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# South Dakota: Landscape of Renewable Energy Policy

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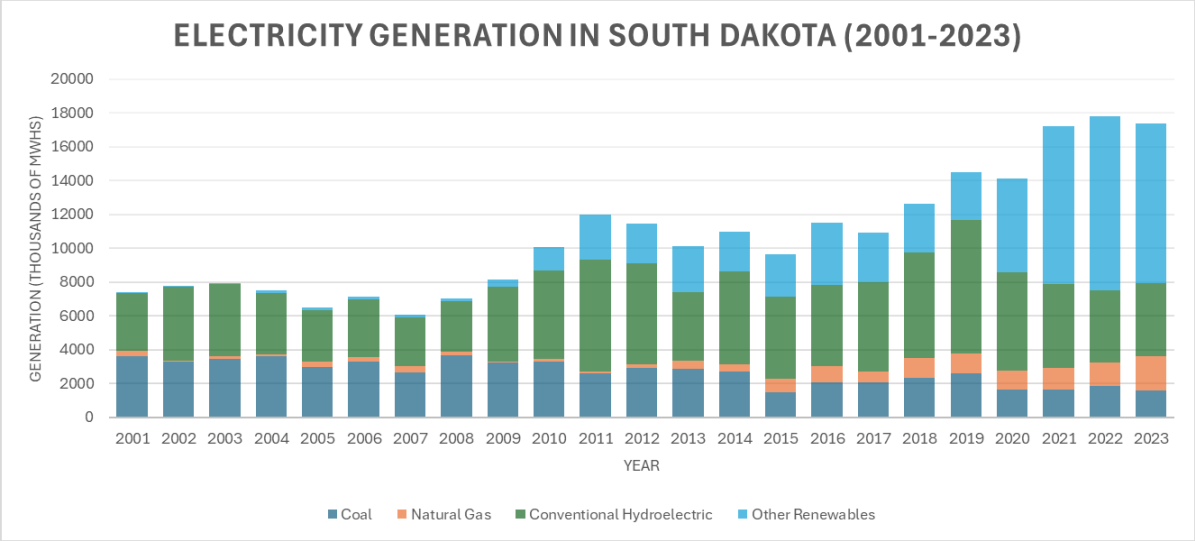
## SOUTH DAKOTA'S EXISTING ENERGY LANDSCAPE: AN OVERVIEW

*Existing Electricity Mix and Sector Structure*

As shown in Figure 1, South Dakota's electricity generation has undergone significant changes over the past two decades, transitioning away from coal dependency and towards a mix of conventional hydropower, natural gas, and renewable energy sources.

**Figure 1:** Electricity Generation in South Dakota (2001-2023)[1]




As of 2023, wind energy constitutes 55% of the state's electricity generation, followed by hydropower, which provides approximately 20% annually, depending on drought conditions.[2] Natural gas, having recently surpassed coal, is the third-largest source of electricity, highlighting a steady move towards lower carbon energy.[3] Solar energy remains nascent, contributing less than 1% of electricity generation in 2023. However, utility-scale projects such as the Fall River Solar Farm and the Wild Springs Solar Project are set to expand solar energy's role in South Dakota's energy mix in the coming years.[4] Electricity is exported to neighboring states, leveraging the state's surplus renewable energy capacity.[5]

Key actors in South Dakota's electricity sector include investor-owned utilities (IOUs), rural electric cooperatives, and municipal utilities. Six major IOUs collectively serve 60% of the state's population, while 28 rural cooperatives provide electricity to 35%, and municipal utilities account for the remaining 5%.[6] The South Dakota Public Utilities Commission (PUC) oversees these entities, ensuring service quality and regulating rates.[7]

*Renewable Energy Potential and Current Utilization*

South Dakota is endowed with abundant renewable energy resources, including wind, hydropower, solar, and geothermal energy. The state's wind energy potential is particularly notable, with an estimated 418,000 MW of capacity.[8] As of 2023, only a fraction of this potential

has been tapped, with 26 active wind projects providing 3,462 MW of capacity.[9] Much of this development occurs on agricultural land in the eastern part of the state, where dual land use supports both farming and energy production.[10] Large swaths of high-quality wind resources in the southwestern region remain untapped, presenting significant opportunities for future development.[11, 12]

Hydropower, the second-largest renewable source, leverages reservoirs along the Missouri River.[13] While hydropower generated 21% of South Dakota's electricity in 2023, its output has declined in recent years due to drought conditions.[14] Solar energy, though currently underutilized, shows promise with the introduction of utility-scale projects. The state's solar potential is highest in the southwestern region, though the land-use tradeoffs between herbaceous rangeland and agricultural land present challenges for large-scale solar deployment.[15]

