Law Deskbook*, 24 N.M. L. REV. 315 (1994) (critiquing the Deskbook as "an extended brief for the continued expansion of state power in Indian country"); *see also* Lynn H. Slade, *Indian Tribes—Business Partners and Market Participants: Strategies for Effective Tribal/Industry Partnership*, ROCKY MT. MIN. L. FDN. 3B-13–14 (2011).

[168] Slade, *supra* note 167, at 3B-13–14.

[169] Navajo Nation Trust Leasing Act of 2000 Approval of Navajo Regulations, 80 Fed. Reg. 69,692 (Nov. 10, 2015).

[170] *Helping Expedite and Advance Responsible Tribal Homeownership Act or the HEARTH Act: Hearing Before the House Committee on Natural Resources*, 111th Cong. 15 (2009).

[171] Kronk Warner, *supra* note 2, at 1051.

[172] *Id.* at 1048.

[173] *Id.* at 1050–51.

[174] 158 CONG. REC. H889-03 (daily ed. May 25, 2012) (statement of Hon. Betty McCollum); 158 CONG. REC. H2682-01 (daily ed. May 15, 2012) (statement of Rep. Markey).

and country officials cannot tax "facilities" under an approved lease,[175] but what "facilities" means is uncertain. The mechanism has enjoyed fairly broad support, despite certain provisions that cut against self-determination.[176] By the end of 2015, about twenty tribes had obtained secretarial approval of their leasing regulations pursuant to the HEARTH Act.[177]

3. ITEDSA's Unmet Promise

The primary ITEDSA mechanism (a Tribal Energy Resource Agreement, or "TERA") should allow the flexibility for tribes to assert partial or complete ownership of projects on Indian lands. However, certain provisions make it either undesirable or impossible for tribes to access and exploit that mechanism. This subsection first provides the history behind ITEDSA for the basic context. Next, it explains why tribes have not used the law: (1) the high costs incurred; (2) the broad waiver of federal liability; (3) the environmental provisions, which intrude upon tribal sovereignty; and (4) the uncertainty implicit in any untested statutory framework. Amendments to ITEDSA, including recently enacted amendments under Senate Bill 245, are addressed in Part IV.

a. Alphabet Soup, or the History Behind ITEDSA (from IMLA to IMDA to ITEDSA's TERAs)

ITEDSA is rooted in a long series of mineral leasing provisions. The 1938 Indian Mineral Leasing Act ("IMLA") was the federal government's first concerted effort to establish some level of uniformity for approving mineral leases. The government intended IMLA to balance tribal economic interests with the need for federal protection against exploitative extractive contracts with non-Indian mining companies.[178] IMLA standardized lease agreements and required both tribal consent and approval from the Secretary of the Interior.[179] IMLA leases directed the lessee to pay a percentage royalty to the tribes.[180] Over time, as tribal

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[175] 25 C.F.R. 162.501–599; *see also* Residential, Business, and Wind and Solar Resource Leases on Indian Land, 77 Fed. Reg. 72,440, 72,447 (Dec. 5, 2012) ("The Federal statutory scheme for Indian leasing . . . precludes State taxation.").
[176] *Infra* Part IV.
[177] Monte Mills, *New Approaches to Energy Development in Indian Country: The Trust Relationship and Tribal Self-Determination at (Yet Another) Crossroads*, 63 FED. L. 50, 54 (2016).
[178] Peter F. Carroll, *Drumming Out the Intent of the Indian Mineral Leasing Act of 1938*, 7 PUB. LAND L. REV. 135, 137–38 (1986).
[179] COHEN (2012), *supra* note 99, at 1125.
[180] Carroll, *supra* note 178, at 141.

institutions strengthened, dissatisfaction regarding the economic returns and the limited flexibility of IMLA leases grew.[181] In the 1970s some tribes began negotiating outside of the template provided by the Bureau of Indian Affairs in order to achieve greater control, ownership, and a profit-sharing role.[182] Other energy tribes announced a hiatus on development entirely.[183] The demands for greater flexibility in project structuring (such as joint ventures, greater equity, or non-royalty interests) forced the enactment of the Indian Mineral Development Act of 1982 ("IMDA").[184] IMDA expanded the range of agreements,[185] directed the Secretary to approve agreements "in the best interest of the Indian tribe,"[186] and allowed the Secretary power to unilaterally cancel agreements in the case of noncompliance.[187]

IMDA is an improvement on IMLA since it provides more flexibility and allows for tribal ownership. However, significant weaknesses remain, and because it predates commercial renewable energy development, it is not designed for wind and solar projects. The federal government has consistently mismanaged royalties from IMDA leases, leading to regular theft and accounting errors.[188] And contrary to the reasons underlying the limitation on alienability, the Act provides little federal protection for the tribes that have entered into contracts with non-Indian mining companies.[189] The uncertainty over whether IMDA covered renewable resources[190] was put to rest by the 2005 ITEDSA, which covers agreements for "both renewable and nonrenewable energy sources, including . . . wind [and] solar."[191]

As signaled by its name, ITEDSA is intended to promote self-determination. The purpose of ITEDSA follows the general arc of prior

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[181] Slade, *supra* note 167, at 3B-2.
[182] COHEN (2012), *supra* note 99, at 1129.
[183] *Id.*
[184] Slade, *supra* note 167, at 3B-2.
[185] 25 U.S.C. § 2102(a) (2012) ("any joint venture, operating, production sharing, service, managerial, lease or other agreement").
[186] 25 U.S.C. § 2103(b) (2012).
[187] *Id.*
[188] COHEN (2012), *supra* note 99, at 1132.
[189] U.S. v. Navajo Nation, 537 U.S. 488 (2003); *see also* U.S. v. Navajo Nation, 556 U.S. 287 (2009) (holding that, despite the federal government having comprehensive control over Indian coal, neither IMLA nor IMDA created an enforceable duty for the federal government to promptly respond to a royalty rate increase agreement between the tribe and the mining company under the mining company's coal lease).
[190] *See, e.g.*, Judith V. Royster, *Tribal Energy Development: Renewables and the Problem of the Current Statutory Structure*, 31 STAN. ENVTL. L.J. 91 (2012).
[191] 25 U.S.C.A. §§ 3501–3506 (2012); *see also* 25 C.F.R. pt. 224 (amended 2018).

leasing statutes: to improve economic self-sufficiency via energy projects and to strengthen tribal control of developments on Indian lands.[192] The Act held great promise. Pre-ITEDSA, all statutory routes to renewable developments put tribes in a passive role.[193] In contrast, ITEDSA would allow more options for project structuring, most notably, equity ownership.

ITEDSA's primary vehicle for self-determination are TERAs. TERAs are overarching agreements that allow tribes some flexibility to enter into various sub-agreements for energy development. They lengthen and standardize contract term periods, expand the tribal role, and eliminate Secretarial approval, which would otherwise be required at each step.[194] TERAs themselves require Secretary approval for which tribes must meet extensive statutory requirements, including the administration of a complex environmental review process and a demonstration of sufficient capacity.[195] With an approved TERA, tribes may then enter into various business agreements for energy development, including leases and rights of way for electric lines without secretarial approvals of the particular sub-agreements.[196] As with the HEARTH Act, ITEDSA wisely follows the opt-in model: tribes may choose to apply for the TERA mechanism, or not.[197]

b. Why No Tribe Has Used the Statute for Renewable Energy Project Ownership

While TERAs are well-intentioned steps towards greater self-determination, the system has been a failure: by mid-2015, no tribe had secured a TERA.[198] Four major, interrelated reasons are to blame: (1) the high costs; (2) the broad waiver of federal liability; (3) mandatory environmental provisions that intrude upon tribal sovereignty; and (4) areas of uncertainty. Senate Bill 245, which became law in December 2018, attempts to lessen the costs and narrow the liability waiver.[199] Whether those changes are sufficient remains to be seen.

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[192] COHEN (2012), *supra* note 99, at 1134.
[193] Royster, *supra* note 190, at 113–15.
[194] 25 U.S.C.A. § 3504(a) (2012).
[195] 25 U.S.C.A. § 3504(e) (2012).
[196] COHEN (2012), *supra* note 99, at 1134.
[197] Judith J. Royster, *Practical Sovereignty, Political Sovereignty, and the Indian Tribal Energy Development and Self-Determination Act*, 12 LEWIS & CLARK L. REV. 1065, 1100–01 (2008).
[198] U.S. GOV'T ACCOUNTABILITY OFF., GAO-15-502, INDIAN ENERGY DEVELOPMENT: POOR MANAGEMENT BY BIA HAS HINDERED ENERGY DEVELOPMENT ON INDIAN LANDS 5 (2015).
[199] 25 U.S.C.A. § 3501 et seq. (2018).

c. Insurmountable Costs

First, acquiring and employing a TERA incurs significant front-end and back-end costs, which are wholly borne by the tribe.[200] Once the Secretary approves a TERA, the tribe must negotiate its terms while also ensuring compliance with a suite of federal environmental laws, which places financial strain on the tribe.[201] The TERA also requires its own expensive environmental review process[202] (more on this below). The Bureau of Indian Affairs' approval requires the tribe create a notice and comment process for each following development step.[203] While there are certainly positive features of such processes,[204] "the costs . . . will be borne by the tribe rather than the Bureau of Indian Affairs . . . [and] . . . [t]his cost-shifting places a significant burden on the tribes."[205] Some feel that assuming the financial and political responsibility for trust resource management via a TERA would relieve the federal government, as trustee, of accountability for its own systemic failings.[206]

Recently passed Senate Bill 245 purports to alter this cost-shifting.[207] The Act directs the Secretary to make available to the tribe, through a negotiated funding agreement, money that the Secretary would otherwise expend "to operate or carry out any program, function, service, or activity . . . of the Department that, as a result of an Indian tribe carrying out activities under a [TERA], the Secretary does not expend."[208] Those funds are, unfortunately, "subject to the availability of appropriations."[209]

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[200] Royster, *supra* note 190, at 117–18.
[201] Andrea S. Miles, *Tribal Energy Resource Agreements: Tools for Achieving Energy Development and Tribal Self-Sufficiency or an Abdication of Federal Environmental and Trust Responsibilities?*, 30 AM. INDIAN L. REV. 461, 470 (2006).
[202] *See* Bronin, *supra* note 103, at 112–13.
[203] 25 U.S.C.A. § 3504(e)(2)(C)(iii)(i) (2012).
[204] Royster, *supra* note 197, at 1090–94 (arguing that (1) the review is process-based and does not mandate a particular outcome; (2) public notice and comment has "long been a feature of tribal mineral development decisions"; (3) the tribal process ensures "that comments will be reviewed in the light of tribal values, priorities, and decisions, rather than filtered through a federal lens"; (4) the process allows input from tribal (and non-member) citizens; and (5) many tribes already have environmental laws in place).
[205] *Id.* at 1092.
[206] Thomas H. Shipps, *Evolution of the Trust Responsibility and the Path to Tribal Self-Determination*, *in* EMERGING ISSUES IN TRIBAL-STATE RELATIONS: LEADING LAWYERS ON ANALYZING THE ECONOMIC, CULTURAL, AND POLITICAL TRENDS AFFECTING TRIBAL-STATE INTERACTIONS 42 (2013 ed.).
[207] 25 U.S.C.A. § 3504(g) (2018).
[208] *Id.*
[209] *Id.*

Since the amendments were only recently passed, and the Interior Department has not yet issued regulations, it remains to be seen how such a program will work. Acknowledging that limitation, Senate Bill 245 may significantly improve the cost calculation for tribes considering a TERA.

d. The Broad Waiver of Federal Liability

ITEDSA explicitly states that the federal government is not liable for any losses from agreements under a TERA.[210] The importance of the waiver is contested, but appears to be inconsistent with other provisions of the law. For example, if a non-Indian asserts the tribe has violated its TERA, the Bureau of Indian Affairs may, subject to some limitations, cancel the agreement.[211] It seems incoherent for the Secretary of the Interior to disclaim liability arising from the federal trust responsibility while simultaneously maintaining the authority to cancel a TERA if a non-Indian asserts the tribe has violated the agreement.[212] During the ITEDSA hearing, the President of Navajo Nation stated the bill

> continue[s] to empower the federal government to act as the traffic cop who is authorized to put its hand out to stop a tribe's car from moving . . . [t]his scheme, wherein a cabinet Secretary has prescriptive control over decisions regarding Indian energy development, but no subsequent liability, is an abdication of the federal trust responsibility that is patently unfair to tribes.[213]

Others, however, argue the waiver of liability is not a major problem and that the lesson of *U.S. v. Navajo Nation* for tribes "is that over-reliance on the good faith of the government can be a dangerous thing."[214] Overall, the government's disclaimer of liability creates a disincentive for tribes to pursue TERAs.[215]

The recent passage of Senate Bill 245 improves the liability problem to some extent as the bill clarifies the extent of federal liability. The federal government accepts its trust liability for *non*-negotiated

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[210] 25 U.S.C.A. § 3504(e)(6)(D)(ii) (2012).
[211] 25 U.S.C.A. § 3504 (2018).
[212] *See, e.g.*, Ravotti, *supra* note 29, at 313. *See also* Kronk, *supra* note 101, at 470.
[213] Royster, *supra* note 197, at 1098.
[214] *Id.* at 1100.
[215] Mills, *supra* note 177, at 52. *See also* Unger, *supra* note 1, at 356; U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 198.

terms in TERAs and for losses resulting from "the failure of the Secretary to perform an obligation" under the section regarding TERAs.[216] Narrowing the waiver to only negotiated terms under a TERA is a positive step towards greater self-determination.

e. Mandatory Environmental Review Provisions Interfere with Tribal Sovereignty

Understanding the purpose of the TERA environmental requirements requires a look back at another impetus for the law. Congress hoped TERAs would speed development by eliminating regulatory delays due to NEPA requirements.[217] It is highly debatable whether this is a laudable goal.[218] But in any case, the drafters hoped tribes would not be "forever bogged down in the red-tape and bureaucracy,"[219] and that non-Indian partners would "gain greater certainty and efficiency in the development of energy resources."[220]

Each TERA must have an environmental review process.[221] Typically, federal approval of a tribal lease triggers some sort of environmental impact evaluation under NEPA,[222] the scope of which is commensurate with the anticipated impact. Such a review can take years. After TERA approval, future agreements would not require federal approval and

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[216] 25 U.S.C.A. § 3504(e)(6)(D)(iii) (2018).
[217] *See* Miles, *supra* note 201, at 474–75.
[218] Telephone Interview with Chip Lewis, *supra* note 68 (explaining how the NEPA process must be compared with relevant state-mandated processes, rather than with no environmental review at all).
[219] 149 CONG. REC. S5748 (daily ed. May 6, 2003) (statement of Sen. Pete Domenici).
[220] Elizabeth Ann Kronk, *Tribal Energy Resource Agreements: The Unintended "Great Mischief for Indian Energy Development" and the Resulting Need for Reform*, 29 PACE ENVTL. L. REV. 811, 819, n. 32 (2012) (citing Scot W. Anderson, ROCKY MOUNTAIN MINERAL LAW INSTITUTE, THE INDIAN TRIBAL ENERGY DEVELOPMENT AND SELF-DETERMINATION ACT OF 2005: OPPORTUNITIES FOR COOPERATIVE VENTURES 3 (2005). Mr. Anderson goes on to explain why this is the case, stating: "The TERA is also an opportunity for a tribe to market its commercial and legal environment to potential mineral developers. A TERA can assure investors of a stable investment environment by describing and incorporating an appropriate limited waiver of the Tribe's defense of sovereign immunity, and by setting forth a clearly defined process for resolving disputes. The certainty provided by a TERA can assist energy developers and tribes in securing financing for energy projects on tribal lands. Many investors and energy developers also want to know that they have an [sic] clear way to exit from a project. The TERA can set forth rules and principles governing the assignment and transfer of interest, and in that manner assist energy developers in designing their exit strategy.").
[221] 25 U.S.C.A. § 3504(e)(2)(B)(iii)(VI) (2018).
[222] *See generally* RODGERS, JR. & BURLESON, *supra* note 122, at §§ 1:14–1:26.

therefore would not trigger NEPA review.[223] However, the Secretary *does* approve the TERA itself, so that decision *is* subject to a review.[224] Although state and local governments are not required to conduct NEPA reviews, creating a legal structure that would systematically sidestep those requirements was contentious. During the hearings before ITEDSA's passage, environmentalists and some tribal representatives criticized the provision.[225] Responding to those concerns, the drafters added a tribal environmental review process, which included heavy requirements for the tribe.[226] The tribe must inform the public, provide an opportunity to comment, respond to comments, meet requirements for administrative and technical support, and oversee development activities to ensure they comply with both the TERA *and* other federal environmental laws.[227]

However, the main problem with the environmental requirement is not the cost, but that it interferes with what would otherwise be an internal policy discussion, which shows disdain for tribal sovereignty. The ITEDSA requires tribal consultation with state governments on off-reservation environmental impacts, yet states are *not* required to consult with tribes concerning on-reservation impacts.[228] The lack of symmetry is problematic and "raises the specter of historic interference by states with tribal matters."[229] Moreover, the requirement to consult with states goes beyond what NEPA would require of the federal government for projects outside of Indian country.[230] Further, the mandated public notice and comment process for agreements entered into under the TERA invites the non-Indian public into what would otherwise be an internal matter of tribal governance.[231]

f. Areas of Uncertainty May Impede Commercial Agreements

For now, since no tribe has yet experimented with a TERA, uncertainties remain regarding the authority granted to tribes acting pursuant to a TERA.[232] Large risks are always borne by early adopters,

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[223] Bronin, *supra* note 103, at 231.
[224] 25 C.F.R. § 224.70 (2012).
[225] Miles, *supra* note 201, at 471.
[226] *Id.* at 472.
[227] *Id.*
[228] Royster, *supra* note 197, at 1094.
[229] *Id.*
[230] Unger, *supra* note 1, at 353.
[231] Ravotti, *supra* note 29, at 309.
[232] Mills, *supra* note 177, at 52. *See also* Unger, *supra* note 1, at 356; U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 198.

whether they adopt new technologies or new legal mechanisms. Non-Indian partners may also be scared away, especially since some areas of uncertainty create project-related risks down the road. For example, it is currently unclear how the Bureau of Indian Affairs and the courts will treat interested parties' challenges to tribal compliance with a given TERA.[233] Senate Bill 245 provides further guidance as to how the Secretary will respond to petitions by interested parties, requires exhaustion of tribal remedies, and sets timelines for secretarial determinations regarding whether the petitioner qualifies as an "interested party" and whether their challenge has merit.[234] The Secretary is directed to "only" take action deemed necessary to address the claims of noncompliance, but such action may amount to rescinding the TERA.[235]

As a route for tribal ownership of wind and solar installations financed by outside parties, ITEDSA holds great promise. But while the TERA system is innovative, and breaks the traditional lessor-lessee mold, the difficulties of meeting statutory requirements have thus far thwarted all efforts. In short, "[t]ribes have failed to take advantage of the existing TERA provisions because they represent a mixture of federal paternalism, oversight, and limited liability that is not attractive to tribes."[236] Part IV proposes amendments to the TERA system and addresses the passage of Senate Bill 245, which became law as this Article went to press.

4. Incomplete Paths: Section 81, Easements, and Tribal Corporations

A TERA would enable more general authority. In its absence, tribes use a collection of other statutory authorities in addition to (or as a replacement of) the basic lease under the Indian Long-Term Leasing Act or regulations approved under HEARTH. Utility-scale renewable projects often engage multiple specialized business entities and require transmission wires that cross property lines.[237] The development process is likely to include various contracts with outside entities and rights of way through Indian country. Tribal development corporations or Section 17 corporations are also often involved. These legal tools are essential for economic development in Indian country, but are insufficient on their own to enable a wind or solar project.

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[233] Royster, *supra* note 197, at 1095–97.
[234] 25 U.S.C.A. 3504(e)(7) (2018).
[235] *Id.*
[236] Kronk, *supra* note 220, at 820.
[237] *See, e.g.*, discussion of Fort Mojave Solar, *infra* Section III.D.1.

a. The Limits of Section 81 Approvals

Section 81 requires that any contract which encumbers tribal land (and is not a lease under the HEARTH or ITEDSA) for seven years or more must have Bureau approval to be valid.[238] The Bureau of Indian Affairs is involved in such non-lease agreements affecting tribal lands because these agreements relate to alienability. As with the leasing statutes discussed above, the Section 81 approval process is supposed to protect the tribe's land base, while also facilitating non-Indian investment.[239] But currently, Section 81 approvals are ill-designed for renewable energy generation. In order to facilitate financing, most sales of electricity are made for twenty-year terms,[240] so the seven year safe haven is far too short. Whether an agreement "encumbers" land is unclear—if there is any uncertainty, the parties will contact the Secretary to determine if Secretarial approval is necessary.[241] Parties are likely to err on the side of caution, as failure to secure approval voids the agreement.[242]

b. Rights of Way and the Fears of Losing Jurisdiction

Because of the legacy of old federal allotment laws combined with common law rules, rights of way are complicated and risky for tribes contracting with non-Indians. Yet in the absence of a general, authority-granting TERA, utility-scale projects almost always require a right of way for electrical lines or construction needs in addition to the lease.[243] However, a long history of federal policies that fractured land ownership in Indian country complicates rights of way,[244] which often must pass through tribally owned land, land owned in fee simple by tribal members or by non-Indians, etc.[245]

In addition to complex land ownership, rights of way are problematic because they may strip the tribe of jurisdiction or authority over

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[238] 25 U.S.C. § 81 (2012).
[239] Slade, *supra* note 167, at 3B-19.
[240] For instance, most Western Area Power Administration contracts are for twenty-year terms. *Power Marketing*, WESTERN AREA POWER ADMIN., https://www.wapa.gov/PowerMarketing/Pages/power-marketing.aspx [https://perma.cc/L6SL-LVZU] (last updated May 22, 2018).
[241] Slade, *supra* note 167, at 3B-19–20.
[242] COHEN (2012), *supra* note 99, at 1347–48.
[243] Slade, *supra* note 167, at 3B-13–14.
[244] *See, e.g.*, The Dawes Act, 25 U.S.C. ch. 9 § 331 et seq. (2000).
[245] Ravotti, *supra* note 29, at 293.

activity occurring within the bounds of the reservation. This results from recent Supreme Court holdings, and it runs counter to the overarching self-determination policy. Common law rules deny tribes the authority they would otherwise possess over non-members, when those non-members are on rights of way through Indian country.[246] In *Strate v. A-1 Contractors,* the Court held that, with its right of way grant, the tribe lost its inherent right to exclude non-members and, consequently, lost the lesser right to exercise authority over them.[247] Federal circuit courts then extended the *Strate* holding to further constrain tribal taxing and regulating authority over non-Indian rights of way holders.[248]

The constrained tribal authority over non-Indians holding a right of way stands in stark contrast to a tribe's power over non-Indian leaseholders. In *Merrion v. Jicarilla Apache Tribe*,[249] the Supreme Court confirmed tribal power to tax lessees as a function of tribal sovereignty.[250] As a result of *Strate*, tribes may prefer to use leases wherever possible. Yet the use of a lease to create a functional right of way may be risky for both parties due to the lack of legal certainty.[251] With *Strate*, the Supreme Court may have also put easements at risk, since easements, like rights of way, are servitudes.