Geothermal energy represents an emerging opportunity. Enhanced geothermal technologies could unlock substantial resources, particularly in the south-central portion of the state, much of which overlaps with Native American reservations.[16] [17] Tribal lands hold significant potential for wind, solar, and geothermal energy development, but issues such as interconnection costs and financing have delayed large-scale projects.[18] [19]

*Land Use and Renewable Energy Tradeoffs*

South Dakota's land use patterns reveal a strategic interplay between agricultural production and renewable energy development. As shown in Figures 1 and 2, in the eastern part of the state, vast tracts of farmland, predominantly used for corn production, support ethanol generation (Fig. 1) while also serving as sites for wind energy projects (Fig. 2).[20, 21] In contrast, the western region consists primarily of herbaceous rangelands that have remained largely undeveloped for agriculture.[22, 23] A substantial portion of these rangelands falls within tribal territories (Fig. 4), presenting unique opportunities and challenges for renewable energy deployment.

Solar energy potential in South Dakota underscores a critical land-use tradeoff. As shown in Figures 1 and 3, the southwest portion of the state offers the highest solar resource potential (Fig. 3) but overlaps with intact herbaceous ecosystems (Fig. 1).[24, 25] Developing solar infrastructure in these areas would impact the ecosystem, prompting debates over prioritizing ecological preservation versus optimizing energy generation. Alternatively, agricultural lands in the eastern region offer less favorable solar resources but reduce environmental tradeoffs.[26, 27] This geographic and ecological dichotomy highlights the complex considerations inherent in South Dakota's renewable energy strategy.