The jurisdictional uncertainty for such land interests creates an incentive for tribes to seek compensation that fully accounts for the potential divestment of tribal authority. The tribe is essentially selling its sovereignty over a slice of land that runs through its reservation. This may raise the price for the other party, rendering the project uncompetitive with alternatives outside of Indian Country.[252] Thus, common law rules that deny the tribe authority over rights of way also stifle economic development. More generally, this point illustrates that legal uncertainty

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[246] Royster, *supra* note 190, at 106.
[247] Strate v. A-1 Contractors, 520 U.S. 438, 442 (1997).
[248] Royster, *supra* note 190, at 107. *See also* Big Horn Cnty. Elec. Coop. v. Adams, 219 F.3d 944 (9th Cir. 2000).
[249] Merrion v. Jicarilla Apache Tribe, 455 U.S. 130 (1982).
[250] *See* Royster, *supra* note 190, at 108 (describing the lack of judicial holdings concerning tribal governmental authority over easements, often used for wind farm development. Royster argues that courts should consider easements to be more similar to leases than to rights of way and affirm tribal sovereign authority over non-member easement holders. In the absence of such a court ruling, Royster encourages tribes considering wind turbine construction to enter into an Indian Long-Term Leasing Act or HEARTH Act lease or carefully draft easements to retain governmental authority over the holder).
[251] White Hawk, *supra* note 1, at 19.
[252] Ravotti, *supra* note 29, at 296.

combined with judicially restricted tribal authority raises the project costs in Indian country and forces tribes to give greater concessions to their economic partners than other sovereign entities would.[253]

c. The Potential for Section 17 Corporations?

Tribal corporations could play a larger role in developing renewable projects that engage both the tribe and non-Indians, but legal uncertainties currently chill that potential. Under the authority of the Indian Reorganization Act, tribes may use Section 17 tribal corporations to enter into contracts without Bureau of Indian Affairs' approval.[254] However, leases between Section 17 corporations and other entities likely still require Bureau approval.[255] And it is unclear whether Section 17 corporations may encumber land in any way other than via leases.[256] As further addressed in Part IV, this particular legal tool may be fairly simple to amend and could enable greater tribal ownership over wind and solar installations, especially since Section 17 corporations in Indian Country are clearly exempt from state taxation, which is an upside for tribes and their non-Indian partners weighing project costs.[257]

B. Federal Financing Is Inadequate

While there are several mechanisms for federal financing of wind and solar projects in Indian country, those mechanisms are wholly insufficient. The obvious alternative, turning to the general capital markets for project financing, is generally not available for tribes. The federal government's lack of adequate systems for tracking land titles bears part of the blame for that inaccessibility. If tribal-owned projects could access the federal tax credit incentives, these deficiencies would be less important, as tax equity investors could satisfy the massive capital demands

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[253] For a clear explanation of this dynamic, see David D. Haddock & Robert J. Miller, *Can a Sovereign Protect Investors from Itself? Tribal Institutions to Spur Reservation Investment*, 8 J. SMALL & EMERGING BUS. L. 173 (2004).
[254] 25 C.F.R. § 84.004 (2018).
[255] COHEN (2012), *supra* note 99, at 1348; COHEN (2017), *supra* note 99, at 95.
[256] Royster, *supra* note 190, at 112.
[257] Dreveskracht, *supra* note 90, at 129; *see also* Michael P. O'Connell, *Tax Considerations in Natural Resource Development Projects on Indian Lands*, NAT. RES. DEV. IN INDIAN COUNTRY, ROCKY MOUNTAIN MIN. L. FOUND. (1999) (describing the different tax treatment between a tribal corporation organized under tribal or state law and a Section 17 corporation). *See* discussion *infra* Part II addressing state taxation issues.

of utility-scale projects. However, as explained in the following subsection, those federal credits are not available for tribes. If the central government does not improve its land title management systems or make the tax incentives available, then it must provide more financing for projects in Indian country in other ways.

Some federal financing of tribal-owned projects does exist, and its importance cannot be overstated. However, the programs are chronically underfunded. Congress could solve the problem by either increasing the funding through various well-established programs, or developing new financing methods. The lack of funding pushes tribes into a non-ownership position. Over the last fifteen years, Congress has provided financial and technical support for small, community-scale projects. But all the federal programs pooled together could not support a single utility-scale project. Between 2002 and 2010, the Department of Energy's Tribal Energy Program awarded $30.4 million for feasibility studies and facilitated construction of 129 tribal projects.[258] The Department of Agriculture, the Bureau of Indian Affairs, the Department of Housing and Urban Development, and the American Recovery and Reinvestment Act all provide support for tribal programs through a range of mechanisms. The Indian Financing Act operates revolving loan programs, but appropriations do not meet demand.[259] In 2005, the Energy Policy Act authorized a Department of Energy Indian Energy Loan Guarantee Program,[260] and in 2009 President Obama announced he wanted to "secur[e] tribal access to financing and investments for new energy projects."[261] In 2013, Department of the Interior awarded nine Tribal Energy Capacity Grants totaling $700,000.[262] In 2015, the Department of Energy awarded $6 million in grants to eleven tribes to use for renewable energy projects.[263] While

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[258] Bronin, *supra* note 103, at 233.

[259] 25 U.S.C. § 1451 et seq. (1994). *See* U.S. GEN. ACCOUNTABILITY OFF., RED-75-371, IMPROVING FEDERALLY ASSISTED BUSINESS DEVELOPMENT ON INDIAN RESERVATIONS 3 (1975). For further information on the financial assistance programs, including the Indian Guaranteed Loan Program, the Small Business Administration Loan Guaranty Program, the USDA Rural Business and Cooperative Program, Business and Industry Guaranteed Loan Program, and Rural Utilities Service program, see COHEN (2012), *supra* note 99, at 1358–59; *see also* COHEN (2017), *supra* note 99, at 97.

[260] Pub. L. No. 109-58, § 503(a), 199 Stat. 594, 767–68 (codified at 25 U.S.C. § 3502(c) (2012)).

[261] *See The New Energy Future in Indian Country: Confronting Climate Change, Creating Jobs, and Conserving Nature*, 5 NAT'L WILDLIFE FED'N 1, 16 (2012), https://www.nwf.org/~/media/PDFs/Global-Warming/Reports/03-23-10_NWF_TribalLands_LoRes.ashx [https://perma.cc/9PC5-3YC8] (last visited Jan. 11, 2019).

[262] White Hawk, *supra* note 1, at 9.

[263] *Id.*

funding did increase during Obama's tenure, it remained too low to support large projects. These numbers seem big, but are not nearly large enough: utility-scale solar projects cost in the hundreds of millions of dollars to construct.[264] The Department of Energy has offered loan guarantees of over $1 billion to non-Indian projects in the past—why not similar commitments for Indian energy?[265]

Instead of expanding financing, the recent trend is in the opposite direction; in fact, the federal government appears keen to cut its expenditures on Indian energy programs. Tribes seeking to take over federal programs by acquiring a TERA through the ITEDSA process have not received administrative funding for contracting or litigation costs,[266] although Senate Bill 245, amending ITEDSA, directs the Secretary of Interior to provide assistance and to provide the tribe with the funds it would otherwise expend running the environmental review process.[267] The Department of Energy Indian Energy Loan Guarantee Program has never been fully funded.[268] Clean Renewable-Energy Bonds,[269] intended to even the playing field between governments and private corporations utilizing the federal tax credits,[270] have also received grossly inadequate appropriations.[271] And the Trump Administration is proposing to drastically cut

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[264] Katie Fehrenbacher, *Here's Why Solar Farms Are Booming in the U.S.*, FORTUNE (Sept. 16, 2016), http://fortune.com/2016/09/12/solar-panel-farms-boom/ [https://perma.cc/3BL7-GBNV].

[265] Eric Wesoff, *SunPower and NRG's 250MW Solar Project Closer to Reality*, GREEN TECH MEDIA (2011), https://www.greentechmedia.com/articles/read/sunpower-and-nrgs-250-mw-california-valley-pv-project-closer-to-reality#gs.IyFd2_Q [https://perma.cc/G8LT-F3ZW] (last visited Jan. 11, 2019).

[266] *See* COHEN (2012), *supra* note 99, at 1361 (citing NATIONAL CONGRESS OF AMERICAN INDIANS, NATIONAL POLICY WORKGROUP ON CONTRACT SUPPORT COST, FIRST INTERIM REPORT (1998) (discussing underfunding of self-determination contracting)). Senate Bill 245, described further in Part IV, contains provisions that call for the Department of the Interior to provide technical resources, but the consequences of the bill's passage are not yet known. *See* Indian Tribal Development and Self-Determination Act Amendments of 2017, Pub. L. 115-325, § 104.

[267] 25 U.S.C.A. § 3502 (2018); 25 U.S.C.A. § 3504(g) (2018).

[268] S. COMM. ON INDIAN AFFAIRS, 111TH CONG., INDIAN ENERGY AND EFFICIENCY CONCEPT PAPER 3, http://www.indian.senate.gov/public/_files/IndianEnergy.pdf [https://perma.cc/UE2D-BPPC] (last visited Jan. 11, 2019).

[269] *See generally* NAT'L RURAL ELECTRIC COOP. ASS'N, CLEAN RENEWABLE ENERGY BONDS: COMPARABLE RENEWABLE GENERATION INCENTIVES (2006), http://www.energytoolbox.org/gcre/bibliography/169_cleanrenewableenergybonds.pdf [https://perma.cc/E3DZ-EPUX] (describing clean renewable energy bonds and comparing them with federal tax credits).

[270] *See* discussion *infra* Part II.

[271] Michael Connolly Miskwish, *Commercial Scale Wind Industry on the Campo Indian Reservation*, NAT. RESOURCES & ENV'T 25, 27 (2008).

already underfunded programs, including vital Department of Agriculture initiatives such as the Rural Utilities Service,[272] and the Department of Energy clean energy research budget by 72%.[273]

Tribes cannot access the general capital markets in part (but not wholly) due to the federal government's incompetence.[274] And while tribes may issue tax-exempt bonds for certain portions of larger projects, other forms of tribal debt financing and conduit financing are unavailable.[275] Commercial lenders are hesitant to engage in financing for a project when the title to the land is uncertain. The Bureau of Indian Affairs does not have the data and support systems for verifying and tracking lease ownership,[276] leading to slow and costly title search processes. Following the Indian Trust Fund Management Reform Act of 1994, regional title and records offices maintained by the Bureau are the principal repositories for ownership records affecting Indian land titles.[277] But title examiners note the records system is difficult to use[278] and information is incomplete without a simultaneous search of state and country records. Further, the Trust Asset and Accounting Management System, established in 1994, does not accurately reflect ownership, as many transactions approved by the Bureau were not recorded in the land title and records office when they occurred.[279] Bureau of Indian Affairs' title searches had

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[272] Jose A. DelReal, *Heavy cuts to rural development and infrastructure in latest Trump budget*, WASHINGTON POST (May 23, 2017), https://www.washingtonpost.com/news/post-nation/wp/2017/05/23/heavy-cuts-to-rural-development-and-infrastructure-in-latest-trump-budget/?utm_term=.fcad0aaa72a9 [https://perma.cc/J36H-VQA6].

[273] Gavin Bade, *Report: Trump budget seeks 72% cut to DOE clean energy research*, UTILITYDIVE (Feb. 1, 2018), https://www.utilitydive.com/news/report-trump-budget-seeks-72-cut-to-doe-clean-energy-research/516105/ [https://perma.cc/4TPF-GFQL].

[274] *See generally* Gavin Clarkson, *Accredited Indians: Increasing the Flow of Private Equity into Indian Country as a Domestic Emerging Market*, 80 U. COLO. L. REV. 285 (2009) (explaining how securities laws make it difficult for tribes to gain access to markets). *See also* Gavin Clarkson, *Wall Street Indians: Information Asymmetry and Barriers to Tribal Capital Market Access*, 12 LEWIS & CLARK L. REV. 943 (2009); Mills, *supra* note 177.

[275] For a discussion of tax-exempt bonds and their applicability, see COHEN (2012), *supra* note 99, at 1352–55. *See also* Dreveskracht, *supra* note 90, at 133. For a discussion of tribal debt financing, see generally COHEN (2012), *supra* note 99, at 1350; TOWNSEND HYATT, PERRY E. ISRAEL & ALAN BENJAMIN, AN INTRODUCTION TO INDIAN TRIBAL FINANCE 6 (Orrick, Herrington & Sutcliffe 2005). For an explanation of conduit financing's rise and fall, see COHEN (2012), *supra* note 99, at 1354.

[276] S. Rep. No. 115-84 at 5 (2017).

[277] Pub. L. No. 103-412, 108 Stat. 4239 (1994) (codified as amended at 25 U.S.C. § 4001–61). *See also* 25 C.F.R. pt. 150 (2011).

[278] *See* Robert P. Hill, *Title Repositories, recording, and constructive notice*, 29 ROCKY MTN. MIN. L. INST. 469, 479–80 (1984).

[279] Shipps, *supra* note 206, at 37–38.

a 113-year staff backlog for title search requests in 2003 and "some Indians have waited up to six years to get a title search report that other Americans could get in a few days."[280]

If federal tax credits were available for tribal-owned projects, the problems described above would be less significant. But tribes do not pay federal taxes, and they therefore do not receive the main incentives driving wind and solar development outside of Indian country.[281] Tribal-owned projects therefore must have access to non-tax incentives. Since wind and solar development aligns with national security interests, and federal incentives have historically served to disadvantage tribal ownership, enacting federal laws that increase financing, whether through existing programs, real reform at title offices, or through new incentives, would serve national interests while also remedying the inequity created by renewable energy policy thus far.

C. State Taxation and Federal Tax Credits Put Projects on Indian Lands at a Competitive Disadvantage and Push Tribes into a Lessor-Lessee Relationship with Non-Indian Developers

Tax issues are central to all business transactions, and renewable energy projects in Indian country are no exception. But the current federal tax incentives, when coupled with state taxation of non-member activity on reservations, create an ecosystem that encourages tribes to assume passive, lessor roles. Both the federal and state tax laws must be adjusted to promote ownership and its attendant benefits.

1. Federal Tax Incentives Put Tribes Seeking Ownership Interests at a Competitive Disadvantage

The problem is simple: renewable generators are financed with tax incentives that tribes cannot benefit from. Nor can tribes transfer (i.e., sell) those credits. Indian tribes, and Indian-owned corporations, including Section 17 corporations, are not subject to federal income taxes.[282] If a tribe or tribal corporation were to own 50% of a project, only the

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[280] Haddock & Miller, *supra* note 253, at 213 (citing John Stromnes, *Indian Housing Woes Outlined*, MISSOULIAN (June 13, 2003), https://missoulian.com/news/state-and-regional/indian-housing-woes-outlined/article_c0ab9ab2-bb47-584e-b0a5-9cf735224edb.html [https://perma.cc/MPX9-3MLV].

[281] *See* Ravotti, *supra* note 29, at 303.

[282] Rev. Rul. 67-284, 1967-2 C.B. 55, 58, *modified on another issue by* Rev. Rul. 74-13, 1974-1 C.B. 14.

remaining 50% would receive the tax credits that make such projects economically feasible. This creates a fundamental trade-off between tribal ownership/control and finance-ability, leading to a default lessor-lessee relationship under either the Indian Long-Term Leasing Act or HEARTH, rather than joint ventures or other structures that would allow tribes to capture the potential upside.[283] If the tribe did own the project, it would be uncompetitive and not financeable.[284]

How do the tax incentives work? For the past ten to fifteen years, the Investment Tax Credit, Production Tax Credit, and Advanced Depreciation Rates, described in Part I, have made solar and wind projects competitive with traditional fossil fuel generation.[285] The tax credits have been regularly extended over the past ten years,[286] causing an ebb and flow of projects, as developers hesitate to invest until the extension is assured, and enter into a flurry of agreements before each successive extension is set to expire. The Production Tax Credit and the Investment Tax Credit are usually captured via a tax-equity flip partnership model.[287] On its face the arrangement is bizarre. The tax benefits of the project outweigh the federal taxes owed. But tax benefits are only captured if the entity claiming them has a sizeable tax bill to offset, meaning that most tax-equity investors are large U.S. banks, which functionally purchase the tax credits from the project developer. Usually, the tax-equity investor owns 99% of the project (and therefore receives the tax credit) until the investor meets its return requirement, at which point there is a "flip" and ownership reverts to the other party.[288] The flip may occur five to

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[283] Slade, *supra* note 167, at 3B-32–34.

[284] Shahiniam, *supra* note 80, at 274–77 (explaining how the tax credit serves to put tribally owned projects at a competitive disadvantage through comparative economic analyses). *See also* Kronk Warner, *supra* note 2, at 1041–42.

[285] Alternative models for promoting renewable energy development do not foreclose indigenous groups from partial or joint ownership of projects, as the federal tax credit approach does. Many countries provide feed-in tariffs, or guaranteed rates for electricity generating from renewable sources. Ontario, Canada uses a feed-in tariff model. The Chippewas of Georgina Island First Nation entered into a joint venture for a 20MW wind farm with an electrical co-operative—the tribe holds 51% of the ownership and receives 51% of the total income from the guaranteed rate over a period of twenty years. Hamilton, *supra* note 30, at 1406–07.

[286] U.S. DEP'T OF ENERGY, PUB. NO. DOE/EE-1509, LEVERAGING FEDERAL RENEWABLE ENERGY TAX CREDITS 2 (2016), https://www.energy.gov/sites/prod/files/2016/12/f34/Leveraging_Federal_Renewable_Energy_Tax_Credits_Final.pdf [https://perma.cc/N8CZ-475V].

[287] For an explanation of the flip model at work in Indian country wind projects, see Masterson, *supra* note 1, at 346–48.

[288] Various other tax equity investment structures are deployed by solar and wind developers as well, including sale-leaseback models, in which the tax equity investor buys

nine years after operation for an Investment Tax Credit–based (mostly solar) project or after ten years for a Production Tax Credit–based (mostly wind) project. The ownership stake is key, as the allocation of credits is proportional to the ownership interest.[289] Tribes could enter into a flip arrangement with a non-Indian lessor, under which the lessor owns 99% of the project for the first ten years and then transfers ownership to the tribe. The IRS approved such an agreement in a Private Letter Ruling in 2013,[290] but Private Letter Rulings do not serve as precedent for other parties and "[m]ost investors aren't willing to bank on a [Private Letter Ruling] for a different project when making an investment of hundreds of millions."[291] Further, this structure requires the tribe to give up ownership of essential infrastructure for up to a decade (and creates state tax issues, addressed below).

Perhaps inadvertently, the federal government created a marketplace from which tribes were structurally excluded: tribes cannot sell the federal tax credits they would otherwise gain from an ownership interest. In a 2007 article, Mark Shahiniam makes a compelling case for allowing tribes to freely transfer the Production and Investment Tax Credits.[292] Shahinian presents a normative argument for equitable or favorable tax treatment of tribes, based upon the federal trust responsibility, and he quotes Robert Williams: "federal Indian country development policy must address itself to the structural barriers currently preventing tribal economic and social self-sufficiency."[293] Depriving tribes of the key federal incentive for renewable energy development is a structural barrier. If the credits were tradable, the federal government would "meet its goals of energy development, reduced tribal dependency and increased tribal sovereignty."[294] Since federal law "burdens the freedom of tribes to develop their own path towards building sustainable communities," a 2011 House bill proposed to make the credits transferrable but died in Congress.[295] Similar House and Senate bills were introduced in 2015 and also did not

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the project and key contracts (including the Power Purchase Agreement) from the developer, which then leases the project back from the tax equity owner.

[289] For the Production Tax Credit, see 26 U.S.C. § 25 (2006).

[290] I.R.S. Priv. Ltr. Rul. 201310001 (Dec. 5, 2012).

[291] E-mail from Michael Connolly Miskwish, M.A., Resource Economist, to author (Jan. 10, 2018) (on file with author).

[292] Shahiniam, *supra* note 80.

[293] *Id.* at 272 (quoting Robert A. Williams, Jr., *Small Steps on the Long Road to Self-Sufficiency for Indian Nations: The Indian Tribal Government Tax Status Act of 1982*, 22 HARV. J. ON LEGIS. 335, 339 (1985)).

[294] *Id.*

[295] Dreveskracht, *supra* note 1, at 81–82.

make it to a vote.[296] As discussed in Part I, the tax credits are rapidly becoming unnecessary, as renewable energy technologies reach price parity with traditional energy sources. The credits are being phased out. The potential ramifications of that shift are discussed in Part IV.

The passive lessor-lessee arrangement is dissatisfying for many tribes, who would justifiably rather have an ownership stake.[297] The payments, whether royalties or payments-in-lieu-of-taxes, are quite small compared to the project profits; the landowner payments may be as little as one-fiftieth the income from the turbines themselves.[298] State taxation of non-Indians doing business in Indian country makes the lessor-lessee arrangement even more frustrating for tribes.[299]

2. State Taxation Strangles Indian-Owned Projects

It would be difficult to overstate the extent to which state taxation suppresses economic development involving non-Indian business partners in Indian country. Once the state asserts taxes, tribes are forced to make concessions to avoid double taxation on non-Indian partners. Those concessions cause tribes to lose out on valuable income, and to face the attendant frustration when a neighboring state or county derives greater value from the project than the sovereign that possesses the very land and provides the services that make the project possible.[300] While the federal tax incentives force tribes into a passive role in the first place, state taxation then allows the state to reap the majority of the tax benefits.