**Figure 2:** *South Dakota Land Cover Map*[28]

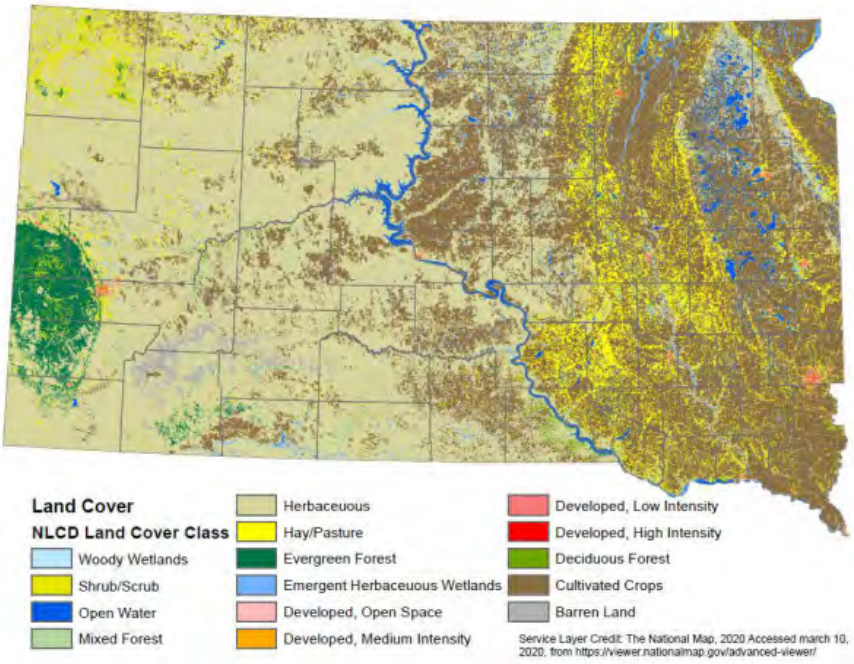



**Figure 3:** *South Dakota Wind Resource Map.*[29]

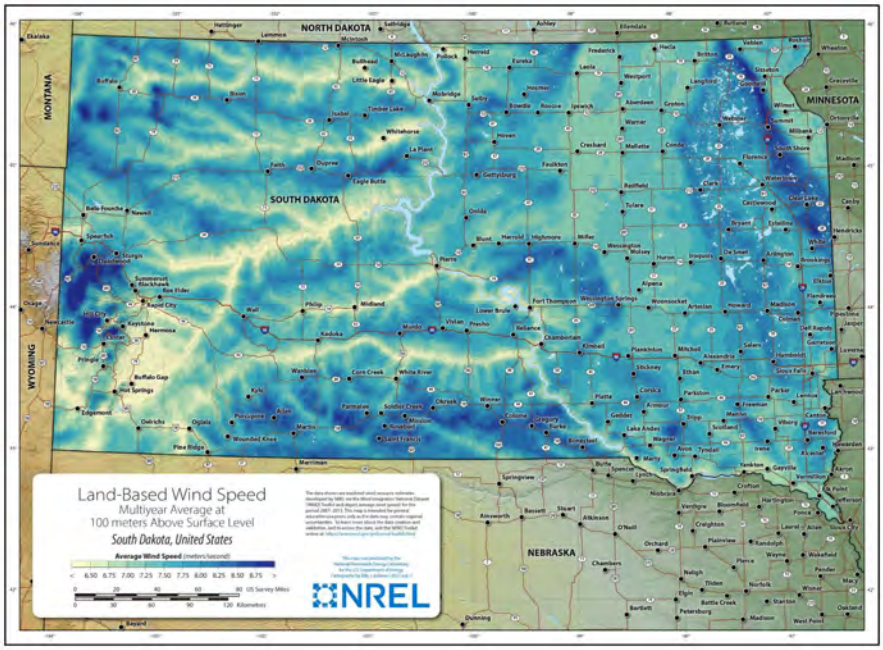


**Figure 4:** *South Dakota Solar Resource Map*[30]

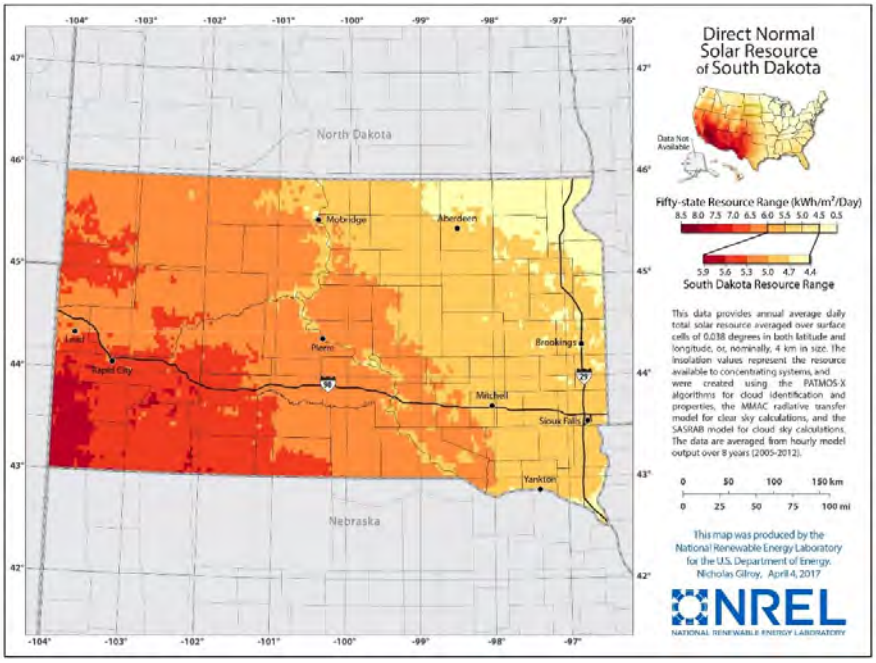



**Figure 5:** *The Tribes of South Dakota - 9 Native American Reservations*[31]


*Economic, Demographic, and Political Context*

South Dakota's economic base is diverse, with agriculture, mining, and tourism serving as key drivers. Agriculture dominates, accounting for nearly 90% of land use and generating approximately $32.1 billion annually.[32] The state's farmland, concentrated in the east, supports crops like corn and soybeans, which also contribute to renewable energy through ethanol production.[33] Mining, particularly in the Black Hills region, is one of the fastest-growing

industries, driven by demand for lithium and other critical minerals.[34] Tourism, bolstered by attractions like Mount Rushmore and the Badlands, contributes $7.9 billion annually to the state's economy.[35]

South Dakota's political landscape is predominantly conservative, with Republicans holding a strong majority in both state legislative chambers and the governorship.[36] The state has consistently voted Republican in presidential elections since 1964.[37] Renewable energy policy reflects this conservative ethos, emphasizing voluntary goals over mandates. Recent policy initiatives include support for nuclear energy and ethanol production, reflecting a preference for energy reliability and economic autonomy.[38]

Demographic trends also shape South Dakota's energy landscape. The state's population, though small at approximately 900,000, has grown by 8.9% over the past decade.[39] This growth is accompanied by increasing racial and ethnic diversity, particularly among Black, Hispanic, and multiracial residents. However, poverty remains a challenge, with six of the nation's ten most impoverished counties located within South Dakota, largely aligning with Native American reservations.[40]