This subsection first explains why the potential for double taxation arises. The Supreme Court largely created the problem through common law rules permitting state taxation of non-Indians in Indian country. That doctrine stifles all economic development on reservations, not just wind and solar projects. Next, the Article argues that state

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[296] *See* Tribal Tax Incentive for Renewable Energy Act of 2015, H.R. 3043, 114th Cong. (1st Sess. 2015). *See also* Tribal Tax Incentive for Renewable Energy Act of 2015, S. 1749, 114th Cong. (1st Sess. 2015).

[297] Bethany C. Sullivan, *Changing Winds: Reconfiguring the Legal Framework for Renewable-Energy Development in Indian Country*, 52 ARIZ. L. REV. 823, 835–36 (2010); *see also* Shahiniam, *supra* note 80, at 280.

[298] Shahiniam, *supra* note 80, at 281.

[299] Telephone Interview with Michael Connolly Miskwish, M.A., Resource Economist (Jan. 12, 2018) [hereinafter Telephone Interview with Michael Connolly Miskwish].

[300] Michael Connolly Miskwish, Newsletter, *Capturing the Full Benefit of On-Reservation Renewable Energy*, 7 A.B.A. SEC. ENV'T, ENERGY & RES.: NATIVE AM. RES. COMM. (2010) (explaining how the benefits from a large wind project accrue to the state, rather than to the tribe).

taxation on the sales of energy from *Indian*-owned projects is preempted. Lastly, there follows a description of the Bureau of Indian Affairs' failed attempt to remedy through regulation the common law doctrine created by the Supreme Court. Part IV advocates for a more durable legislative fix to provide non-Indian business partners with the legal certainty necessary for investment.

a. The Potential for Double Taxation

Taxation issues are highly contested since

> [n]o other issue in Indian law raises the emotional response from the non-Indian community as does the actuality of or the prospect of Indian tribes exercising jurisdiction over non-Indians . . . In the same way non-Indians fear Indian jurisdiction, Indians do not want to be subject to state jurisdiction.[301]

Tribes, as sovereign entities, have the power to tax both members and non-members operating on leased lands, subject to a few court-created limitations.[302] If a project is owned and operated by an Indian tribe or tribal corporation, then it is exempt from state taxation and subject only to tribal tax. However, once tribes enter into partnerships with, or lease lands to, non-Indian corporations, which they must do in order to capture the federal tax incentives, the muddled doctrine on state taxation of non-Indians in Indian country comes into play. And with state tax comes the potential for double taxation.

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[301] Tanana & Ruple, *supra* note 26, at 15 (quoting JAMES M. GRIJALVA, CLOSING THE CIRCLE: ENVIRONMENTAL JUSTICE IN INDIAN COUNTRY 111 (2008)).

[302] Merrion v. Jicarilla Apache Tribe, 455 U.S. 130 (1982). *See also* Kerr-McGee v. Navajo Tribe, 471 U.S. 195, 196–97 (1985) ("Power to tax members and non-Indians alike is surely an essential attribute of such self government"). This rule is stated narrowly because the Court has recently trimmed a more general rule about tribal authority to tax in Indian country in two ways. In 2001, the Court held tribes may not tax non-member activity on non-Indian fee land inside of Indian country unless there is a contractual relationship with the tribe or the activity imperils the political integrity of the tribe. *See* Atkinson Trading Co. v. Shirley, 532 U.S. 645 (2001). This holding is patently absurd: tribes still provide services such as firefighters to the non-Indians on fee land within the reservation boundary, and the ruling also places that non-Indian activity beyond the de facto reach of any sovereign entity due to lack of both state and federal law enforcement in Indian country. However, until Congress acts, Atkinson is the law. Strate v. A-1 Contractors, 520 U.S. 438 (1997) created another exception to the old, more general rule about tribal authority in the context of activity on a right of way through a reservation, see discussion *infra* Section IV.A.3.b.

Following recent Supreme Court cases, states often successfully assert taxes on non-Indians doing business in Indian country. In the Court's eyes, "all sovereigns are equal, but some are more equal than others."[303] That is to say, both the tribe and the state may tax the on-reservation activity of *non-members*, but only states can tax off-reservation activity.[304] In *Montana v. Blackfeet Tribe of Indians*, the Court held the state could not tax royalties paid to the Blackfeet Tribe from a non-member company operating on the reservation.[305] Yet less than five years later, in *Cotton Petroleum Corp. v. New Mexico*, the Court upheld a state severance tax on a non-Indian extractive company, which formed the very basis of the royalties in *Montana*.[306] "Assuming that the states, the tribes, the companies, the consumers—everyone that is except the courts—are interested in the revenues that they pay and receive for a given output rather than in filamentary legal distinctions, then according to rudimentary economic theory, *Cotton Petroleum* seems simply to undo *Blackfeet Tribe*."[307] But *Cotton Petroleum* is the law, and it allows widespread state tax on non-Indian business operating on lands leased from the tribe.

In cases such as *Cotton Petroleum*, the courts have permitted state taxation on the grounds that the state provides services to the non-Indian investor, the tax does not burden the tribe, and the state regulates some aspect of the activity. However, it is unclear what services the state would provide to a wind or solar developer constructing a project wholly within Indian country. Under a functional (or reality-based) analysis, the tax *does* burden the tribe by driving away investment, and the state provides only incidental regulation of a state-regulated purchasing utility.

While the commerce clause prohibits double taxation as between two states, in cases of concurrent jurisdiction like *Cotton Petroleum*, the Court crafted no remedy for tribal-state conflicts. Both sovereigns may therefore tax the same undertaking, which causes an overall economic loss.[308] In *Cotton Petroleum*, the Court bizarrely claimed that state taxation placed no economic burden on the tribe.[309] But if tribes wish to invite non-members into tribal territory for economic development purposes and the state asserts a tax, in reality, unless the tribe reduces its own

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[303] Haddock & Miller, *supra* note 253, at 188.
[304] *Id.*
[305] Montana v. Blackfeet Tribe of Indians, 471 U.S. 759 (1985).
[306] Cotton Petroleum Corp. v. New Mexico, 490 U.S. 163 (1989).
[307] Haddock & Miller, *supra* note 253, at 189.
[308] *Id.* at 187; *see also* Fritz Machlup & Martha Taber, *Bilateral Monopoly, Successive Monopoly, and Vertical Integration*, 27 ECONOMICA 101 (1960).
[309] *Cotton Petroleum*, 490 U.S. at 186.

tax, no foreign business will move onto the reservation.[310] This results in an evisceration of practical tribal taxing power on tribal lands, a weakening of tribal sovereignty, patent unfairness, and overall loss.

b. State Tax on Sales of Electricity from Tribal-Owned Projects Should Be Preempted

Sales of electricity from a tribal-owned project operating in Indian country should be, under the current law, immune from state taxes; since the value of the energy is generated on the reservation, state taxation on sales of that energy should be preempted. Generally speaking, unless Congress clearly authorizes it, states may not tax tribes, tribal members, or tribal corporations operating in Indian country.[311] And were the state to attempt taxing the tribe or its corporation, sovereign immunity will protect it against any attempts to collect taxes (allegedly) owed.[312] Incorporating a tribal company followed by a project company subsidiary would therefore insulate that project company from state taxation.[313]

Although state taxes should still be preempted, a potential wrinkle emerges if a tribal project company sells the energy to a non-tribal utility providing transmission services and the point of sale occurs on the reservation. In that case, the state may attempt to tax the sale. When a non-Indian purchases an item in Indian country such that the state tax's legal incidence falls upon the purchaser (e.g., an excise tax), federal courts apply a balancing of interests test and have upheld state taxes on the non-Indian purchaser.[314] But courts will find state taxes are preempted when the value of the product is generated on the reservation.[315] The holdings of *Colville*[316] and *Bracker*[317] best illustrate how the value-generation

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[310] Sullivan, *supra* note 297, at 837–38.
[311] McClanahan v. State Tax Comm'n of Ariz., 411 U.S. 164, 175 (1973) (holding that the tribe's inherent sovereignty compelled the presumption that Arizona could not assert income tax against a tribal member on her reservation). *See also Blackfeet Tribe*, 471 U.S. at 762 (holding state taxation of a tribe's royalty interests from oil and gas produced on Indian lands under leases to a non-member company is forbidden absent a clear statement from Congress to the contrary). This blanket rule does not always hold for income earned outside of Indian country. *See, e.g.*, Mesclero Apache Tribe v. Jones, 411 U.S. 145, 145 (1973) (upholding a state tax on a tribal ski resort outside of Indian country).
[312] Michigan v. Bay Mills Indian Community, 134 S. Ct. 2024, 2029 (2014).
[313] COHEN (2012), *supra* note 99, at 1326.
[314] Washington v. Confederated Tribes of the Colville Indian Reservation, 447 U.S. 134, 138 (1980).
[315] White Mountain Apache Tribe v. Bracker, 448 U.S. 136, 138 (1980).
[316] *Washington*, 447 U.S. at 138.
[317] *White Mountain Apache Tribe*, 448 U.S. at 138.

test is applied. In *Washington v. Confederated Tribes of the Colville Reservation* (1980), the Court upheld state taxation of Indian to non-Indian, on-reservation cigarette sales.[318] The tribe had purchased cigarettes at wholesale and then resold the cigarettes on the reservation at a lower price than off-reservation stores did (because the tribal tax was less than the state tax).[319] The Court found the value of the cigarettes was not generated on the reservation, and therefore the state had a legitimate interest in taxing the value created within its own jurisdiction.[320] Juxtaposed against *Colville*, in *White Mountain Apache Tribe v. Bracker* (1980), the Court held a state tax on a non-member company contracting with the tribe to harvest timber was preempted.[321] The tribe generated the value of the timber on the reservation through forestry management programs—i.e., the trees grew on Indian lands—and so the state had no legitimate interests beyond raising revenue.[322] *Colville* and *Bracker* suggest that if a tribal corporation generates renewable energy from resources on its lands, including sunlight or wind, and then sells the electricity to a non-member utility in Indian country, courts should find state tax on the sale to be preempted. However, since these rules are judge-made, the attendant uncertainty of future rulings will likely deter parties from entering any business arrangement that tacitly assumes state tax preemption.

c. The Failed Attempt to Fix Dual Taxation Through Regulation

The Department of the Interior recognized that activity by non-Indians on leased lands should not generally be subject to state taxation. The Department therefore attempted to codify the value-generation test in *Bracker*, and establish a presumption that state taxes would be preempted. However, it is likely beyond the agency's legal power to create such a rule.

Under current law, state tax assertions for on-reservation, non-Indian activity are stronger when the non-Indian owns the project. And non-Indian corporations own most of the successful utility-scale wind and solar projects, built upon lands leased from the tribe. Under *Bracker*, a balancing test of tribal, state, and federal interests determines whether state taxes are preempted on such projects.[323] States assert an interest on the grounds that the non-Indians use state services. But renewable energy

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[318] *Washington*, 447 U.S. at 161.
[319] *Id.* at 144–45.
[320] *Id.* at 154–55.
[321] *White Mountain Apache Tribe*, 448 U.S. at 138.
[322] *Id.* at 151–52.
[323] *Id.*

development projects are "the closest thing you can get to an impact free development to the state."[324] Therefore, state tax *should* be preempted.

The Department of the Interior agreed, and attempted to remedy the dual taxation problem by promulgating regulations under the HEARTH Act that would put a thumb on the *Bracker* balancing scale, thereby preempting state and local taxes on activities conducted on both leased Indian lands and on rights of way.[325] The regulation would resolve overlapping state and tribal tax authority on non-member lease activity in favor of the tribe. This would be consistent with *Bracker*, as the value is undoubtedly created on the reservation,[326] but the codification would remedy the uncertainty created by the case-by-case balancing approach.

However, the Department of the Interior likely does not have the authority, through regulation, to alter the court-created *Bracker* balancing test such that state taxation would always be preempted for non-Indian activity on leased lands. In addition to the question of legal authority, the wording of the provision undercuts its intent: the state tax preemption is "[s]ubject only to applicable Federal law."[327] In *Agua Caliente Band of Cahuilla Indians v. Riverside County* (2017), the U.S. government argued that the applicable federal laws are *Bracker* and *Cotton Petroleum*.[328] With that stance, the courts are likely to continue a case-by-case weighing of federal, state, and tribal interests to determine whether a given state tax is preempted.[329] Relying on the *Bracker* balancing test is a poor method to avoid potential double taxation.[330] Non-Indian business partners require more legal certainty.

D. Lack of Trust Raises the Cost of Projects with Non-Indian Business Partners

History and cultural narratives create higher costs for doing business between Indian and non-Indian partners working on the wind

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[324] Connolly Miskwish, *supra* note 300.
[325] 25 C.F.R. § 162.017(b) (2015); 25 C.F.R. § 169.11 (2018).
[326] Sullivan, *supra* note 297, at 848–49.
[327] 25 C.F.R. § 162.017(a)–(b) (2015).
[328] *See* Agua Caliente Band of Cahuilla Indians v. Riverside County, 181 F.3d 725 (C.D. Cal. 2016).
[329] Telephone Interview with Michael O'Connell, *supra* note 147; *see also* Seminole Tribe of Florida v. Stanburg, 799 F.3d 1324 (11th Cir. 2015) (deciding not to follow the categorical tax exemption under the Bureau of Indian Affairs regulations, but instead engaging in a particularized balancing test before finding that the state tax was preempted).
[330] Strategies to address the problem are discussed *infra* Part IV.

and solar installations. Many of these issues are not strictly "legal" in nature, but rather could be described as issues of trust: the tribe or tribal members' trust in the foreign entity and the foreign entity's trust in the tribe. Federal misfeasance in regards to resource extraction in Indian country, along with the complexity of business structures underlying renewable projects, make tribes reluctant to trust their non-Indian partners. For the non-Indian business partners, three distinct issues create trust problems: (1) uncertainties in the law; (2) a perceived risk that is higher than reality bears out; and (3) misunderstanding and exaggeration of regulatory processes and delays unique to Indian country. If a tribe decides to pursue a renewable energy project in partnership with a non-Indian entity, both parties must recognize the need to build trust over a multi-year time frame. Deliberative efforts are necessary to overcome both the false narratives and true histories relating to development in Indian country.

1. The History of Resource Extraction in Indian Country and the Complexity of Business Structures Underlying Renewable Projects Lead Tribes to Distrust Potential Partners

The history of resource exploitation, pernicious aspects of which endure in the existent renewable projects' structures, casts a long shadow over energy development in Indian country. Further, energy project financing requires complex structures, which may raise a fear of being taken advantage of on the part of the tribe.

Tribes have good reason to be wary of foreign entities offering to help "develop" the land. "[T]he process of exploitation of resources on Indian lands has significant similarities to the third world economic colonialism of the early twentieth century."[331] Starting in the late nineteenth century, and for nearly 100 years thereafter, tribes played a largely passive role in mineral development.[332] Under the Indian Mineral Leasing Act, the federal government was tasked with ensuring tribes received "the greatest return from their property,"[333] yet the leases provided "only minimal levels of income."[334] Consistent federal mismanagement of royalties further

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[331] Connolly Miskwish, *supra* note 300.
[332] Judith V. Royster, *Mineral Development in Indian Country: The Evolution of Tribal Control over Mineral Resources*, 29 TULSA L. J. 541, 552 (1993).
[333] S. Rep. No. 985, at X (1927); H.R. Rep. No. 1872, at X (1938).
[334] MARJANE AMBLER, BREAKING THE IRON BONDS: INDIAN CONTROL OF ENERGY DEVELOPMENT 74 (1990).

reduced incomes to tribes, leading to the appointment of the Linowes Commission in 1982, which identified "serious inadequacies" in collection, theft and fraud, lack of enforcement, and errors in reporting.[335] Incredibly, the federal government operated its royalty collection and management on an industry "honor system."[336] Obviously, there were problems with this method. Today, tribes continue to bear the harms of extractive industries, the benefits of which continue to largely accrue outside of Indian country. In the energy domain, the opening section describes coal plants' deleterious effects on tribal health and environments. Things have improved, but movement in the right direction is not assured: recently the Trump Administration floated the idea of privatizing oil and gas ownership in Indian country, a notion reminiscent of nineteenth century Indian law policies.[337]

Some historical problems with extraction are repeated in the structures required to capture the federal tax incentives, which makes tribes hesitant to engage. The tax and leasing structures compel tribes into a passive lessor-lessee relationship, a similar position to historical arrangements for mineral development. As noted above, this can justifiably cause frustration, as tribes do not reap the full benefits of the projects on their lands. Michael Connolly Miskwish, who is the former Treasurer of the Campo Kumeyaay Nation and was deeply involved in the Kumeyaay project, describes how incomes from a wind project on leased land in Indian country are divvied up between the state and the tribe.[338] Under his analysis, the state receives *more* income from the project than the tribe. The state "become[s] a partner in the project without any risk, responsibility, or investment," while the tribe "shoulders the responsibility for site protection, infrastructure maintenance, environmental protection, fire and emergency services" out of its royalty earnings.[339] This apparent unfairness likely deters tribes from pursuing new renewable energy projects with non-Indian entities.

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[335] Royster, *supra* note 332, at 567; Linowes Report: Remarks on Receiving the Final Report of the Commission On Fiscal Accountability of the Nation's Energy Resources (Jan. 21, 1982) (stating the government "maintains a stifling bureaucratic presence in Indian country, and fails to deal with tribal governments as responsible partners in our federalist system"); Special Committee on Investigations of the Select Committee on Indian Affairs, Final Report And Legislative Recommendations, 101st Sess. (Nov. 1989) at 5.

[336] Royster, *supra* note 332, at 567.

[337] Valerie Volcovici, *Trump advisors aim to privatize oil-rich Indian reservations*, REUTERS (Dec. 5, 2016), https://www.reuters.com/article/us-usa-trump-tribes-insight/trump-advisors-aim-to-privatize-oil-rich-indian-reservations-idUSKBN13U1B1 [https://perma.cc/M8KJ-ZSHG] (last visited Jan. 11, 2019).

[338] Connolly Miskwish, *supra* note 300.

[339] *Id.*

Lastly, the business models for renewable development *seem* suspicious to the uninitiated: how bizarre is the idea that a massive, distant bank has partial ownership in order to get some sort of tax benefit? However, non-Indian developers can mitigate this problem by integrating affirmative steps to build trust over time into project planning.[340] The tribe may be more skeptical than other landholders of business arrangements that would seem ordinary to the developer. Many solar or wind developers sell projects to other entities, including tax-equity investors, while the developer continues to operate and maintain the installation. This may be challenging to explain. First Solar, the developer of the Moapa Solar project described in Part III, introduced the owners to the tribal leaders in person, a process that developers would not typically undertake.[341] For the Moapa project, the tribe desired to know which exact entity would own the solar project on their lands to make sure there was no connection between that entity and the utility behind the neighboring coal plant.[342] As a final note, developers must be careful not to surprise the tribe with proposed changes for the lease or other payments.[343] Since the price for electricity is unsteady and project development takes multiple years, the economics may demand developers respond to changes in the market. This could cause a tribe to feel betrayed, as the developer must turn to the tribe and ask for new concessions on royalties or other incomes in order to keep the project financeable.

2. For Non-Indian Developers, Uncertainty and Perceived Risk Create Distrust

Three discrete issues create trust problems for non-Indian business partners: (1) uncertainties in the law; (2) high perceived risks; and (3) a misconception that Indian country projects face exceptionally long regulatory delays.

a. Uncertainties Due to Court Holdings and a Thin History of Tribe-to-Non-Indian Contracting

Developers will only invest if they trust that the background institutions are reliable and provide certainty, but in Indian country the

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[340] Telephone Interview with George Burdette, *supra* note 10 (this paragraph is derived entirely from the interview with Mr. Burdette).
[341] *Id.*
[342] *Id.*
[343] *Id.*

courts have produced areas of extreme *un*certainty, especially regarding tax treatment.[344] But in addition to the tax issues, thin economic and legal histories in a given reservation make investors hesitant: it takes time and experience for participants to develop trust in the legal frameworks underpinning and enforcing agreements with a tribe or tribal corporation. This reality works against tribes, as the need for certainty and trust is particularly acute when one of the agreeing parties is a sovereign entity with immunity. The costs thereby increase, as tribes "more often pay high risk premiums than similar non-tribal investors."[345] During negotiations, the developer must be sensitive to the challenges, risks, and costs faced by the tribe, including the "Sovereign's Paradox": the "difficulty that an entity with power to compel involuntary outcomes has in negotiating voluntary ones."[346]

b. True Risks Are Lower than Many Believe and Can Usually Be Mitigated

Many non-Indian developers may be unduly afraid of investing in Indian country. But the perceived risks are significantly higher than the reality bears out, and relatively straightforward steps significantly mitigate them. When advocating for reform to legal structures in Indian country, federal lawmakers marshal horror stories about the length of time or the cost involved. The literature then repeats those stories and non-Indian businesspeople, often with limited experience interacting with tribes, read and hear those stories. That constructs a narrative over time that says: investing in Indian country is too risky.[347] But those stories are often either overstated or are not applicable to wind and solar development.[348]

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[344] Haddock & Miller, *supra* note 253, at 220 (describing how clear rules, including the rule in favor of tribal immunity, enable business investment while unclear rules deter it); *see also* Sullivan, *supra* note 297, at 837–38.

[345] Haddock & Miller, *supra* note 253, at 173–74.

[346] *Id.* at 222.

[347] *See* S. Rep. No. 115-84 at 5–6, 25 (2017) (quoting U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 198). The Senate report repeats a story from the GAO report stating, "one private developer indicated it was nearly 65 percent more costly to develop on Indian lands than non-Indian lands." The GAO report does not indicate who this person was, nor whether the information they provided was grounded in fact. S. Rep. at 25.

[348] *See generally id.* at 4–5. The time required for NEPA compliance is a common complaint. NEPA processes are further addressed below. In short, since the environmental impacts of a mining project are more significant than for a renewable energy project, the corresponding NEPA review for the former is more protracted than for the latter.

Further, by simply being attuned to racist narratives in American culture, potential investors might unreasonably fear that tribes are unreliable partners.[349] It is true that tribes are often small and therefore could abruptly shift policy. Those policy shifts might affect rights granted in previous deals.[350] But if the local population is a stakeholder in the agreement and the most basic steps are taken to separate the venture from the control of the tribal government, as through a Section 17 corporation, the potential for political interference is drastically reduced.[351]

Fairly basic contractual provisions adequately protect foreign investors against policy changes, and mitigate other key perceived risks.[352] For example, non-Indian investors may fear tribal courts, despite the fact that they generally work quite well; or fear tribal management of resources, despite it being more efficient than Bureau of Indian Affairs' management of federal lands generally.[353] But so long as tribal law permits it, tribal entities and non-Indian investors may agree to settle disputes through commercial arbitration, rather than through the court systems of either the tribe or the state. As with the federal or state governments, tribes have sovereign immunity unless explicitly waived by them or by Congress exercising its plenary authority.[354] While non-Indian developers must be sensitive about requesting them, tribal sovereign immunity waivers are possible and are enforceable, so long as permitted by tribal law.[355]

c. Concerns About Regulatory Delays Are Overblown

Regulatory processes may be long, but for large construction projects, those processes are protracted whether the project is located inside or outside a reservation. Also, the process can be managed and may be shorter than it would be for alternative sites. Developers worry about the cost of delays because of the high capital requirements for utility-scale wind and solar installations.

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[349] Haddock & Miller, *supra* note 253, at 178, 191, 193.
[350] *Id.* at 202–04.
[351] CTR. FOR RESOURCE MGMT., *supra* note 91, at 7; *see also* Dreveskracht, *supra* note 1, at 101. Acting through a Section 17 corporation also provides better protection against state tax assertions. *See* Dreveskracht, *supra* note 90, at 129.
[352] *See* Slade, *supra* note 167, at 3B-38 (describing enforceability and stabilization clause provisions in contracts between tribes and developers).
[353] Haddock & Miller, *supra* note 253, at 207–10.
[354] Kiowa Tribe of Okla. v. Mfg. Technologies, Inc., 523 U.S. 751, 751 (1998).
[355] Haddock & Miller, *supra* note 253, at 194–95, 198. Such steps are one piece of resolving the Sovereign's Paradox, described above.

The processes required under NEPA are a common target for those concerned with regulatory delay, since environmental review and permitting often comprise a significant portion of a project's development time frame.[356] It is true that the NEPA environmental review process may create delays outside the control of the tribe and the non-Indian partner, since any person with standing can assert a violation.[357] Even in the absence of litigation, the NEPA process may take well over a year,[358] and project plans may trigger substantive issues (beyond NEPA's merely procedural requirements) under the Endangered Species Act, the Federal Aviation Act, and the National Historic Preservation Act.[359]

But NEPA delays should be considered in context, and the delays can be mitigated through simple steps.[360] While each tribe's governance system is different, typically the tribal council must approve a lease before the Bureau of Indian Affairs will approve it, which in turn triggers a NEPA review. If both the tribe and business partner understand the steps that begin that process, the NEPA process can begin early, before all details of the agreement are settled.[361] If a tribe is committed to a project, the review can proceed apace. The tribe is largely in control, as the Bureau of Indian Affairs considers its role to be assisting with the self-determination of the tribe.[362] Further, the NEPA analysis is commensurate with the action and perceived impacts; if a renewable energy project is planned for a desert or windswept landscape without significant cultural resources, the process moves relatively quickly.[363]

Further, the approval process for projects in Indian country may compare favorably against its alternative: wind and solar projects on

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[356] *See* Council of Energy Resource Tribes, *Tribal Environmental Review Process: Manual and Permits Directory* 44 (Dec. 1982).
[357] COHEN (2012), *supra* note 99, at 824.
[358] *See* Council of Energy Resource Tribes, *supra* note 356, at 90.
[359] *Id.* at 90–93. While the National Historic Preservation Act in particular may give "added gloss" to NEPA requirements, RODGERS, JR. & BURLESON, *supra* note 122, at 487, its provisions do not always provide robust protection for historical artifacts. RODGERS, JR. & BURLESON, *supra* note 122, at 488–89. *See also* Alice E. Walker, *Protecting Sacred Tribal Sites: The Lake Powell Pipeline Project*, *in* EMERGING ISSUES IN TRIBAL-STATE RELATIONS: THE ECONOMIC, CULTURAL, AND POLITICAL TRENDS AFFECTING TRIBAL-STATE INTERACTIONS 99 (2013 ed.); Indian Sacred Sites, Exec. Order 13,007 of May 24, 1996, 61 Fed. Reg. 26,771 (May 29, 1996); Dreveskracht, *supra* note 123, at 434 (describing Quechan opposition to a proposed solar farm that would have disturbed tribal artifacts).
[360] *See* Slade, *supra* note 167, at 3B-28–29 (describing NEPA processes in the context of mineral leases in Indian country).
[361] Telephone Interview with Chip Lewis, *supra* note 68.
[362] *Id.*
[363] *Id.*

state land, which would typically trigger the state equivalent of NEPA, and may be as long or longer than the federal NEPA process, particularly in states with strict environmental laws like California.[364] And most projects will cross over lands held by multiple owners and trigger a different array of permitting laws. For example, if the Moapa project, described in the upcoming section, were just outside the reservation, then it would have been on both Bureau of Land Management–owned and private lands, triggering the Nevada Utility Environmental Protection Act as well as NEPA. If the project were not built on Indian trust lands, the environmental review process would likely have been *longer*.[365]

3. Trust Issues Can Be Overcome

Both Indian and non-Indian parties to a renewable energy development agreement must understand the origins of, and be responsive to, the other side's trust and uncertainty issues. The lack of trust can be appropriately mitigated through advance planning, careful drafting, and negotiations that empower the communities hosting such projects to be stakeholders in the development's success. All utility-scale renewable energy projects are inherently risky, but when evaluating those risks, both tribes and non-Indian partners should resist mechanical acceptance of the historical narratives of exploitation and fear.

III. RECENT SUCCESSES PROVIDE LESSONS ON HOW TO BUILD RENEWABLE ENERGY PROJECTS IN INDIAN COUNTRY

This Section presents a series of brief case studies and covers all currently operational utility-scale wind and solar projects in Indian country. The successful projects demonstrate that, despite the many challenges described in Part II, tribes and their partners have been able to navigate those hurdles. The depth of the studies is necessarily limited by the author's lack of direct involvement in any of the projects described; the analysis is drawn from publicly available information and interviews with the participants. Each case study includes a fairly detailed description of the project: the business arrangement, participants, and the development process. In part, those details are intended to expand the base of knowledge for others considering building similar installations. Each case study serves a functional lesson: data points for developments under

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[364] *Id.*
[365] Telephone Interview with Michael O'Connell, *supra* note 147.

the current legal and policy framework. Toward that end, the author attempts to identify aspects or strategies of each project that contributed to its success. The lessons learned naturally tie into the final Section of the Article, leading to questions about how to reform the system to further empower tribal ownership and increase renewable energy development.

A. Kumeyaay Wind

The longest operating commercial scale renewable energy project in Indian country is on the Campo Kumeyaay Nation reservation in southern California.[366] This project succeeded because of firm commitment from the tribe, a fair amount of luck, the capture of federal tax incentives to cover the construction costs, and an ideal physical location. However, those tax incentives were only available because the tribe acted as a passive lessor to a commercial developer lessee. This allowed the tribe to bear less risk, but was ultimately dissatisfying for the tribe, so the Campo Kumeyaay Nation sought a greater ownership interest in the second round.[367] But the latter project, Kumeyaay II, sputtered out,[368] stymied in part by the challenges in financing and the interaction between the federal tax incentives and state taxes described in Part II.

By mid-2018, the Campo Kumeyaay Nation was working with the Bureau of Indian Affairs on the Environmental Impact Statement for a third Kumeyaay wind project.[369] It is too early to compare "Kumeyaay III" with the first two iterations, and both the contract terms and the background regulatory frameworks have changed over the last ten years.[370] Kumeyaay III may be the first commercial renewable energy project in Indian country to go through new, Trump Administration–imposed time

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[366] *See Tribal Energy Program, Presentation, Development & Deployment: Kumeyaay Wind II*, U.S. DEP'T OF ENERGY (Nov. 17, 2009), https://energy.gov/sites/prod/files/2015/12/f27/0911review_lachappa.pdf [https://perma.cc/4ERN-FZ99].

[367] Telephone Interview with Michael O'Connell, *supra* note 147.

[368] *Id.*

[369] *Id.*

[370] E-mail from Michael Connolly Miskwish, *supra* note 103. California state laws have changed and now allow for cities and counties to contract directly with renewable energy generators, without an intermediary utility. Since the Kumeyaay II project, the Department of Interior has attempted to preempt state taxation on the project through regulation (25 C.F.R. § 162; *see* discussion on "The Failed Attempt to Fix Dual Taxation through Regulation," below). The tribe is also in discussions with the State taxing authorities about the applicability of California sales tax. As for the contract itself, the tribe has a "fair market" buyout option at year twenty and the non-Indian developer is a new partner, offering significantly different terms from Kumeyaay II.

constraints on the NEPA process.[371] How that change affects project viability could challenge the author's assertion that concerns about regulatory delays are generally overblown.[372]

1. Kumeyaay I Succeeds

The first utility-scale wind farm in Indian country ("Kumeyaay I") has been operating since 2005 on the Campo Kumeyaay Nation's tribal trust lands, approximately fifty miles from San Diego.[373] The groundbreaking 50 MW wind farm (comprised of twenty-five turbines) took years to develop, attesting to the tribe's enduring commitment to climate change mitigation.[374] The Campo Kumeyaay were one of the first tribes to join the Climate Registry, a tool for collecting data on greenhouse gas emissions. The tribe intended Kumeyaay I to be a test run for future wind development, as the reservation contains high potential for a few hundred more MWs.[375] In the early 1990s, well before wind farms became a common source of electricity, Kenetech Wind Power approached the tribal council and suggested placing a met tower[376] to collect data.[377] The data was promising, but the parties never reached a deal because of a crisis in the wind industry at the time. Enron then acquired Kenetech and the necessary data was lost in the Enron bankruptcy.[378] But a former project manager from Enron, then working for the developer Superior Renewable, approached the tribe and suggested reconfirming the resource potential and proceeded to collect supplemental data in the early 2000s, nearly a decade after measurements first began.[379]

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[371] *See* 40 C.F.R. § 1501.8.
[372] E-mail from Michael Connolly Miskwish, *supra* note 103 (Michael Connolly Miskwish stated that, prior to the recent change in the NEPA process, the Bureau of Indian Affairs could use open-ended decision-making points as a mechanism to delay projects in order to avoid political repercussions. Without a fixed time for review, the Bureau could point to the time spent as an indicator that they have thoroughly analyzed the environmental impact, even if the actual review had been cursory. Mr. Connolly Miskwish believes the fixed time forces timely decisions or legitimate justifications for extensions, which improves a project's viability).
[373] U.S. DEP'T OF ENERGY, *supra* note 366.
[374] *Id.*
[375] Telephone Interview with Michael O'Connell, *supra* note 147.
[376] *Id.*
[377] *Id.* The history of the project is gathered from various PowerPoint presentations created by Michael Connolly Miskwish, *supra* note 299.
[378] *Id.*
[379] *Id.*

After confirming the rich resource, the tribe opted to play a low-risk strategy: lease the trust lands under the Indian Long-Term Leasing Act to a developer, who then arranged financing and owned the project while delivering lease payments to the tribe.[380] Since Kumeyaay I was the first commercial lease for wind development in Indian country, the Bureau of Indian Affairs spent several months setting a benchmark to ensure the tribe received fair value for its lease.[381] The tribe receives approximately $300,000–$400,000 in lease payments each year, based on performance.[382] As is typical, the developer set up a project company called Kumeyaay Wind, LLC (later sold to Leeward Energy[383]) as a vehicle for the various permits, financing, authorizations, and contracts.[384] San Diego Gas & Electric Company ("SDG&E"), a municipal electric utility, entered into a twenty-year Power Purchase Agreement with the project company in 2004, following an approval from the California Public Utilities Commission which confirmed energy generated from Kumeyaay I would fulfill SDG&E's Renewable Energy Credit requirements under the state's Renewable Portfolio Standard.[385] With the Power Purchase Agreement in hand, the developer secured financing (mostly through $80,000,000 in debt) for project construction.[386]

In addition to patience, commitment, and the tribe's low-risk strategy, the project's location was ideal. The site was physically close to an existing, off-reservation electrical substation, requiring only a short tieline for interconnection,[387] and the transmission line was already scheduled for an update.[388] The cost of interconnection is typically a

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[380] *Id.*

[381] Connolly Miskwish, *supra* note 271, at 26.

[382] Michael Connolly Miskwish, Presentation, Kumeyaay Wind Energy Project: San Diego County's first commercial wind project, in possession of author.

[383] FED. ENERGY REG. COMM'N, Letter from Jessica Friedman, Counsel for Kumeyaay Wind LLC and Mendota Hills, LLC, Re: Kumeyaay Wind LLC, et al., Docket No. EC17-27-000, Notice of Consummation, Dec. 28, 2016, in possession of author.

[384] The environmental considerations analyzed as part of the environmental review process included the potential for raptor and bat deaths, noise, visual impacts, and any restrictions on future development due to the wind turbine replacement. Connolly Miskwish, *supra* note 382.

[385] Draft, Pub. Util. Comm. of the State of California, Agenda ID #15942, Resolution E-4877, Sept. 14, 2017, at 4, in possession of author. The Power Purchase Agreement is updated fairly regularly to ensure its consistency with California's Renewable Portfolio Standards (RPS) plan as the RPS becomes more stringent.

[386] Connolly Miskwish, *supra* note 382.

[387] FED. ENERGY REG. COMM'N, Letter to James Walsh, Attorney for SDG&E, Docket No. ER-05-583-000, Apr. 4, 2005.

[388] Kronk, *supra* note 101, at 465.

significant share of total project cost, and even for Kumeyaay I, that cost totaled approximately $4,000,000.[389] Beyond the transmission question, the location was promising in other ways: a ridge perpendicular to the consistent flow of wind, close to San Diego and its electrical demand, and with good road access; "making access to the site [was] simply a matter of grading three miles of existing road 50% wider to handle the width of the shipping trucks."[390] Today, Kumeyaay I continues to operate, although it has faced the typical problems of a large energy installation. In 2009, Kumeyaay I turbines were damaged by inclement weather and knocked offline for a few months,[391] and in 2013, sparks from a mechanical malfunction caused a brush fire.[392]

2. Kumeyaay II Fizzles Out

Using Kumeyaay I as a low-risk learning opportunity, the Campo Kumeyaay Nation determined the passive lessor-lessee structure was dissatisfying. For the next round, Kumeyaay II, the Campo Kumeyaay Nation sought an ownership interest to capture more of the project upside. In part because of tax and financing problems described in Part II, ownership proved elusive and Kumeyaay II sputtered out.

While the tribe generated steady lease income from Kumeyaay I, it found the lessor-lessee arrangement (1) did not fully recognize their sovereign government status; and (2) most of the benefits of the project flowed out of the reservation.[393] The tribe found the neighboring county received more in property taxes than the tribe did in lease payments.[394] In pursuit of greater ownership and the benefit of a more diverse revenue base, in 2008 the Campo Kumeyaay Nation started evaluating a different project structure.[395] The tribe sought lease royalties *and* an equity ownership

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[389] As is fairly common, the utility, SDG&E in this case, constructed the interconnection facilities but Kumeyaay Wind LLC assumed the cost of construction. FED. ENERGY REG. COMM'N, Letter from James Walsh, Attorney for SDG&E, Re: Docket No. ER07-176-000, Nov. 1, 2006.

[390] Kronk, *supra* note 101, at 465.

[391] Miriam Raftery, *Bureau of Indian Affairs Ends EIR on Shu'luuk Wind, But Approves Ewiiaapaayp Tribe's Lease for Tule Wind*, EAST COUNTY MAG., Feb. 24, 2014. *See also* NATIONAL WILDLIFE FEDERATION, *supra* note 114, at 7.

[392] Patrick Smith, *Native Americans Scrap 250MW Project*, WIND POWER MONTHLY, Feb. 25, 2014.

[393] U.S. DEP'T OF ENERGY, *supra* note 366.

[394] This is partly because the county received a $3 million sales tax on the initial construction of Kumeyaay I. Telephone Interview with Michael Connolly Miskwish, *supra* note 299.

[395] U.S. DEP'T OF ENERGY, *supra* note 366.

interest in a 160 MW wind farm: Kumeyaay II, also called Shu'luuk Wind.[396] The tribe, the developer Invenergy, and SDG&E entered a Memorandum of Understanding.[397] The tribe won a $1,200,000 grant award for predevelopment costs from the Department of Energy and by late 2009 held a government-to-government meeting with the Bureau of Indian Affairs on lease approval and environmental regulatory compliance.[398] For its share of construction costs, the tribe planned to use federal government bonds.[399] While government bonds typically carry lower interest rates, they are limited to financing projects for "an essential government function," and the tribe was unsure of whether it could receive a waiver for that provision and, with its thin credit history, secure a low rate.[400]

During the Kumeyaay II development process, the tribe identified certain challenges—challenges that ultimately sunk the project. First, the wind farm required a higher-grade transmission line for interconnection, raising costs.[401] Second, the state was expected to assert taxes on at least the portion of the project *not* owned by the tribe.[402] Third, the federal Production Tax Credit was only available for the proportion of ownership interest held by the non-Indian entities. And as referenced above, the tribe could not issue bonds.[403] The aforementioned brush fire and other concerns led the tribe to vote down the project, cancel the contract with Invenergy, and ask the Bureau of Indian Affairs to terminate the ongoing impact analysis under NEPA.[404] Non-Indian environmentalists, as well as members of the neighboring Manzanita tribe, were also opposed to the expansion.[405]

3. Lessons from Kumeyaay I and II

Although Kumeyaay I provides the Campo Kumeyaay Nation with a steady stream of lease income, most of the benefits of the project accrue to the state and the county. The tribe receives no revenue from energy sales, but, on the other hand, it bears "little-to-no financial risk

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[396] *Id.* It is unclear whether the tribe pursued ownership through a separate development committee or Section 17 corporation.
[397] *Id.*
[398] *Id.*
[399] Telephone Interview with Michael Connolly Miskwish, *supra* note 299.
[400] *Id.*
[401] *Id.*
[402] *Id.*
[403] Connolly Miskwish, *supra* note 382.
[404] Raftery, *supra* note 391.
[405] *Id.*

from the project."[406] In its passive role as lessor, the tribe found success, due in part to an excellent site, a reliable off-taker in SDG&E, demand driven by California's Renewable Portfolio Standard, and firm commitment from the tribe over many years. However, when seeking greater ownership in Kumeyaay II, the tribe ran into a number of problems: transmission costs, burdensome state property taxes, the deleterious effect of the Production Tax Credit[407] and related financing difficulties. The tribe discovered that federal and state tax issues made securing an ownership stake quite challenging.[408]

B. Moapa Solar

Moapa Solar is a 250 MW solar photovoltaic array on the Moapa Indian Reservation, thirty miles north of Las Vegas, which began operating in early 2017.[409] Despite the difference in location, size, and technology, Moapa Solar parallels Kumeyaay I in several ways. Like Kumeyaay I, the project sits on tribal trust land but is owned and operated by non-Indian entities.[410] As with Kumeyaay I, the project ultimately succeeded because of the Moapa Band of Paiutes' durable commitment and a willingness to be flexible, driven in part by the tribe's history with fossil fuel generation.[411] But like the Campo Kumeyaay Nation, the financing realities of the federal Investment Tax Credit drove the Moapa Band of Paiutes into a lessor-lessee relationship with a non-Indian partner owning the project. However, once the benefit of those credits is realized, ownership will transfer to the tribe. Other key factors for success include the developer's explicit efforts to build trust and an excellent location.