*Land Use and Public Lands*

Public lands in South Dakota play a crucial role in shaping the state's energy and economic strategies. These lands, managed by the Bureau of Land Management (BLM), Native American tribes, and the South Dakota Office of School and Public Lands, support a range of activities, including agriculture, grazing, mining, and renewable energy development. Table 1, below, quantifies the extent and primary uses of these lands:

**Table 1**: Public Land Use in South Dakota by Ownership Type

| Land Type | Area (Acres) | Location | Primary Uses |
|---|---|---|---|
| **Bureau of Land Management (BLM) Lands** [41] [42] | 274,000 (surface) | West of Missouri River, 13 counties | Grazing; energy development; mineral extraction, recreation |
| **Tribal Lands and Reservations** [43] [44] | Tribal land is approximately 6 million acres and the nine reservations in South Dakota cover about 5 million of those acres | Scattered, primarily western South Dakota | Residential, cultural, energy development |

| | | | |
|---|---|---|---|
| | (Cheyenne River; Crow Creek; Flandreau Santee; Lower Brule; Pine Ridge; Rosebud; Sisseton-Wahpeton; Standing Rock; Yankton) | | |
| **South Dakota School and Public Lands**[45] [46] | 750,000 | Western South Dakota | Grazing, agriculture, income generation |

BLM oversees 274,000 surface acres and 1.7 million subsurface acres, much of which is concentrated in the western part of the state. These lands are used for grazing, recreation, and mineral extraction, but they also offer significant potential for renewable energy development.[47] Tribal lands, which cover large portions of western South Dakota, represent another frontier for renewable energy.[48] Projects like the Oceti Sakowin Power Authority's wind farms highlight the untapped potential of these territories, although challenges related to financing, federal jurisdictions and regulations, and interconnection persist.[49] School trust lands, granted to South Dakota by the federal government, are another important resource. These lands generate revenue through oil, gas, and mineral leases, contributing approximately $12 million annually to school districts.[50]

## EXPLICIT CLIMATE POLICY

South Dakota currently lacks key regulatory mechanisms, such as net metering policies and Renewable Portfolio Standards (RPS), which are commonly used in other states to support renewable energy deployment. However, this was not always the case. In 2008, the state implemented the Renewable, Recycled, and Conserved Energy Objective (RRCEO),[51] a voluntary RPS aimed at encouraging utilities to generate at least 10% of their retail electricity from renewable sources by 2015.[52] The initiative received support from utilities such as Xcel Energy and Otter Tail Power, along with advocacy groups that highlighted the potential for rural economic development and job creation through investments in renewable infrastructure. Despite opposition from fossil fuel interests and industrial groups concerned about increased energy costs, South Dakota met and even surpassed the 10% target, largely through wind energy expansion (Table 2).[53] This achievement demonstrates the state's renewable energy potential, though it relied heavily on voluntary commitments rather than regulatory mandates.

**Table 2:** Renewable Generation and Compliance with 2015 RRCEO Objective[54]

| 2015 Renewable, Recycled, and Conserved Energy Objective | | | | |
|---|---|---|---|---|
| | SD Retail Sales[1] (MWh) | Renewable Energy[2] (MWh) | Conserved Energy (MWh) | RRCE[3] (%) |
| MidAmerican Energy Co. | 216,617 | 73,309 | 598 | 34.12 |
| Rushmore Electric Cooperative Inc. | 937,743 | 198,122 | 0 | 21.13 |
| Missouri River Energy Services | 639,532 | 63,954 | 7,505 | 11.17 |
| Otter Tail Power Co. | 422,840 | 42,285 | 4,239 | 11.00 |
| Xcel Energy | 2,007,761 | 200,777 | 0 | 10.00 |
| Heartland Consumers Power District | 202,970 | 20,297 | 0 | 10.00 |
| East River Electric Power Coop. and Members | 2,594,034 | 259,412 | 0 | 10.00 |
| NorthWestern Energy | 1,544,846 | 0 | 3,241 | 0.21 |
| Black Hills Energy | 1,676,032 | 0 | 3,140 | 0.19 |
| Montana-Dakota Utilities Co. | 147,119 | 0 | 0 | 0.00 |
| Grand Electric Cooperative, Inc. | 147,533 | 0 | 0 | 0.00 |
| Rosebud Electric Cooperative, Inc. | 24,218 | 0 | 0 | 0.00 |

1) 2015 SD baseline retail sales after deducting hydro generation with an in-service date prior to July 1, 2008 (SDCL 49-34A-103)

2) Only accounts for renewable energy that the utility retired Renewable Energy Certificates for compliance with SD's RRCEO

3) Renewable, Recycled, and Conserved Energy as a percent of 2015 SD baseline retail sales

While many utility providers successfully met the RRCEO's goals by 2015, others faced significant challenges. Table 3 below outlines all challenges reported by utilities in meeting the RRCEO standard. Notable challenges include transmission constraints, intermittency, and political uncertainty following the expiration of the voluntary RPS.[55] Discussions about extending or formalizing the RRCEO into a mandatory RPS failed to gain legislative momentum, leaving the state without a coordinated policy framework to support renewable energy development beyond 2015.