1. Motivation Behind Moapa Solar and Tribal Action to Facilitate the Development

The tribe's history with the nearby Reid Gardner station, a large coal burning power plant, partially motivated the Moapa Band of Paiutes' pursuit of a large solar project.[412] Toxic coal ash had long drifted across

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[406] Ravotti, *supra* note 29, at 316–17.
[407] *See* Sullivan, *supra* note 297, at 840–41.
[408] Part IV addresses potential remedies for these persistent tax issues.
[409] *Moapa Southern Paiute Solar Project*, FIRST SOLAR, http://www.firstsolar.com/Resources/Projects/Moapa-Southern-Paiute-Solar-Park [https://perma.cc/SDG4-LLMT] (last visited Jan. 11, 2019).
[410] Telephone Interview with George Burdette, *supra* note 10.
[411] *Id.*
[412] *Id.*

the reservation, harming locals' health and poisoning the environment.[413] Despite bearing the costs, the tribe derived few benefits from the Reid Gardner Station. For example, a tribal-owned travel center immediately adjacent to the power plant had always run on a separate generator, as it was unconnected to the electrical grid.[414] The Reid Gardner station closed in March 2017.[415] Both the Moapa Solar developer and Earthjustice report tribal members are glad the coal plant is being replaced by clean, solar energy.[416]

Over the course of the development process, the tribe consistently worked hand in hand with the developer to facilitate the enormous,[417] complex project, demonstrating significant flexibility and commitment. The initial negotiations occurred under the "old" leasing regulations prior to the HEARTH Act, but were finalized under the "new" regulations after the HEARTH Act passed. The tribe and K Road, a solar developer, negotiated an option to lease in June 2010, and the Department of the Interior appraised the lease by 2011, at which point the Bureau of Indian Affairs initiated the NEPA process.[418] At the request of the tribe, the project was placed on the Department of the Interior's priority list and received approval in June 2012 for the ground lease, six related easements, and a Bureau of Land Management land-swap for the generation tieline.[419] Unexpectedly, the NEPA approval process found the project would negatively impact the habitat of an endangered desert tortoise.[420] In response, the tribe and the Bureau of Indian Affairs, in consultation with the Fish and Wildlife Service, established a 6,000 acre set-aside on

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[413] EARTHJUSTICE, *supra* note 8.
[414] *See* Telephone Interview with George Burdette, *supra* note 10.
[415] *Reid Gardner Generating Station Permanently Shut Down*, POWER ENGINEERING (Mar. 17, 2017), https://www.power-eng.com/articles/2017/03/reid-gardner-generating-station-permanently-shut-down.html [https://perma.cc/XR27-NUFP].
[416] EARTHJUSTICE, *supra* note 8; Telephone Interview with George Burdette, *supra* note 10.
[417] Frank Andorka, *First Solar commissions 250 MW-AC Project on Native American Land*, PV MAG. INT'L (Mar. 20, 2017), https://www.pv-magazine.com/2017/03/20/first-solar-commissions-250-mw-ac-project-on-native-american-land/ [https://perma.cc/N3NQ-VFW6].
[418] U.S. DEP'T OF THE INTERIOR BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE, PRESENTATION ON THE HEARTH ACT, BIA APPROVAL REQUIREMENTS, AND THE NEW SURFACE LEASING REGULATIONS (June 2015).
[419] U.S. DEP'T OF THE INTERIOR BUREAU OF INDIAN AFFAIRS, RECORD OF DECISION: FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE K ROAD MOAPA SOLAR GENERATION FACILITY (June 2012), https://www.bia.gov/sites/bia.gov/files/assets/public/pdf/idc-018732.pdf [https://perma.cc/VJ42-H4RZ] [hereinafter U.S. DEP'T OF THE INTERIOR BUREAU OF INDIAN AFFAIRS, RECORD OF DECISION].
[420] *Id.*

the reservation for the tortoise.[421] Securing the set-aside added six months to the project timeline.[422] The federal approval process was lengthy, in part due to the endangered species issue, but the project participants did not indicate that process would have been any shorter were it not in Indian country.[423] Concurrently, K Road submitted the proposed solar project to the Southern California Public Power Authority's Request for Proposal.[424] In October 2012, K Road entered into a twenty-five year Power Purchase Agreement with the Los Angeles Department of Water and Power ("LADWP"),[425] to start at the end of 2015.[426] As the project evolved, the tribe and developer amended the lease three times, each time requiring the Moapa Band of Paiutes' formal approval and Bureau of Indian Affairs' confirmation.[427] The non-Indian tax equity financers asked for waivers to the constraints on future assignments under the HEARTH Act leasing regulations; the tribe agreed, approached the Bureau, and the Bureau approved.[428] At the financers' request, the tribe also adopted three ordinances designed to strengthen the enforceability of project contracts.[429]

2. Federal Tax Incentives Force the Moapa Band of Paiutes to Take a Passive, Lessor Position

Similar to Kumeyaay I, the financing requirements and federal tax credits precluded the Moapa Band of Paiutes from holding an ownership

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[421] *See* Report from Office of the City Administrative Officer, City of Los Angeles, Approval of the K Road Moapa Solar Project Power Purchase Agreement BP 12-017 and Purchase of the Project from K Road Moapa Solar, LLC, CAO File No. 0150-09860-0000, Council File No. 12-16-14, Oct. 31, 2012.
[422] U.S. DEP'T OF THE INTERIOR BUREAU OF INDIAN AFFAIRS, RECORD OF DECISION, *supra* note 419.
[423] Telephone Interview with Chip Lewis, *supra* note 68 (stating that NEPA review is commensurate with the perceived impacts, and the perceived impacts were limited, as the project is in a scrubby desert; further stating that the tribe has the power to facilitate the environmental review if it so wishes); Telephone Interview with Michael O'Connell, *supra* note 147 (explaining that the Bureau of Indian Affairs' regional office has allowed outside contractors acting on behalf of the Bureau to prepare drafts of underlying environmental documents for the NEPA Environmental Impact Statement process with a second consultant to perform peer-review to assist the Bureau, which may speed the Bureau's review process).
[424] Telephone Interview with Chip Lewis, *supra* note 68.
[425] LADWP is part of the Southern California Public Power Authority.
[426] Report from Office of the City Administrative Officer, *supra* note 421.
[427] Telephone Interview with George Burdette, *supra* note 10.
[428] U.S. DEP'T OF THE INTERIOR BUREAU OF INDIAN AFFAIRS, WESTERN REGIONAL OFFICE, *supra* note 418.
[429] *Id.*

stake in the project for a significant period of time.[430] But after the Investment Tax Credits run their course, the tribe will acquire ownership. For broader context, this Section presents some more of the project development details.

The cost of Moapa Solar is enormous. Under the Power Purchase Agreement, LADWP agreed to buy all energy and Renewable Energy Credits from Moapa Solar, as well as a five and a half mile transmission line running across a right of way on Bureau of Land Management–owned land to connect to a substation.[431] The Investment Tax Credit lowered the purchase price, yet LADWP estimated the total cost (of the purchased energy and renewable energy credits) to be $1.6 billion over twenty-five years.[432] The transmission line alone cost $18 million to construct,[433] although the line was relatively short and the new generation capacity from the solar farm did not require any broader updates to the grid infrastructure.[434]

As is typical, the developer arranged the financing in order to capture the full value of the Investment Tax Credit. The initial developer, K Road, sold the project company to First Solar in 2013.[435] First Solar submitted the required Federal Energy Regulatory Commission filings and moved to arrange for financing partners.[436] To that end, First Solar brought in General Electric and Goldman as passive, tax-equity financers and sold a controlling interest in the project company to Capital Dynamics.[437] Both the tribe and First Solar took care in arranging the deal to preserve the full value of the Investment Tax Credits, meaning the tribe could

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[430] Telephone Interview with Chip Lewis, *supra* note 68.

[431] The substation is also on Bureau of Land Management (BLM) lands. Telephone Interview with George Burdette, *supra* note 10. Since the right of way was on BLM land, the BLM became a cooperating agency in the NEPA process. Telephone Interview with Chip Lewis, *supra* note 68. LADWP uses the Renewable Energy Credits to meet its requirements under the California Renewable Portfolio Standard. *See* Report from Office of the City Administrative Officer, *supra* note 421.

[432] Report from Office of the City Administrative Officer, *supra* note 421. *See, e.g.*, John Fitzgerald Weaver, *Apple solar data center at 3.099c/kWh [$30.99/MWh] helps NV Energy near lowest US PPA*, 9TO5MAC (Nov. 9, 2017), https://9to5mac.com/2017/11/09/apple-solar-data-center-pricing/ [https://perma.cc/E6CK-AXML].

[433] Report from Office of the City Administrative Officer, *supra* note 421.

[434] Telephone Interview with George Burdette, *supra* note 10; *see also* Report from Office of the City Administrative Officer, *supra* note 421.

[435] *See First Solar Acquires 250MW Moapa Project in Nevada from K Road Power*, FIRST SOLAR (Sep. 26, 2013), http://investor.firstsolar.com/news-releases/news-release-details/first-solar-acquires-250mw-moapa-project-nevada-k-road-power [https://perma.cc/E29V-VFHS].

[436] Telephone Interview with George Burdette, *supra* note 10.

[437] *Id.*(noting that the ownership structure was challenging to explain to the tribe).

have no ownership for the first decade.[438] The benefits for the tribe are certainly positive, but they are inherently limited: the construction phase of development generated 115 local jobs, many of which went to tribal members, pursuant to the Moapa's Tribal Employment Rights Ordinance.[439] But project ownership would have allowed the tribe to capture more of the value generated by the multibillion-dollar asset.

3. The Tribe and Developer Overcome Trust and Uncertainty Issues

While the tribe exercised repeated and consistent efforts to facilitate the project throughout the entirety of the process, the developer also took pains to foster mutual trust.[440] For example, First Solar arranged for representatives from Capital Dynamics to meet tribal members in person and explain the financing arrangements.[441] Building on the relationship, the parties are planning an additional project north of the existent one, and the Bureau of Indian Affairs has already completed the environmental impact statements under NEPA.[442]

While the Department of the Interior process for lease approval was not unduly burdensome, uncertainty over state jurisdictional authority added a complication. Extra steps were necessary to clarify the scope of state jurisdiction. The tribe, with support from the Bureau of Indian Affairs, requested a declaration from the Nevada Public Utility Commission that the installation would not be subject to the state's Utility Environmental Protection Act.[443] The Public Utility Commission demanded detailed maps showing no part of Moapa Solar would fall on non-tribal

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[438] *Id.*

[439] Telephone Interview with Chip Lewis, *supra* note 68; *see also* Compelo Staff Writer, *First Solar starts operations at 250MW solar plant in Nevada, US*, COMPELO (Mar. 20, 2017), https://www.compelo.com/energy/news/newsfirst-solar-starts-operations-of-250mw-solar-plant-in-nevada-us-200317-5766389/ [https://perma.cc/6CTY-MJ3M] (last visited Jan. 11, 2019).

[440] Telephone Interview with Chip Lewis, *supra* note 68.

[441] Telephone Interview with George Burdette, *supra* note 10.

[442] *Id.*; Final Environmental Impact Statement for the Proposed Aiya Solar Project, Clark County, Nevada, 81 Fed. Reg 12,746 (Mar. 10, 2016); *Documents*, AIYA SOLAR PROJECT ENVIRONMENTAL IMPACT STATEMENT, http://www.aiyasolarprojecteis.com/documents [https://perma.cc/KGA4-S8HW] (last visited Jan. 11, 2019); Telephone Interview with Chip Lewis, *supra* note 68. Vernon Robison, *Moapa Solar Facility Shot Down By Nevada PUC*, MOAPA VALLEY PROGRESS (Nov. 5, 2014), http://mvprogress.com/2014/11/05/moapa-solar-facility-shot-down-by-nevada-puc/ [https://perma.cc/VD2F-H2RA].

[443] Nevada Public Utilities Commission, Petition of Moapa Solar, LLC for a Declaratory Order that the Moapa Solar Energy Center on Tribal Land is not subject to the Utility Environmental Protection Act, Docket No. 14-07035 (Sept. 10, 2014).

land before granting that the "solar field and associated facilities to be constructed on tribal land, Indian trust land, or restricted fee land are not subject to concurrent jurisdiction of the State."[444] Although the tribe was able to proceed, the Public Utility Commission misconstrued the law, denigrating tribal authority in the process.[445]

4. Lessons from Moapa Solar

As with Kumeyaay I, Moapa Solar's success depended upon consistent support from the tribe, and both parties took steps to build mutual trust over a period of several years. Like the Campo Kumeyaay Nation, financing realities driven by the federal Investment Tax Credit compelled the Moapa Band of Paiutes to take a lessor position and limited the tribe's potential upside from the project. Lastly, Moapa Solar also featured a promising location, prior state Public Utility Commission approval for additional generation, and a committed utility purchaser.

C. Kayenta Solar

Like the projects described above, Kayenta Solar succeeded because of firm commitment from the tribe. But in some ways, Kayenta Solar, a 27.3 MW solar photovoltaic array that began operating in June 2017 on

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[444] *Id.* at 1.

[445] *Id.* In its analysis, the Nevada Public Utility Commission ("PUCN") misconstrued the law regarding preemption of state regulation in Indian country. PUCN stated Nevada has a significant interest in protecting the lands "within its borders," presumably including all tribal lands. *Id.* at 11. Next, PUCN stated that the relevant question was whether the compelling state interest is "adequately addressed by the federal and tribal processes so that exercise of concurrent jurisdiction is unwarranted." *Id.* This articulation of preemption assumes a significant state interest as its starting point for every activity in Indian country. But preemption analysis requires a balancing of all interests—state, federal, and tribal—rather than determining whether the legal processes of the latter two adequately fulfill the demands of the former. *See id.*; New Mexico v. Mescalero Apache Tribe, 462 U.S. 324 (1983). Further, since preemption evolved as a matter of common law over time, one should not consider its historical evolution in order to apply it accurately. The starting point is *not*, as PUCN asserts, a state interest and consequent authority to regulate all within its borders. *Id.* at 11–12. The starting point is the exact opposite: the state is presumed to have no regulatory authority in Indian country. Worcester v. Georgia, 31 U.S. (6 Pet.) 515, 559–62 (1832). Tribes retain inherent authority as sovereigns to govern within their territory. *Id.* at 515, 559–62; Williams v. Lee, 358 U.S. 217 (1959). Admittedly, the courts have eroded that authority over time in the context of power over non-Indians who have *not* voluntarily submitted to tribal authorities. But that does not apply in the case of a non-Indian lessee, who voluntarily enters into a contract with the tribe or tribal entity. *See* Montana v. United States, 450 U.S. 544 (1981); *see also* Strate v. A-1 Contractors, 520 U.S. 438 (1997).

Navajo Nation lands, is the exception that proves the rule.[446] The unique structure of the project is likely beyond the institutional and financial capacity of most tribes, dependent as it is upon a well-established and sophisticated tribal utility. The Navajo Tribal Utility Authority ("NTUA") employed creative and responsive financing arrangements largely unavailable to most tribes. While Kayenta Solar inspires, particularly against the backdrop of fossil fuel generation in Navajo Nation, its short-term lessons for smaller tribes may be limited. Perhaps the most significant takeaway is that strong institutions enable not only renewable energy development, but also economic development writ large. Note that for this case study, the author relied exclusively upon publicly available information and did not interview any of the participants. Consequently, the description notes a few areas of uncertainty.

1. The Navajo Nation's Motivation: A Brave Step Towards a Clean Energy Future

Any description of Kayenta Solar would be incomplete without recounting the history of the Navajo Generating Station ("NGS") that sits sixty-five miles west of Kayenta Solar. NGS has devastated the Navajo and Hopi culture, environment, and public health while simultaneously providing well-paying, steady jobs in an economically depleted area with few other options. Commissioned in 1974, NGS is a 2250 MW coal-fired power plant fed by coal from the Black Mesa mine; both the plant and the mine are on tribal lands.[447] Before Peabody Energy could begin mining operations, it needed to settle ongoing land disputes between the Navajo Nation and the Hopi Tribe; in a misguided attempt to spur intertribal negotiations, the federal government established a freeze on infrastructure development in an area adjacent to the mine.[448] Due to the freeze, local communities forewent infrastructure improvements, preventing the development of industries other than mining and burning coal.[449] Thousands of tribal members were moved to make way for the mining and power generation, many placed in public housing on a uranium waste–contaminated site.[450]

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[446] Heffernan, *supra* note 16.
[447] White Hawk, *supra* note 1, at 2.
[448] Evan Wyloge, *As Coal Plant Shutdown Looms, Arizona's Navajos And Hopis Look For Economic Solutions*, HUFFPOST (Oct. 20, 2017), https://www.huffingtonpost.com/entry/arizona-navajo-hopi-coal-plant_us_59e61e0fe4b02a215b3379d7 [https://perma.cc/WK7R-YYXE].
[449] *Id.*
[450] Evelyn Nieves, *The Largest Coal-Fired Power Plant in the West Is Slated for Closure*,

Today, the coal plant and mine continue to harm the community. Peabody Energy uses up to three million gallons of water a day to transport coal from Black Mesa via a slurry pipeline to the Mohave Generating Station, another large plant.[451] The draining aquifer forced dramatic changes to Navajo farming and herding patterns.[452] NGS is the largest coal-fired power plant in the West, requires fifteen tons of coal per minute, pumps 14,000,000 metric tons of CO_2 into air annually, and provides over a million households in Arizona, California, and Nevada with power.[453] Despite hosting the plant on their lands, 37% of Navajo households on the reservation had no access to electricity as of 2011.[454] (Revenues from Kayenta Solar will help to finance electricity extension to some NTUA-served homes for the first time).[455]

At the same time, the tribes do receive some benefits from NGS, making its upcoming closure a frightening prospect. Although it generates $127 million in annual health costs[456] and has steadily poisoned the Navajo and Hopi people for forty-four years, fees from the power plant and neighboring coal mine provide between one quarter and one third of Navajo Nation's annual operating budget.[457] Lease payments and other revenues from NGS and a Black Mesa mine provide up to 80% of the annual Hopi budget.[458] In addition to providing governmental income, 90% of the 725 jobs at the generating station and nearby mine are held by tribal members.[459] As the cost of natural gas declines, coal is increasingly

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SIERRA CLUB (Oct. 12, 2017), https://www.sierraclub.org/sierra/2017-6-november-december/feature/largest-coal-fired-power-plant-west-slated-for-closure [https://perma.cc/7D3S-7LUH].

[451] *Id.*

[452] *Id.*

[453] White Hawk, *supra* note 1, at 2.

[454] *Id.* at 2–3 (citing David Tarasi et al., *18,000 Americans Without Electricity: Illuminating and Solving Navajo Energy Crisis*, 22 COLO. J. INT'L ENVT'L L. & POL'Y 263, 265 (2011)); Alysa Landry, *Not Alone in the Dark: Navajo Nation's Lack of Electricity Problem*, INDIAN COUNTRY TODAY (Feb. 11, 2015), https://newsmaven.io/indiancountrytoday/archive/not-alone-in-the-dark-navajo-nation-s-lack-of-electricity-problem-yO5P4y3H6k6kuxF-U5FvvQ/ [https://perma.cc/Z9GJ-5R4K].

[455] Noel Lyn Smith, *Navajo Tribal Utility Authority opens first large-scale solar farm*, DAILY TIMES (July 30, 2017), https://www.daily-times.com/story/news/local/four-corners/2017/07/30/navajo-tribal-utility-authority-opens-first-large-scale-solar-farm/493090001/ [https://perma.cc/LNJ2-D8RT].

[456] Carolyn Beeler, *Navajo power plant likely to close, despite Trump's promises to save coal*, PUBLIC RADIO INT'L (June 28, 2017), https://www.pri.org/stories/2017-06-28/navajo-power-plant-likely-close-despite-trumps-promises-save-coal [https://perma.cc/2D2W-XKZK].

[457] *Compare* Beeler, *supra* note 456, *with* Wyloge, *supra* note 448.

[458] Nieves, *supra* note 450.

[459] Beeler, *supra* note 456.

uncompetitive, and NGS is scheduled to close at the end of 2019.[460] The Navajo Nation government lobbied for NGS and mine lease extensions with little success.[461] In the words of Russell Begaye, President of Navajo Nation, the closure is "forcing us to make a huge paradigm shift."[462] Kayenta Solar is part of that shift.

Kayenta Solar is just an early step for Navajo Nation, as it mirrors the broader, global transition to clean energy. Building on existent infrastructure, NTUA is planning up to 500 MW of additional solar projects that will tie into the transmission lines snaking from the soon-to-be-closed NGS.[463] The lines will lower the cost of future solar projects, especially since Navajo Nation was granted transmission capacity on the lines.[464] Kayenta Solar itself is a significant, but relatively small step: it is 1% of NGS's capacity.[465] It reached completion in a remarkably short period of time; first proposed in 2014, the 27.3 MW solar farm started operating in June 2017.[466] But the coal plant's 2019 closure will indeed hit the communities hard, as power plant jobs pay $35–$40 an hour, while a solar array typically requires only a few dozen personnel to operate.[467] Kayenta Solar's construction phase created approximately 200 Navajo-held jobs, with the hope those workers will have the necessary training for future construction of nearby solar projects.[468] As tribal members lose NGS jobs, they may leave the area, potentially fracturing the community.[469] But the coal plant is subject to inevitable market forces, and competitive utility-scale renewable energy generation provides a cleaner alternative for the tribe as it moves forward. In addition to the new solar arrays near Kayenta Solar, Navajo Nation attempted to develop a wind installation in the Gray Mountain area,[470] which faltered for reasons that are not clear.[471]

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[460] *Id.*
[461] *Id.*
[462] *Id.*
[463] Emery Cowan, *Navajo solar plant breaks new ground*, AZ. DAILY SUN (Aug. 23, 2018), https://azdailysun.com/news/local/navajo-solar-plant-breaks-new-ground/article_fdfc63da-6a33-5fbb-bfe9-7d174a31700f.html [https://perma.cc/38X2-CAB6].
[464] *Id.*
[465] *Id.*
[466] Smith, *supra* note 455.
[467] Wyloge, *supra* note 448.
[468] *Id.*; *see also* Cowan, *supra* note 463.
[469] Wyloge, *supra* note 448.
[470] Emery Cowan, *Navajo utility proposes solar project near Cameron*, AZ. DAILY SUN (July 21, 2018), https://azdailysun.com/news/local/navajo-utility-proposes-solar-project-near-cameron/article_361b8a26-0eb8-5619-b6bc-cd3407334bdb.html [https://perma.cc/EL7D-3BJS].
[471] Telephone Interview with Michael O'Connell, *supra* note 147.

2. The Navajo Tribal Utility Authority ("NTUA"), the Key to Success

Unlike Kumeyaay I and Moapa Solar, a tribal entity owns the Kayenta Solar project company.[472] This entity, the NTUA, employed sophisticated and original financing mechanisms to bring the project to commercial operation. Although NTUA owns the project, First Solar operates it.[473] The Navajo Nation Council created NTUA in 1959 to deliver utility services throughout Navajo Nation: NTUA provides solar photovoltaic off-grid power, grid-connected electricity, natural gas services, wastewater, communications, and water services.[474] NTUA owns its own transmission and distribution systems, takes transmission from three surrounding public power entities,[475] and serves a population of 150,000 scattered across 27,000 square miles.[476] The tribal council regulates NTUA,[477] and, like all utilities, NTUA may request authorization from its overseeing regulatory body to recover capital costs through increases to the rates it charges customers,[478] a valuable tool for opening up a range of otherwise unavailable financing options.

Since the author was unable to interview any of the participants, the financing and tax arrangements for Kayenta Solar are somewhat murky. First, NTUA created NTUA Generation, Inc. ("NGI") as a nonprofit subsidiary, with a further subsidiary, NGI-Kayenta-Lessor I, LLC (Kayenta Solar) as the project company.[479] NTUA leased the land from the tribe under the Navajo leasing regulations[480] and negotiated with

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[472] Cowan, *supra* note 463.
[473] Julia Travers, *Navajo Nation Embraces Solar as Major Coal Plant Shuts Down*, LABROOTS (Nov. 8, 2017), https://www.labroots.com/trending/technology/7272/navajo-nation-embraces-solar-major-coal-plant-shuts [https://perma.cc/UE4R-NN4Z].
[474] Derek A. Dyson, *Financing Renewable Energy Development: Perspectives from the Navajo Tribal Utility Authority*, https://www.energy.gov/sites/prod/files/2016/09/f33/Dyson%20Presentation%20for%20%20Tribal%20Renewable%20Energy%20Development%20%28Financing%29.pdf [https://perma.cc/J729-FYPV].
[475] Kayenta Solar interconnects with a transmission line, enabling NTUA to wheel the power to neighboring utilities, if necessary.
[476] Monument Valley Solar Lessee, LLC, FERC Motion to Intervene and Comments of Navajo Tribal Utility Authority; NTUA Generation, Inc.; NGI-Kayenta, Inc.; and NGI -Kayenta-Lessor I, LLC, Docket No. ER17-1070-000 (Mar. 22, 2017).
[477] *See* NAVAJO NATION CODE ANN. tit. 21, § 1 (2010).
[478] *Id.* at § 22.
[479] NGI-Kayenta-Lessor I is a Delaware company.
[480] Navajo Nation's leasing regulations served as a model for the HEARTH Act, described in Part II.

individuals holding grazing rights to the land.[481] Then NGI contracted with an international construction company for the $60 million facility, financed in part with loans from the National Rural Utilities Cooperative Finance Corporation.[482] NGI entered into a two-year Power Purchase Agreement with a neighboring utility, the Salt River Project, for all energy and environmental attributes (including Renewable Energy Credits) to help cover payments on construction loans.[483] Once the Salt River Project Power Purchase Agreement expires, NTUA will then directly purchase all energy and environmental attributes from Kayenta Solar in order to distribute it to reservation residents.[484] While First Solar is currently operating the project, NGI plans to take over operations in the future.[485]

It is unclear what, if any, role the Investment Tax Credit played in financing. While NTUA could have feasibly financed Kayenta Solar without the Investment Tax Credit benefits, a local newspaper reported that the tax credits reduced the project costs.[486] Since the project company was formed under Delaware law, the deal may have been structured such that the project company became a for-profit taxable entity capable of utilizing the Investment Tax Credit. At one point, NGI recruited a tax equity investor, entering into a lease with a subsidiary of U.S. Bancorp.[487] But shortly thereafter, the lease arrangement between NGI and Bancorp was cancelled.[488] No other filings indicate that a tax equity investor was involved in the final deal. Since NTUA themselves constructed the project, it was somewhat insulated from the vagaries of the market: there was never a risk that NTUA would decide it could build a more competitive array just outside of the reservation.

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[481] Smith, *supra* note 455.
[482] *Id.*
[483] Associated Press, *Navajo Nation's first solar project now producing enough electricity for about 13,000 homes*, AZCENTRAL (Aug. 29, 2017), https://www.azcentral.com/story/money/business/energy/2017/08/29/navajo-nations-first-solar-project-now-producing-electricity-13-000-homes/613443001/ [https://perma.cc/4FWA-PGQQ]. *See also* Cowan, *supra* note 463.
[484] Dyson, *supra* note 474.
[485] Smith, *supra* note 455.
[486] *See* Cowan, *supra* note 463.
[487] Monument Valley Solar Lessee, LLC, FERC Application for Market-Based Rate Authorization, Request for Waivers and Blanket Authorizations, Request for Category 1 Seller Status Determination, and Request for Expedited Consideration (Mar. 1, 2017).
[488] Monument Valley Solar Lessee LLC, FERC Motion to Intervene and Comments of Navajo Tribal Utility Authority, *supra* note 476.

3. Lessons from Kayenta Solar

The tribal utility was key to the success of Kayenta Solar. But most tribes, especially smaller ones, do not have the advantage of a sixty-year-old tribal utility. That unique institutional capacity provided a degree of flexibility unavailable to the Moapa Band of Paiutes or the Campo Kumeyaay Nation. NTUA offered an escape from the traditional passive lessor-lessee role, but without a similar entity, most tribes will inevitably turn to the Kumeyaay Wind or Moapa Solar model, and be subject to its inherent limits.

D. False Starts: Fort Mojave Solar and Owl Feather War Bonnet Wind

The following two case studies are indicative of some of the unique challenges renewable energy projects in Indian country face. The first, Fort Mojave Solar, faltered in 2017 while the second, Owl Feather War Bonnet Wind, lost momentum nearly a decade ago. The former demonstrates the importance of community buy-in for such projects and the additional complications created by fractured land ownership patterns. The latter shows a common problem for tribes on the Great Plains: the current regulatory structure governing transmission lines renders it prohibitively expensive for rural wind generation to wheel power to distant population centers.

1. Fort Mojave Solar: Fractured Land, Market Forces, and Lack of Community Buy-In

The Fort Mojave Solar project illustrates the challenges created by a fractured pattern of land ownership, as well as the importance of establishing firm community buy-in for large projects. Fort Mojave Solar was a 332 MW planned solar farm in Mohave Country, Arizona and Clark County, Nevada; the Fort Mojave Indian Tribe partnered with First Solar, the developer for Moapa Solar.[489] As with Moapa Solar, the tribe planned to enter into a solar ground lease with the developer under the Indian Long-Term Leasing Act.[490] Also similar to Moapa Solar, the

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[489] *Fort Mojave Solar Project (Fort Mojave Tribe)*, PERMITTING DASHBOARD, https://www.permits.performance.gov/projects/fort-mojave-solar-project-fort-mojave-tribe [https://perma.cc/JWL4-FCM3] (last visited Jan. 11, 2019).

[490] Telephone Interview with Chip Lewis, *supra* note 68.

project owner would receive federal tax credits for a period of about ten years before ownership would transfer to the tribe.[491] First Solar went through a few of the primary development steps: it secured a twenty-year Power Purchase Agreement with Southern California Edison Company under which the utility agreed to purchase the energy and Renewable Energy Credits to satisfy compliance requirements under California's Renewable Portfolio Standard.[492] The plan was to interconnect the project onto the grid operated by California's Independent System Operator. Reflecting the typical development timeline, while the parties requested approval from the California Public Utility Commission in 2014, First Solar estimated the project would not become operational until 2019.[493]

From the beginning, the underlying land ownership complicated the development process. The Fort Mojave Indian Tribe's reservation is a checkerboard reservation spanning Arizona, Nevada, and California.[494] The project, including both the solar array, substation, and new transmission lines, would cross tribal trust lands, federal lands owned by Bureau of Land Management and the Bureau of Reclamation, state-administered lands, county, and private lands in Clark County, Nevada.[495] Overlapping authorities required the Bureau of Indian Affairs to prepare an environmental impact statement in cooperation with the tribe, the Bureau of Land Management, the Bureau of Reclamation, the Army Corps of Engineers, the Environmental Protection Agency, the U.S. Fish and Wildlife Service, the state of Nevada, Clark County, Nevada, and other federal, state, and local agencies pursuant to NEPA.[496] The Bureau of Indian Affairs held meetings to identify the scope of the environmental review both on the reservation and in Nevada.[497] While the solar array would have been entirely on tribal trust lands, the tieline, substations,

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[491] *Id.*
[492] Julie Fairman, *Solar plant to be built on reservation land in California*, MOHAVE VALLEY DAILY NEWS (Jan. 12, 2016), http://www.mohavedailynews.com/news/solar-plant-to-be-built-on-reservation-land-in-california/article_2ef6a16c-b8ff-11e5-9ea0-074c5b206c1f.html [https://perma.cc/2XUD-G8UR].
[493] Public Utilities Comm'n of the State of California, Item #12 (Rev. 1), Agenda ID #13740, Resolution E-4705 (Mar. 26, 2015).
[494] *See* Fort Mojave Indian Tribe, *Fort Mojave Indians*, MOJAVEDESERT, http://mojavedesert.net/mojave-indians/fmt-01.html [https://perma.cc/S5DP-8P6A] (last visited Jan. 11, 2019).
[495] Notice of Intent to Prepare an Environmental Impact Statement for the Fort Mojave Solar Project on the Fort Mojave Indian Reservation, Mohave County, Arizona, and Clark County, Nevada, 81 Fed. Reg. 21,377 (Apr. 11, 2016).
[496] *Id.*
[497] *Id.*

and transmission lines would not.[498] The project required Bureau of Indian Affairs and Bureau of Land Management approval for an eighteen-mile right of way for new transmission lines connected to a brand new substation built on trust lands.[499] As for lines crossing state and private lands in Nevada, First Solar had to seek approval from the Nevada Public Utility Commission under the Nevada Utility Environmental Protection Act.[500]

Shortly after the Environmental Impact Statement process began, two independent forces started to imperil the project. First, electricity prices declined while the cost of infrastructure rose.[501] As the profit margin narrowed, internal pressure against the project increased, especially since the lease would have covered nearly 10% of the total land area of the reservation.[502] Certain members of the tribe vocally opposed the project, raising concerns about panels causing permanent desertification, decreasing property values, and desecrating important lands.[503] The cultural committee in particular did not wish to see a conversion of agricultural lands given the importance of agriculture to tribal identity.[504] Whether the internal opposition or the hard economics are to blame, the project faltered and does not appear to be presently moving forward.

2. Owl Feather War Bonnet: Location, Location, Location

The Owl Feather War Bonnet wind energy project also ultimately stalled, although for quite different reasons from Fort Mojave Solar: transmission costs. The Rosebud Sioux Tribe planned a 30 MW wind facility on trust lands near St. Francis, South Dakota in partnership with DISGEN, the Department of Energy, the Intertribal Council on Utility Policy, and other private and governmental organizations.[505] The project

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[498] *Id.*
[499] *Id.*
[500] Public Utility Comm'n of Nevada, Docket Routing and Status Report, Docket No. 16 -03018, Tribal Solar, LLC (Apr. 19, 2016).
[501] Telephone Interview with Chip Lewis, *supra* note 68.
[502] Notice of Intent to Prepare an Environmental Impact Statement for the Fort Mojave Solar Project on the Fort Mojave Indian Reservation, Mohave County, Arizona, and Clark County, Nevada, 81 Fed. Reg. 21,377 (Apr. 11, 2016).
[503] "We are the Mojave. This is our land and we don't want to see it desecrated like this . . . What's going to be left for my children and my children's children?" Julie Fairman, *Tribal Solar plans meet with opposition*, LAUGHLIN NEVADA TIMES (May 27, 2016), http://www .mohavedailynews.com/laughlin_times/tribal-solar-plans-meet-with-opposition/article _700698ac-245b-11e6-a2e4-bb1387193e21.html [https://perma.cc/5W3C-CZT8].
[504] Telephone Interview with Chip Lewis, *supra* note 68.
[505] Garry, Spurlin & Nelsen, *supra* note 69, at 449, 454.

would have been the largest Indian country wind power facility in the Midwest.[506] As with Kumeyaay Wind, the tribe spent years assessing wind potential. The tribe placed anemometers on existing radio towers in 2001, collected five years of data on wind resource potential, and proceeded to consider project financing.[507] Although the tribe recognized the need to bring in a private, non-member investor to exploit the Production Tax Credit and supply capital and operational expertise, some members feared "another developer coming to the Tribe and taking it for a ride."[508] But ultimately, the financing realities forced the tribe into the tax-equity arrangement, under which project ownership would revert to the tribe after ten years.[509] Since the project stalled, questions regarding state taxation were left unaddressed.[510]

Although the valuable wind resource remains, transmission costs rendered the project uneconomical. The Rosebud Sioux Tribe reservation includes over one million acres and has a very low population density.[511] The project would have had minimal impacts on wildlife and been far from areas of major cultural significance.[512] But the geographical isolation of the reservation required power be transmitted vast distances to population centers. The cost of building such transmission lines is currently prohibitive.[513] While the project stalled in the late 2000s,[514] future changes to electricity regulation at the state or national level might suddenly and dramatically alter the cost calculations for projects like the Owl Feather War Bonnet wind farm, as merchant transmission lines could traverse lands near the reservation, allowing the tribal wind projects to tap into the eastern wholesale markets.[515]

E. Strategies for Other Tribes Pursuing Renewable Energy Projects Under the Current Regime

As the case studies show, successful utility-scale projects in Indian country are possible. Success requires commitment from the tribe, a

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[506] *Id.* at 450.
[507] *Id.* at 452.
[508] Sullivan, *supra* note 297, at 843.
[509] *Id.*
[510] *Id.* at 844.
[511] Garry, Spurlin & Nelsen, *supra* note 69, at 450.
[512] *Id.* at 453.
[513] *Id.* at 450.
[514] See Joshua Zaffos, *Renewable energy on tribal lands stalls out*, HIGH COUNTRY NEWS (July 3, 2015), https://www.hcn.org/articles/federal-agency-shortcomings-stalling-solar-wind-tribal-winds [https://perma.cc/KY26-LJMJ].
[515] Part IV addresses those potential changes to the regulatory landscape.

concerted effort to build trust with non-Indian partners, and good economics. For tribes such as Navajo Nation, a professionalized utility may open up a broader range of financing and ownership structures. For others, the realities of the tax considerations drive them to take a largely passive, lessor position, providing the developer and project owners with a lease under the Indian Long-Term Leasing Act or the HEARTH amendments. Once that structure is put in place, the state or local county will assert certain taxes on the project, which can be demoralizing for the hosting tribe. But for most tribes, that passive lease structure, with a non-Indian tax equity investor capturing the value of federal tax incentives, is the most feasible option under the current regime. However, if the legal and policy structures were slightly altered, the options could expand, tribes could enjoy more of the benefits, and renewable energy installations could proliferate across Indian country, serving tribal, state, and national interests.

IV. WHILE THE SUCCESSES PROVE RENEWABLE DEVELOPMENT IS POSSIBLE, THE UNDERLYING LEGAL AND POLICY STRUCTURES FAIL TO ENABLE TRIBAL SOVEREIGNTY AND MUST BE REFORMED

This final Section proposes regulatory reforms that are likely to spur increased tribal ownership of wind and solar projects for those that decide renewable energy development is aligned with their economic and political goals. Without such reforms, future projects in Indian country are likely to continue mimicking the extractive arrangements of the past, in which the tribe serves as lessor and receives minimal benefits.[516] The goal of these reforms is to increase tribal project ownership, which would aid not just the economic goals of the tribe, but also improve self-determination and build institutional capacity. In turn, the prospect of ownership would increase tribal interest in pursuing renewable energy projects.

A. Tribes Desire an Ownership Role That the Legal Structures Do Not Currently Promote

The regulatory mechanisms that enable tribes to pursue utility-scale wind energy projects with non-Indian business partners do not allow the tribe sufficient flexibility to structure the deals such that the tribe acquires an ownership interest. Ownership is necessary for the stated federal policy of promoting self-determination.[517] The leasing statutes lead to passive

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[516] Dreveskracht, *supra* note 123, at 439–40 (describing the need to avoid exploitative patterns of the past).
[517] Telephone Interview with Chip Lewis, *supra* note 68.

interests and the ITEDSA's TERA provisions are too burdensome. Reforms should focus on enabling tribal self-determination and the flexibility to adopt ownership interests, while at the same time retaining the current structure's essential protections for Indian lands. This Section proceeds in three parts: (i) an argument that self-determination requires project ownership; (ii) an explanation of how the current regulations do not promote tribal sovereignty; and (iii) a description of both promising and threatening proposed legal changes.

1. Self-Determination Demands Ownership

Among the case studies, the Navajo Nation project is the exception that proves the rule.[518] The Navajo have ownership because of the institutional capacity of their professionalized, sixty-year-old utility. By distributing the cost of generation projects across ratepayers over a long period of time, utilities enjoy greater flexibility in financing and are more able to bear the project costs. However, even NTUA may not have the financial capacity to build a project the size of Moapa Solar or Fort Mojave.[519] For the Kumeyaay Wind, Moapa Solar, Fort Mojave, and War Bonnet projects, financing requirements compelled the tribes to reluctantly adopt passive leasing structures.[520] While the steady stream of lease income is undeniably good, this passive lease arrangement does not promote the twin goals of self-determination and sovereignty.

Indeed, the case studies demonstrate that tribes prefer ownership to leasing.[521] This preference aligns with the scholarship on economic development in Indian country. Ownership allows for practical sovereignty, a prerequisite for development.[522] Practical sovereignty entails being in control of economic resources and increases the chances of long-term success.[523] The mechanism is simple: when tribal institutions are

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[518] Heffernan, *supra* note 16.

[519] Associated Press, *Navajo Plans Second Utility-Scale Solar Farm in Kayenta*, U.S. NEWS & WORLD REPORT (Jan. 26, 2018), https://www.usnews.com/news/best-states/arizona/articles/2018-01-26/navajo-plans-second-utility-scale-solar-farm-in-kayenta [https://perma.cc/2V68-AJE4].

[520] Telephone Interview with Chip Lewis, *supra* note 68 (stating that the Fort Mojave and Moapa tribes lacked the financial capacity to manage large projects, requiring them to turn to the flip arrangement in which the tribe is the lessor for at least the first ten years).

[521] CTR. FOR RESOURCE MGMT., *supra* note 91, at 2–3.

[522] Dreveskracht, *supra* note 90, at 71, 74–75; *see also* Royster, *supra* note 197, at 1065, 1068–69 (describing the findings of a Harvard Project on American Indian Economic Development study).

[523] Joseph P. Kalt & Joseph W. Singer, *Myths and Realities of Tribal Sovereignty: The*

in control, the institutions are strengthened and made accountable to members,[524] leading to more sustainable development.[525] If development is understood as "the process by which a community or nation improves its economic ability to sustain its citizens, achieve its sociocultural goals, and support its sovereignty and governing process,"[526] then renewable energy project ownership can strengthen self-determination and simultaneously support tribal values.[527] Conversely, where federal legislation compels tribes into passive arrangements, those processes limit self-determination and deprive tribes of needed income.[528] Although most tribes lack organizations with the expertise necessary to construct and operate a large renewable energy installation, low capital or institutional capacity need not bar partial or even full ownership: wind and solar projects are often owned by entities that contract for construction, operations, and maintenance services. Partial ownership structures, under which the tribe provides a developer with some share of project income, would allow for more flexibility. In the current framework, state taxation and federal tax credits work in tandem to make partial ownership structures uncompetitive. In short, all else being equal, state and federal taxes induce a developer to build outside of Indian country with a non-Indian partner rather than inside with a tribal partner.[529]

2. The Legal Structures Underlying Renewable Energy Projects Do Not Promote Self-Determination

The primary legal tool for wind and solar projects in Indian country is a Department of the Interior–approved lease pursuant to either the Indian Long-Term Leasing Act or the HEARTH amendments. The leasing laws undermine self-determination. The Act only provides a legal mechanism for entering into surface leases, *not* comprehensive authority to

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Law and Economics of Indian Self-Rule (Faculty Working Paper No. RWP04-016, 2004), cited by COHEN (2012), *supra* note 99, at 1322.

[524] Dreveskracht, *supra* note 90, at 37–38, 42–43.

[525] *See, e.g.*, Unger, *supra* note 1, at 339 (describing tribal control over forestry management).

[526] Manley A. Begay et al., *Development, Governance, Culture: What Are They and What Do They Have to Do With Rebuilding Native Nations?*, *in* REBUILDING NATIVE NATIONS: STRATEGIES FOR GOVERNANCE AND DEVELOPMENT 36 (Miriam Jorgensen, ed. 2007).

[527] *See* Dreveskracht, *supra* note 93, at 4, 6.

[528] *See* Unger, *supra* note 1, at 343 (describing how the Bureau of Indian Affairs bureaucratic processes limit tribal self-determination); *see also* Haddock & Miller, *supra* note 253, at 221–22 (claiming legal barriers to Indian management of resources are responsible for tribal poverty).

[529] See Annex I for maps showing how tribal projects are uncompetitive with those constructed immediately across the border.

pursue an energy development project or approve rights of way, which are often necessary for transmission and distribution wires.[530] What the legal tool does allow is for the tribe to take a passive, lessor position and receive lease payments. The approval process may be unwieldy and slow.[531] For those pursuing a speedy development timeline, the approval requirement feels like "run[ning] headlong into the federal government's trust responsibility, which is rooted in false and historical notions of Indian incompetence."[532] However, that process, and the trust responsibility, ensures a degree of protection for Native nations' lands. And nobody interviewed by this author reported the process harming or imperiling projects. The common fixation on time is misplaced and risks advocating for the removal of key protections: the procedural requirements that serve the tribal interest in maintaining control over a native nation's land base.

As Professor Elizabeth Kronk has written, the true problem with the Indian Long-Term Leasing Act, as amended by the HEARTH Act, is that it currently "erodes both tribal sovereignty and the federal [government's] trust responsibility."[533] First, Secretarial approval of tribal leasing regulations is contingent upon the incorporation of federal environmental law (being "consistent with" existing federal regulations), including provisions consistent with NEPA, *into* tribal law.[534] The requirement undermines tribal sovereignty by "forc[ing] [tribes] to accept foreign law as their own rather than develop law that is consistent with their environmental ethics, customs, and traditions,"[535] via the incentive of expediting approval time. Second, the HEARTH Act contains a broad, general waiver of federal liability that is inconsistent with the federal trust relationship: "[t]he United States shall not be liable for losses sustained by any party to a lease executed pursuant to tribal regulations."[536] Combined, Professor Kronk points out, "[t]he federal government wants to maintain control over development in Indian country, as demonstrated by the discussion of the environmental review provisions, but does not want to be liable for such control."[537]

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[530] Mills, *supra* note 177, at 54; *see also* Royster, *supra* note 190, at 124.
[531] U.S. GOV'T ACCOUNTABILITY OFF., *supra* note 198 (finding significant delays, poor management, lack of data, staff, and tracking all impede development in Indian country).
[532] Mills, *supra* note 177, at 51.
[533] Kronk Warner, *supra* note 2, at 1053–70.
[534] *Id.* at 1055.
[535] *Id.*
[536] *Id.* at 1059. *See also* 25 U.S.C. § 415(h)(7)(A) (2012); COHEN (2012), *supra* note 99, at 1119; COHEN (2017), *supra* note 99, at 79–80.
[537] Kronk Warner, *supra* note 2, at 1053.

The alternative legal mechanism for renewable energy development, the TERA, has simply been too costly and too risky to be useful. That said, Senate Bill 245, which passed as this Article went to press, amended ITEDSA in an effort to make TERAs more easily accessible. While a TERA would permit more flexibility and allow for ownership, no tribe has one. In short, TERAs are unappealing to tribes because of the federal waiver, shifting of costs, and invitation to non-Indians to participate in what should be internal policy matters.[538] And the expense is too much to bear: "[t]ribes have expressed concern that they are being saddled with the onerous costs of energy development without adequate resources to carry such costs."[539] For tribes acquiring TERAs, the federal government mandates an expensive, prolonged, and purely procedural environmental process without providing financial resources.[540] Along with costs, tribes must bear liability, as the ITEDSA (under which a TERA is issued) absolves the federal government of liability for losses so long as the instrument was entered into in accordance with an approved TERA[541] (following the passage of Senate Bill 245, this liability waiver was narrowed to solely negotiated terms).[542]

Tribes may elect not to pursue TERAs because the TERA process is perceived to hurt self-determination. Reduced federal trust liability should in theory be paired with an increase in tribal self-determination,

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[538] Kronk, *supra* note 220, at 830–32 (recounting the input of tribal representatives drawn from legislative history: "These bills appear to be designed as tools for trust 'reform' either overtly, by legislated abrogation of the government's trust responsibility"; the "legislation propose[s] a trade that may be unacceptable to some tribes . . . Traditional notions of tribal sovereignty protect tribes from incursion of States and non-members in the decision-making process"; the mandated environmental review is "contrary to the twin-goals of fostering tribal self-determination and promoting the efficient development of tribal minerals"; "One of our major concerns is the process that will be used to challenge tribal decisions made under their own regulations . . . [w]e believe this could cause great mischief for Indian energy development"). *See also id.* at 846–47.

[539] Masterson, *supra* note 1, at 344 (tribes are forced to "absorb the costs—both direct and indirect—of preparing TERAs, negotiating leases, . . . conducting environmental reviews, and responding to challenges by 'interested parties.'").

[540] *Id.* at 343–44; 25 U.S.C.A. 3504(g) (2018). Senate Bill 245 added a provision to the statute governing TERAs which requires the Secretary to provide financial assistance to the tribe equal to the amount that the Secretary would have otherwise expended in carrying out the review process. 25 U.S.C.A. § 3504(g) (2018). However, such funding is negotiated with the tribe and subject to the availability of appropriations, which may provide limited comforts to tribes facing unknown costs.

[541] 25 U.S.C.A. § 3504(e)(6)(A) (2018). *See* Kronk Warner, *supra* note 2, at 1068 (explaining why the trust waiver appeared in TERA).

[542] 25 U.S.C.A. § 3504(c) (2018).

but the TERA process effectively undermines tribal sovereignty.[543] The TERA is subject to public input and non-Indians may petition the Secretary to unilaterally review tribal compliance with a TERA and potentially cancel it.[544] Once the TERA is secured, the tribe must provide opportunities for public input on each lease or agreement and respond to public comments on its environmental review process prior to the approval of each sub-agreement.[545] "The irony of the public-review process is that it serves to protect states, non-tribal local governments, and non-tribal local residents at the expense of tribal self-governance."[546] Self-determination requires some degree of policy autonomy and insulation from outside interference, "yet the public-review process under the TERA system essentially encourages the very outside interference against which the trust doctrine is intended to protect."[547]

3. Reforms Should Focus on Practical Sovereignty and Self-Determination

Many of the proposed HEARTH and TERA reforms aim to streamline processes and thus shorten the project development time frame. But, according to the case studies, speed is not the problem. The primary issue is the regulations do not promote self-determination. Fixating on streamlining may do more to hurt tribes, as oversight is reduced and protections removed. This Section describes how most proposed reforms focus on streamlining, although they do include some positive provisions. Next, it highlights proposals that *would* promote self-determination.

a. Streamlining Is Not the Answer

While streamlining HEARTH and TERA processes would reduce delays, the case studies imply that is not the primary barrier to wind and solar development. Indeed, the 2015 GAO report, *Poor Management by BIA Has Hindered Energy Development on Indian Lands*, largely places blame for delays caused by administrative policies on the Bureau of Indian

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[543] Kronk, *supra* note 220, at 828–30, 836–37 (recounting how the TERA represents an incoherent conception of the federal trust responsibility through the legislative history); *see also* Masterson, *supra* note 1, at 345.
[544] Kronk, *supra* note 220, at 828–30, 836–37.
[545] *Id.*
[546] Masterson, *supra* note 1, at 345.
[547] *Id.*

Affairs.[548] But the more salient issues are related to equity and fairness: tribes have a "practical inability to tax non-Indian energy developments on leased lands due to state and local governments in many instances already taxing the project . . . [and] Tribes', as owners, . . . [are unable] to take advantage of incentives such as the [federal tax] incentives available to non-Indian project investors."[549] While proposed reforms to the statutory structures tinker with the current processes, reformers should instead focus on preempting state taxation and providing incentives for tribal wind and solar development.

Simply removing bureaucratic processes is not a good strategy for those concerned about tribal well-being. Senate Bill 3752, introduced in 2010, would have sped up Indian energy development without significantly increasing self-determination.[550] The Native American Energy Act, proposed by Rep. Don Young (R-Ak.) in the House in 2015, would have limited NEPA and judicial review of energy-related projects on tribal lands.[551] The bill would thus remove federal oversight without increasing tribal self-determination. Another House bill introduced by the same member, the American Indian Empowerment Act, raised the specter of termination era policies: authorizing tribes to request that the federal government transfer trust lands to the tribe in restricted fee status, for which the tribe could then approve leases and rights of way without federal pre-approval.[552] While this bill may have granted some autonomy, it would appear to remove any federal responsibility, something most tribes would consider extreme and would likely oppose.

b. Focus on Self-Determination

Although streamlining is the primary thrust of the reform bill (Senate Bill 245) that recently passed Congress and was signed into law by

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[548] *See also* Dreveskracht, *supra* note 123, at 442 (describing problems tribal officials identified related to Bureau of Indian Affairs oversight: "erroneous [ ] BIA records, which [ ] cause significant delay"; "lack of BIA staffing necessary"; "lack of standardization and coordination between [ ] DOI offices"; "lack of DOI communication with state and local governments"; "general apprehension to issue NEPA compliance decisions at the EPA, likely due to fear of litigation"; "BIA delays in approving Rights-of-Way").

[549] *Id.*

[550] The bill would have mandated interagency coordination of planning and decision-making, provided relief from transaction appraisal requirements, and eliminated fees assessed by BLM for applications for permits to develop leased lands. *See* Dreveskracht, *supra* note 123, at 445.

[551] Native American Energy Act, H.R. 538, 114th Cong. (2015).

[552] Mills, *supra* note 177, at 55–56.

President Trump,[553] this bill *does* include a few discrete changes that would serve tribal self-determination interests. Senate Bill 245, introduced in early 2017, amends ITEDSA to speed up TERA processes.[554] But the bill also includes authority to enter mineral development agreements under the Navajo Leasing Act and permits organizations with majority tribal ownership to enter into contracts with the tribe itself for leases or rights of way without pre-approval from the Department of the Interior.[555] The latter provision allows the tribe and tribal entities to "govern themselves." And since those agreements would be intratribal, the risk of losing control over the land base is reduced.[556] Further, placing control over those rights of way decisions entirely in tribal institutions would force accountability to tribal members over land use decisions.[557] Senate Bill 245 retains the federal trust waiver, but clarifies liability is waived just for negotiated terms.[558] Clarity reduces uncertainty and makes non-Indian developers more comfortable investing, but the retention of the blanket waiver is troubling. Lastly, Senate Bill 245 purports to link the TERA process with the HEARTH Act, as tribes that have "substantial experience in the administration, review, or evaluation of energy resource leases" would satisfy the TERA capacity requirement.[559] This reduces one of the barriers to the TERA, but as noted in Part II, other significant barriers, most notably cost, remain.

To the extent that they promote self-determination and allow tribes flexible tools to take ownership positions, some other, lesser-known

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[553] *S.245—Indian Tribal Energy Development and Self-Determination Act Amendments of 2017*, CONGRESS.GOV, https://www.congress.gov/bill/115th-congress/senate-bill/245/actions [https://perma.cc/AQ29-XUPK] (last visited Jan. 11, 2019). President Trump signed the bill into law on December 18, 2018.

[554] S. Rep. No. 115-84 at 13–14. The amendments make a TERA automatically effective after 271 days if the Secretary failed to approve or disapprove the TERA in the first 270 days. The reasons for disapproving a TERA are narrowed to four: "(1) the [ ] tribe fails to demonstrate capacity; (2) a provision of the TERA would violate applicable Federal law; (3) the TERA did not include the required periodic review and evaluation provisions; and (4) the TERA does not include any of the required enumerated provisions." *Id.* at 13. The scope of TERAs are clarified to include authorizing electrical generation facilities including renewable energy generation. New provisions will consider tribes to have sufficient capacity for TERAs if they had carried out approval of surface leases under the HEARTH Act without a compliance violation in the previous year, or carried out contracts under the ISDEA for three years without material audits.

[555] 25 U.S.C.A. § 3504(b)–(c) (2018).

[556] S. Rep. No. 115-84 at 13–14.

[557] *Id.*

[558] *Id.*

[559] 25 U.S.C.A. § 3501(9)(B) (2018).

proposals should be revisited. For example, some have suggested providing broader authority to Section 17 corporations, including the ability to enter into leases of up to seventy-five years.[560] Greater authority for Section 17 corporations would encourage the separation of politics and business, which in turn would reassure non-Indian partners while retaining the control and accountability benefits described in the paragraph above.[561] Along similar lines, Senate Bill 1684 (2011), which proposed ITEDSA amendments, should be reconsidered. It would have allowed an exemption to secretarial pre-approval for leases, business agreements, and rights of way granted by a tribe to a tribal energy development organization in which the tribe maintained a controlling interest.[562] Another proposed bill, the Indian Energy Parity Act of 2010, would have served self-determination interests by providing more authority to tribes on the design of environmental review processes.[563] And beyond amending ITEDSA or HEARTH, Professor Judith Royster identifies a number of ways in which the IMDA could be amended to promote wind and solar development in a manner that bolsters practical sovereignty.[564] Still others argue the ITEDSA process is designed for fossil fuel extraction, and that wind development in particular may require entirely new regulatory structures, especially since new court cases call into question whether wind development interferes with the subsurface mineral estate.[565]

When it comes to amending the legal structures underlying wind and solar development in Indian country, there is no silver bullet. But advocates "must convince themselves that positive movement in legal rules presage a better world. Positive movement is to be preferred to negative movement."[566] Positive movement includes those proposed reforms that enable self-determination while retaining the essential

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[560] Telephone Interview with Michael O'Connell, *supra* note 147.
[561] *Id.*
[562] Dreveskracht, *supra* note 123, at 447.
[563] Royster, *supra* note 190, at 124–27.
[564] *Id.* at 129–31, 133, 134–46 (including IMDA applicability for renewable energy resources and maintaining Section 81 contracts to provide flexibility to tribes; rendering IMDA agreements effective in the absence of secretary action after a certain period; regularizing the "best interest" standard in IMDA legislation).
[565] Unger, *supra* note 1, at 360–62. Such an argument may gain more currency moving forward after a recent case decision. *See* Osage Wind, LLC v. Osage Minerals Council, 871 F.3d 1078 (10th Cir. 2017), *cert. denied*, Jan. 7, 2019 (raising questions about whether wind development in Indian country can be done through surface leasing alone).
[566] RODGERS, JR. & BURLESON, *supra* note 122, at 490.

protections that date back to the eighteenth century Indian Nonintercourse Act.[567]

B. Federal Tax Policy and Financing Decisions Hurt Tribes and Do Not Fulfill the Federal Trust Responsibility: Those Policies Must Change

Through its tax policies, the federal government created structural disincentives for renewable energy development on tribal lands. Therefore, to meet its trust responsibility, the federal government should alter its tax policies and dramatically increase financing for wind and solar in Indian country.[568] The Investment and Production Tax Credits have enabled most renewable development among non-Indians. But the tax credits encouraged limited tribal ownership, disempowering tribes by requiring non-Indian investors who could exploit the tax credits.[569] This structure causes tribes to "los[e] significant control over their own critical infrastructure . . . for an extraordinary long period of time."[570]

Because of the structure of federal incentives, the renewable revolution largely passed by Indian country. While Congress could have remedied the inequity, it abdicated its trust responsibility when it failed to make the tax credits transferrable, rendering tribally owned projects uncompetitive as compared to those immediately across the border. For tribes to enjoy the same benefits non-Indians have enjoyed over the last fifteen years, Congress should enact Indian-specific incentive programs.[571] Congress could provide tax incentives for non-Indian utility companies

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[567] These protections include the right of Indians to sell land under the protection of the federal government. *See* William E. Dwyer, Jr., *Land Claims Under the Indian Nonintercourse Act: 25 U.S.C. § 177*, 7 B.C. ENVTL. AFF. L. REV. (1978).

[568] This Article adopts Professor Alex Tallchief Skibine's conception of the trust doctrine. The trust doctrine should be explicitly decolonized: it should be viewed exclusively to protect and encourage tribal self-government. Skibine refers to this conception as the "sovereign trust branch," as opposed to the "guardian ward branch." Alex Tallchief Skibine, *Towards a Trust We Can Trust: The Role of the Trust Doctrine in the Management of Tribal Natural Resources*, *in* TRIBES, LAND, AND THE ENVIRONMENT 9 (Sarah Krakoff & Ezra Rosser eds., 2012).

[569] Kronk, *supra* note 101, at 469.

[570] *Id.* (Once the tax credits are phased out, tribally owned projects will be able to compete on more even terms. Many developers and large solar and wind companies believe that phasing out the Investment Tax Credit and Production Tax Credit is a good thing, as only a few large banks were able to exploit the tax-equity flip model, and the incentives are no longer strictly necessary to make wind and solar generation competitive with traditional fossil fuel power plants.) Telephone Interview with George Burdette, *supra* note 10.

[571] Ravotti, *supra* note 29, at 305.

which purchase electrical energy generated in Indian country. Or instead of tax credits, Congress could provide direct payments for tribal owned renewable generation. Or Congress could establish a national Renewable Portfolio Standard for Indian energy.[572] Congress could also subsidize states that create feed-in-tariff programs that provide a guaranteed price for wind and solar generated on reservations. In the name of reparatory justice, Congress should consider passing an alternative incentive program.

In addition to new incentives, Congress must appropriate more money for the loan and grant programs described in Part I. While ITEDSA permits a loan guarantee program of up to two billion dollars, and the Senate Bill 245 amendments compel the Secretary of Energy to issue regulations managing such a program, only a couple million dollars have been appropriated.[573] Indian country holds a disproportionate share of renewable energy resources in the United States, and utilizing that energy is key to mitigating the most devastating impacts of climate change.[574] For national security, environmental, and public health reasons, it is in the national interest to support wind and solar in Indian country. Further, such support would serve the federal trust responsibility by protecting and encouraging tribal self-determination.

C. State Taxation Stifles Tribal Power, Creates Overall Economic Loss, and Should Be Preempted by Congressional Action

State taxation of activity in Indian country is not only unfair to sovereign tribes, it creates an overall economic loss[575] that harms the *state* as well.[576] While states should therefore be in favor of remedying the uncertainties created by common law state tax doctrine, it would be politically contentious in the state legislature to advocate for change, as the focus would inevitably be on the loss of current income rather than on the long-term gain.[577] Therefore, Congress can and should use its

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[572] States could similarly create an RPS requirement for energy generated on reservations.
[573] 25 U.S.C.A. § 3502(c) (2018); *Tribal Energy Loan Guarantee Program*, U.S. DEP'T OF ENERGY, https://www.energy.gov/lpo/tribal-energy-loan-guarantee-program [https://perma.cc/DB94-HNF2] (last visited Jan. 11, 2019).
[574] *See* discussion *infra* Part I.
[575] *See* Haddock & Miller, *supra* note 253, at 187.
[576] This paragraph borrows heavily from Kelly S. Croman & Jonathan B. Taylor, *Why Beggar Thy Indian Neighbor?: The Case for Tribal Primacy in Taxation in Indian Country*, *in* JOINT OCCASIONAL PAPERS ON NATIVE AFFAIRS, THE HARV. PROJECT ON AM. INDIAN ECON. DEV. & THE UNIV. OF ARIZ. NATIVE NATIONS INST. (May 4, 2016).
[577] *Id.*

plenary power to explicitly preempt all state taxation of non-Indians contracting with tribes and tribal entities in Indian country, thereby resolving the increasingly messy common law doctrine created by the courts.[578]

1. State Taxation in Indian Country Burdens Both Tribes and States

The doctrine described in Part II creates an enormous amount of legal uncertainty and potential litigation, drives away business investment, raises the costs for developing projects, delays deals, and forces inefficiencies such as site selections based on trust status rather than infrastructure access.[579] The doctrine clearly stifles economic development on reservations across the country. But Indian economic development helps state growth. Tribal lands are often small and embedded in larger states, so "[s]tate economies benefit when Indians participate more in the state economy and are better educated, healthier, and more secure."[580] Claims that Indian economic growth from, for example, casinos, causes state fiscal shrinkage are not fact-based, but "[t]he evidence that reservation economic growth benefits state economies is accumulating."[581] In addition to the mutual economic gains, wind and solar development on native lands would bring health, local environment, and climate benefits for neighboring states.

2. The Courts Created a Problem

The common law doctrine built between the *Bracker* and *Colville* cases described in Part II create uncertainty and drive investment out of reservations. As between two states, dual taxation and tax uncertainty are resolved through the doctrine of apportionment, which derives from the interstate commerce clause. But no such equitable apportionment rule applies in Indian country,[582] thereby creating overlapping tax au-

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[578] *See* United States v. Lara, 541 U.S. 193, 202 (2004) ("Congress, with this Court's approval, has interpreted the Constitution's "plenary" grants of power as authorizing it to enact legislation that both restricts and, in turn, relaxes those restrictions on tribal sovereign authority."). Resolving the state taxation problem for tribes would relax a restriction on tribal sovereign authority. That is, if Congress's plenary power may be used to hurt tribes then it may be used to help them too.

[579] Croman & Taylor, *supra* note 576, at 11.

[580] *Id.* at 15.

[581] *Id.* at 16.

[582] *Id.* at 3. *See also* Cotton Petroleum Corp. v. New Mexico, 490 U.S. 163 (1989).

thority, which leads tribes to forgo investment or grant tax concessions. This problem is especially acute for wind and solar projects reliant upon federal tax incentives, as once a non-Indian entity claims project ownership, it will be subject to state tax. Even if the tribe negotiates significant royalty fees, lease payments, or payments-in-lieu-of-taxes, the neighboring state and county are likely to receive more tax revenue than the hosting tribe.[583] Tribes are entitled to assert full taxation,[584] but doing so would drive all investment away. The courts, when fashioning rules governing state taxation of non-members in Indian country, have rejected the legal importance of such "downstream economic consequences."[585] But if state taxation of non-members were preempted, either under a *Bracker* analysis or otherwise, the potential dual taxation problem disappears.

3. Congress Can Fix It

Congress should remedy the situation through legislation. Congress has clear authority to preempt state taxes and can overturn the muddled common law doctrine on state taxation of non-members in Indian country. Currently, the particularized preemption under *Bracker* creates uncertainty and makes project structuring challenging. Parties must seek out state tax lawyers for legal opinions on state authority early in the development process, as seeking a state to withdraw its tax authority after construction is difficult.[586] The Bureau of Indian Affairs attempted to preempt state taxation through regulation,[587] (and stated in the regulations that the state and county may not tax "fixed facilities" under approved leases) but they likely have no authority to do so.[588] And in the absence of a legislative fix, courts are hesitant to find state taxation is preempted.[589] While tribal-state tax neutrality agreements or tax

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[583] Michael Connolly Miskwish, Presentation, *Systemic Economic Constraints to Energy Development on Indian Lands*, presented at the Southern California Tribal Tax Summit, Oct. 30, 2017.
[584] Merrion v. Jicarilla Apache Tribe, 455 U.S. 130 (1982).
[585] Wagnon v. Prairie Band Potawatomi Nation, 546 U.S. 95, 114 (2005).
[586] Telephone Interview with Michael O'Connell, *supra* note 147.
[587] *See* discussion *supra* Section II.C.
[588] *See* discussion regarding Agua Caliente Band of Cahuilla Indians v. Riverside County, *supra* Section III.C.2.c.
[589] *See, e.g.*, Ute Mtn. Ute Tribe v. Rodriguez, 660 F.3d 1177 (10th Cir. 2011) (finding no Bracker preemption in part because of state interest due to off-reservation transportation infrastructure); Barona Band of Mission Indians v. Yee, 528 F.3d 1184 (9th Cir. 2008) (permitting state taxation of non-member contractor); Meshantucket Pequot Tribe v. Town of Ledyard, 722 F.3d 457 (2nd Cir. 2013) (allowing state tax of non-Indian slot

credit schemes[590] provide more certainty,[591] they are subject to the whims of the neighboring state and create co-management challenges.[592] Tax compacts also often last for a term of years, creating uncertainty for wind and solar projects that endure for decades. Under the current common law framework, proponents of tax fairness in Indian country fight policy battles state by state, and the state rules vary widely.[593]

Congress could preempt the current state law and override the common law doctrine in a few different ways. First, Congress could pass the Tribal-State Tax Sharing Equity Act, which would allow tribes and states to petition the Department of the Interior for approval of tax compacts governing the distribution of revenues from non-members in Indian country.[594] The Act would provide the Department authority to preempt tax liability incurred as a result of deviation from the negotiated compacts.[595] Another solution would be for Congress to simply ban state taxation of non-members in Indian country. The author would argue the best route is to incorporate into law the Bureau of Indian Affairs' regulations that attempted to preempt state tax on improvements to leases on trust lands. In addition, that legislation should clarify that statewide renewable energy incentives do *not* warrant state tax on wind and solar installations. While Renewable Portfolio Standards act as a driver for renewable energy development, they should not endow the state with the authority to tax projects in Indian country. Renewable Portfolio Standards have extraterritorial effects: installations in other states or countries may benefit from the incentive,[596] and the Renewable Portfolio Standard "should not be seen as an excuse to single out Native communities for plunder."[597] Even if state taxation is not preempted more broadly, it should

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machine lessors). *But see* Seminole Tribe of Florida v. Stanburg, 799 F.3d 1324 (11th Cir. 2015) (engaging in particularized inquiry, following Bracker preemption analysis, to find state rental tax on lessees of tribal land was preempted).

[590] A tax credit scheme would look like the following: states would agree to provide non-member businesses a tax credit for on-reservation activities/transactions.

[591] *See* Michael P. O'Connell, *Tax Neutrality Agreements and Business Development on Indian Reservations*, LAW SEMINARS INT'L., TAX MGMT. FOR TRIBES (Feb. 22, 2008), http://www.lawseminars.com/materials/08TRIBTWA/tribtwa%20m%20O'Connell%202-6.pdf. [https://perma.cc/G8BQ-FJMW].

[592] Tanana & Ruple, *supra* note 26, at 46–47, 50, 52.

[593] Connolly Miskwish, *supra* note 300.

[594] Tanana & Ruple, *supra* note 26, at 46–47, 50, 52.

[595] *Id.*

[596] *See, e.g.*, Allco Fin. Ltd. v. Klee, 861 F.3d 82 (2nd Cir. 2017).

[597] Connolly Miskwish, *supra* note 300. As an example, consider the Moapa project, in which the California utility was able to use RECs generated out of state to meet its obligations under California law. Such an arrangement is commonplace for utilities that cross state lines.

be preempted in the area of renewable energy development due to the strong federal interest in shifting the electrical system to renewable sources to mitigate the worst effects of climate change.

4. Focus on Creative Advocacy

Advocates of preempting state taxation should continue to educate and exert pressure upon members of the Senate Committee on Indian Affairs and the House Committee on Natural Resources. It can be difficult to explain the structural effects of obscure tax laws, so creative advocacy is important. For example, this author would recommend enlisting MIT's team at Climate Interactive to simulate, in a game scenario, how state assertions of taxation drive investment out of Indian country. Congressional staffers and representatives could play the simulation in order to understand the problem viscerally.

D. Changing Incentives, Regulations, and Technology Will Open Up New Opportunities in Indian Country for Creative and Forward-Looking Tribes

In the renewable energy industry, new technologies, business structures, and regulation are changing what is financially feasible. Change is not new: the electricity industry as a whole has been in a constant state of flux since the 1980s. The one hundred-year-old electric utility model continues its slow disintegration as the regulatory paradigm moves from cost-based rate setting to market-driven prices. Incentives at both the state and federal level have pushed, and will continue to push, generation towards more flexible and renewable energy sources. In the shifting milieu, Indian country project developers should advocate for and seize upon changes that allow tribes to take advantage of new opportunities. However, before turning to the emerging opportunities, this Section encourages Congress to remedy a new and possibly significant bump in the road for wind development, lest that technology's potential on reservations be derailed.

1. New Challenges for Wind Development

Tribes are facing new challenges for wind energy development: (1) turbulence from nearby wind farms; and (2) judicial decisions regarding mineral rights. Turbines create downstream turbulence and reduce electricity production capacity: if neighboring landowners construct turbines,

neither will be able to recover the full potential of the resource.[598] States resolve the problem through "communitization and pooling," aggregating the resource interests and allocating proceeds among those interests.[599] But states cannot legally pool Indian resource interests; the Department of the Interior must approve of the pooling or else tribes cannot participate in the scheme.[600] Without that approval, nearby wind farms "harm the economic interests of the tribe because it would prevent them from sharing in the electrical production of the communitized area [and may discourage wind farms on tribal lands], due to turbulence created from the neighboring communitized wind project."[601]

The pooling problem creates a conflict between state and tribal exploitation of wind resources and calls for a Congressional solution. The legal problem could impede wind development and is likely to increase in scope, given how wind farms surround many reservations.[602] Resolving the cross-border turbulence problems at the national level would be in the interest of all parties. Generally speaking, proposed wind projects that lie adjacent to one another impact each other and must be coordinated. In the Gray Mountain area of Arizona, both the Navajo Tribal Utility Authority and the Diné Power Authority—both Navajo Nation entities—planned on constructing a wind project.[603] The reasons for that project not proceeding are unclear.[604] While Senate Bill 245 allowed for tribes to enter into leases and business agreements related to the "pooling, unitization, or communitization of [the tribe's] energy mineral resources," wind may not be an "energy mineral resource."[605]

The second major issue for wind development follows from a Tenth Circuit decision in late 2017, *United States v. Osage Wind, LLC*, which calls into question the leasing paradigm for wind projects.[606] The Supreme Court recently denied a petition for certiorari, leaving the question

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[598] *See* Wyatt Swinford, *Lessons Learned: Avoiding the Hardships of Tribal Mineral Leasing in the Development of Oklahoma Tribal Wind Energy*, 40 AM. INDIAN L. REV. 99, 125 (2016). Similar problems arise for oil and gas leasing.
[599] *Id.*
[600] *Id.* at 127 (citing Kirkpatrick Oil & Gas Co. v. United States, 675 F.2d 1122, 1126 (10th Cir. 1982)).
[601] *Id.*
[602] *See infra* Annex I.
[603] Cherylin Wilson, *The Ecological Effects of a Native Wind Energy Project—Navajo Nation* 5 (July 2007), https://www.energy.gov/sites/prod/files/2016/01/f28/cherilyn_wilson.pdf [https://perma.cc/LC97-BTA7].
[604] Telephone Interview with Michael O'Connell, *supra* note 147.
[605] 25 U.S.C.A. § 3504(a)(1)(C) (2018).
[606] United States v. Osage Wind, LLC, 871 F.3d 1078 (10th Cir. 2017).

open.[607] In that case, a non-Indian holder of a fee simple surface estate inside of a reservation's boundaries leased their land to a non-Indian wind company to construct turbines.[608] The tribe opposed the construction and sued, based on the theory that the excavation necessary to place the foundations of the turbines interfered with the subsurface estate (held by the tribe) and constituted mining without a mineral lease.[609] Although the tribe won, that victory creates new complexity for other tribes considering wind projects. For one thing, the Indian Long-Term Leasing Act and HEARTH amendments do not apply to mineral leases, meaning the most common method of constructing projects in Indian country may now be unavailable. Further, the Allotment Act's legacy created split estates, and the attendant conflicts between mineral and surface estates throughout Indian country.[610]

This problem also calls for Congressional action or else wind development in Indian country will be chilled. Although wind estates are severable and can be partitioned, rules vary from state to state and the Bureau of Indian Affairs regulations do not reflect the complexity.[611] Historically, mineral leasing follows a wholly separate regime from surface leasing,[612] and legislation is necessary, especially since the Supreme Court has decided not to provide guidance, to address the new challenge in a manner that strikes the appropriate balance between fostering tribal ownership and retaining the tribe's ability to counter developments such as *Osage Wind* that interfere with tribal land interests.

2. Emerging Opportunities

Changes in financing mechanisms, legal rules, and technology will inevitably create more opportunities for renewable energy development in Indian country. First, the changing industry allows for new, creative financing of large renewable projects. Tribes should take advantage of these opportunities. Historically, wind and solar projects rely upon Power Purchase Agreements with utility off-takers, under which

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[607] *Id.*, *cert. denied*, Jan. 7, 2019.
[608] *Id.* at 1083.
[609] *Id.* at 1083–84.
[610] Tanana & Ruple, *supra* note 26, at 40–41; *see also* Swinford, *supra* note 598, at 118–19.
[611] Swinford, *supra* note 598, at 113–14.
[612] *See Surface Rights vs Mineral Rights in Oil & Gas Leasing*, MINERALWISE (2011), https://www.mineralweb.com/surface-rights-vs-mineral-rights-in-oil-gas-leasing/ [https://perma.cc/SKG3-WPGB].

the utility often purchases the energy and environmental attributes for a period of years. But over the last few years, a new marketplace has emerged, composed of different buyers and innovative commodities. Large corporations increasingly set climate change goals requiring purchases of renewables and enter into synthetic, or virtual, Power Purchase Agreements with generators physically unconnected to corporate structures.[613] Carbon markets are proliferating around the world, in which participants buy and sell carbon offsets, property interests that represent the removal or mitigation of carbon emissions from the atmosphere.[614] Some markets, including the one regulated by the California's Air and Resources Board, permit the trading of offsets generated outside the physical territory of the political entity that created the market.[615] Tribes can create and sell offsets, not just through renewable energy projects but also through forestry management and other carbon capture, storage, and sequestration practices.[616] Creative financing is essential for success, and unbundling the environmental attributes from the energy produced opens up more opportunities for tribes because large institutions, corporations, and impact investors may desire to purchase the environmental attributes (such as Renewable Energy Credits) or offsets, but not the underlying energy. Accounting for the attendant health benefits of wind and solar as compared to traditional fossil fuel generation may further encourage outside investment in tribal projects. To acquire the institutional and financial capacity to meaningfully participate in these new markets, tribes should consider building multitribal platforms or entities such as a Renewable Energy Services Corporation.[617]

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[613] *See* Georgina Gustin, *Which U.S. Industries Are Setting the Strongest Climate Goals?*, INSIDECLIMATE NEWS (Apr. 24, 2018), https://insideclimatenews.org/news/24042018/american-companies-leaders-greenhouse-gas-targets-renewable-energy-ceres-study [https://perma.cc/L4BC-3HBH]; Michelle Froese, *The rise of corporate PPAs for renewable energy*, WINDPOWER ENG'G (Aug. 13, 2018), https://www.windpowerengineering.com/business-news-projects/the-rise-of-corporate-ppas-for-renewable-energy/ [https://perma.cc/PP7Z-FB46].

[614] *See The World's Carbon Markets*, ENVTL. DEF. FUND, https://www.edf.org/worlds-carbon-markets [https://perma.cc/T446-92WX] (last visited Jan. 11, 2019).

[615] *See* California Air Resources Board, California Air Resources Board Offset Credit Regulatory Conformance and Invalidation Guidance (Feb. 2015), https://www.arb.ca.gov/cc/capandtrade/offsets/arboc_guide_regul_conform_invalidation.pdf [https://perma.cc/7PCA-SB8A].

[616] *See, e.g.*, Kronk, *supra* note 101, at 462 (describing carbon capture and storage projects of the Kootenai and Salish).

[617] Dean B. Suagee, *Commentary, Renewable Energy Service Companies for Indian Country*, A.B.A. SEC. ENV'T, ENERGY & RES. WINTER 2017 at 50.

Second, legal changes could radically change the landscape and make previously impossible projects financeable, especially wind projects across the Midwest, allowing tribes such as the Rosebud Sioux to construct these projects.[618] In the past few years, entities have contemplated merchant transmission lines from the Midwest to the wholesale electricity markets in the eastern half of the country.[619] Those lines would dramatically cut transmission costs and allow wind farms to flourish in the Dakotas, Nebraska, and Kansas, just as they have in Oklahoma[620] and northern Texas.[621] However, state Public Utility Commissions have denied licenses for the merchant transmission projects because of the influence of established utilities and legislative limits as to which benefits and costs the Commission can weigh.[622] Minor changes in state legislation, such as directing the Commissions to consider the benefits of wind and solar project *construction* within the state borders rather than just benefits to ratepayers, would allow the transmission lines to move forward and render wind projects on Midwestern tribal lands economically feasible for the first time. Similarly, the federalization of transmission line siting would increase transmission infrastructure in the Midwest and Southwest to wheel both wind and solar energy from those resource-rich areas to population centers on the coasts. Changes to federal or state incentives, including feed-in-tariffs and specific, Indian energy requirements within Renewable Portfolio Standards would also spur growth.[623]

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[618] *See, e.g.*, Garry, Spurlin & Nelsen, *supra* note 69, at 450–51 (describing high transmission costs and constraints on siting possibilities). *See also* Tracey A. LeBeau, *The Green Road Ahead: Renewable Energy Takes a Stumble but is on the Right Path, Possibly Right Through Indian Country*, 56 FED. LAW 38, 44 (2009).

[619] *See* Emma Foehringer Merchant, *US Wind Industry Frets as Major Transmission Lines Stall*, GREENTECH MEDIA (Mar. 9, 2018), https://www.greentechmedia.com/articles/read/an-argument-as-old-as-wind-the-transmission-conundrum#gs.xrQ0Crw [https://perma.cc/Y24W-L78X] (discussing the Grain Belt Express Clean Line and other proposed projects).

[620] Jack Money, *Oklahoma moves into No. 2 spot for wind power capacity in the nation, association says*, NEWSOK (Jan. 31, 2018), https://newsok.com/article/5581518/oklahoma-moves-into-no.-2-spot-for-wind-power-capacity-in-the-nation-association-says [https://perma.cc/HM86-5NNY].

[621] Rye Druzin, *Texas wind generation keeps growing, state remains at No. 1*, HOUS. CHRONICLE (Aug. 23, 2018), https://www.houstonchronicle.com/business/energy/article/Texas-wind-generation-keeps-growing-state-13178629.php [https://perma.cc/V5TS-WLVW].

[622] *See, e.g.*, In the Matter of the Application of Grain Belt Express Clean Line, Mo. Pub. Serv. Comm'n (July 1, 2015). *See also* Ill. Land Owners Alliance v. Ill. Commerce Comm'n., 2017 WL 121302 (Ill. 2017).

[623] *See, e.g.*, Masterson, *supra* note 1, at 357; *see also* Hamilton, *supra* note 30, at 1409–10 (describing a Canadian province's RPS with a set-aside for tribal energy projects).

Lastly, technological innovation can open up possibilities. Regulation at the state level and within Federal Energy Regulatory Commission–operated wholesale markets increasingly fosters technology-neutral, market-based pricing for electricity services. This tends to drive innovation in the industry, leading to new technologies such as energy storage. Hybrid installations, in which solar or wind generation is paired with energy storage capacity are likely to become commonplace. If those installations can be "islanded," the resulting minigrids would increase resilience to natural disasters and bolster energy sovereignty/independence for tribes.[624] Tribes with developed utilities such as Navajo Nation are well placed to seize new opportunities opened up by cheaper energy storage, off-grid solar, and community-scale solar.[625]

CONCLUSION

Increasing renewable energy development in Indian country would serve tribal, state, and national interests in health, economic growth, and climate change mitigation. But thus far, development has largely faltered, with only a couple of utility-scale projects achieving commercial operation. This Article identifies the largest legal and policy problems slowing growth, analyzes the successful projects to derive lessons for Indian and non-Indian developers considering wind or solar projects, and recommends certain changes that would promote further renewable energy development in Indian country in a manner that promotes tribal self-determination. Without those changes, renewable energy could be little more than the latest iteration in a long pattern of exploitative resource extraction agreements on reservations. Legal structures underlie and generate that pattern. Restructuring those legal systems is necessary for wind and solar development in Indian country to meet its promise of promoting greater tribal self-determination and more robust clean energy economies.

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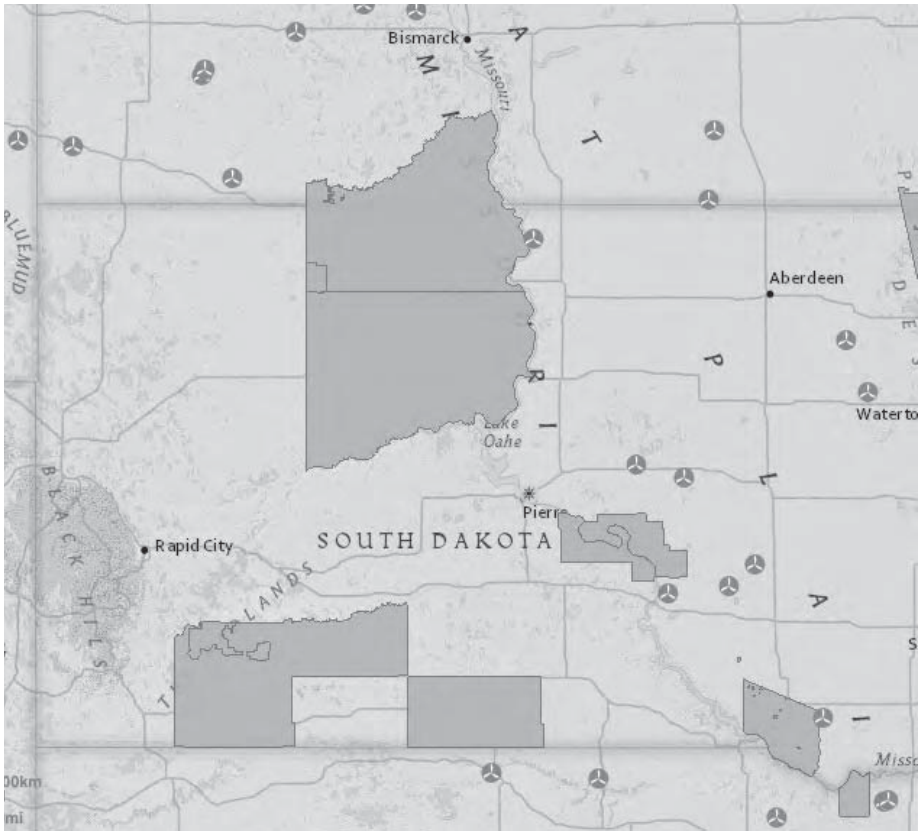
[624] *See* NATIONAL WILDLIFE FEDERATION, *supra* note 114, at 5.

[625] *See* White Hawk, *supra* note 1, at 14 (describing new opportunities from energy storage, off-grid solar, and community-scale solar). The Navajo may be particularly well placed, given the transmission lines and rights of way already in place for the soon to be retiring NGS. Brett Isaac and Tony Skrelunas, *Window of Opportunity: Navajo Solar*, DINÉHÓZHÓ (Dec. 2017), http://ieefa.org/wp-content/uploads/2017/12/Window-of-Opportunity-Navajo-Solar-December-2017.pdf [https://perma.cc/3FPU-6UG8] (last visited Jan. 11, 2019).

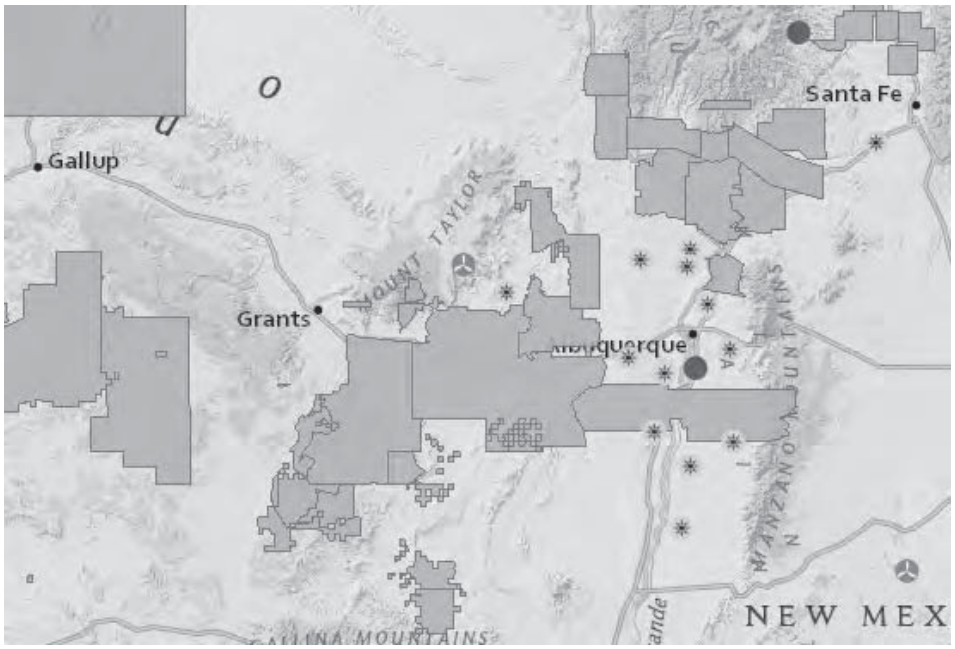
ANNEX I

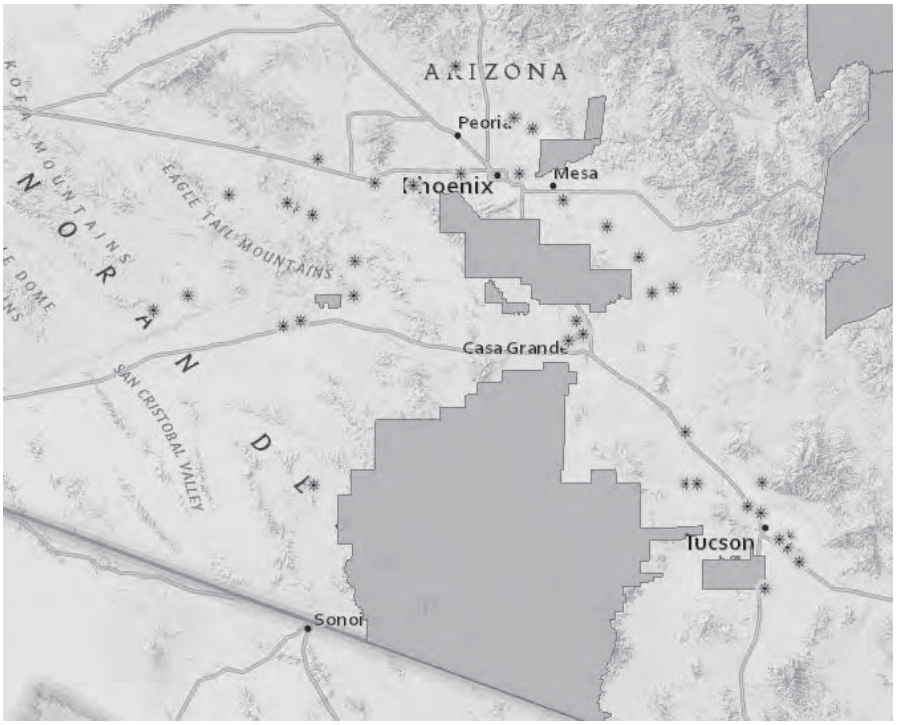
Maps Showing That the Current Framework Drives Wind and Solar Projects out of Indian Country

In the following maps, tribal trust lands are shaded darker, sun icons represent utility-scale solar PV generation stations, while the windmills represent wind farms.[626]



[626] *U.S. Energy Mapping System*, U.S. ENERGY INFO. ADMIN., https://www.eia.gov/state/maps.php [https://perma.cc/8S63-CFZT] (last visited Jan. 11, 2019) (use National Geographic base map and apply filters for solar power plants, wind power plants, Indian Lands).


Santa Fe
Gallup
Grants
NEW MEX


ARIZONA
Peoria
Mesa
EAGLE TAIL MOUNTAINS
Casa Grande
SAN CRISTOBAL VALLEY
Tucson