**Table 3:** RRCEO Compliance Challenges from Retail Providers[56]

| Challenges Cited | Explanation |
|---|---|
| Transmission | Limited existing capacity on transmission systems hinders the integration of new renewable energy projects, requiring costly infrastructure upgrades to accommodate growth. |
| Physical Location | The effectiveness of renewable resources is significantly influenced by the geographic location of the retail provider's system, impacting the quality and feasibility of renewable energy generation. |
| Intermittency | Renewable energy sources like wind and solar depend on resource availability (wind and sunlight), necessitating flexible backup generation to mitigate intermittency. This adds integration costs, posing economic challenges. |
| Siting | Environmental studies and permitting processes for wind farms and |

| | |
|---|---|
| | transmission infrastructure are both time-consuming and expensive, slowing project implementation. |
| Cost | Low natural gas prices create economic competition for renewables, even with federal incentives such as the Production Tax Credit (PTC). Many renewable projects struggle to achieve cost competitiveness. |
| Policy Uncertainty | Ambiguity on future policy, such as the implications of the EPA's Clean Power Plan, discourages investment in renewable projects due to unclear regulatory landscapes. |
| Awareness | Many utility customers lack knowledge about available energy efficiency options, limiting the adoption of cost-saving measures and renewable-friendly practices. |

Additionally, South Dakota's diverse utility structure makes it difficult to implement climate policies that have uniform effects across electric providers, as vertically integrated utilities, energy cooperatives, and wholesale market participants each operate under distinct regulatory frameworks and financial models. Vertically integrated utilities, regulated by the South Dakota Public Utilities Commission (PUC), prioritize affordability and reliability over innovation.[57] This regulatory approach often limits investments in renewable energy. By 2015, the three vertically integrated utilities in the state (Black Hills Energy, NorthWestern Energy, and Montana-Dakota Utilities Co.) were among the five utilities that failed to meet the RRCEO's 10% objective, as illustrated in Table 2. This contrast highlights the structural limitations faced by these utilities compared to their more flexible counterparts.

Energy cooperatives are another common utility structure in South Dakota, over which the PUC has limited authority. During RRCEO's tenure, energy co-ops exhibited a broad range of outcomes. Some achieved among the highest percentages of renewable energy in their generation mix by 2015, while others failed to develop any renewable capacity. These discrepancies reflect variations in governance priorities, financial capabilities, and local decision-making. Table 2 shows the disparities in renewable energy adoption across utility cooperatives, revealing the uneven progress made within this sector.

These utility structures differ sharply from fully deregulated electricity markets, such as those in Texas, where renewable development has flourished even in the absence of an RPS. Texas, managed by ERCOT, leads the nation in wind power, accounting for 28% of all US-sourced wind energy in 2023, largely due to its competitive market structure, infrastructure investments, and abundant wind resources. In contrast, South Dakota's utilities operate predominantly under vertically integrated and cooperative models. While vertically integrated utilities and co-ops are physically connected to the wholesale markets of SPP and MISO, they do not fully participate in market-based retail competition. The PUC sets rates for vertically integrated utilities, ensuring

cost recovery and a regulated rate of return, while energy cooperatives provide power at the most affordable cost for their member-owners. These differences in revenue structures and utility models further impact renewable energy adoption, as vertically integrated utilities and co-ops prioritize cost stability over innovation and renewable development. Additionally, many rural cooperatives in the state rely on long-term federal hydropower agreements with the Western Area Power Administration (WAPA), further limiting market-based incentives for renewable energy deployment.[58] These differences highlight the systemic challenges of promoting renewable energy in South Dakota's utility landscape, where incentives and market conditions are less uniform than in fully deregulated states like Texas.

Since the expiration of the RRCEO, renewable energy growth in South Dakota has slowed. While the solar industry grew nationally by 23.5% from 2019 to 2020, South Dakota's growth rate lagged at 14.3%[59] despite its position as the state with the 5th most rural, utility-scale photovoltaics potential.[60, 61] Studies suggest that adopting supportive policies, such as net metering and reduced interconnection costs, could accelerate solar deployment, but such measures are unlikely under Governor Kristi Noem's market-based energy approach. The state's reliance on federal tax incentives underscores its limited policy support for renewables, placing a greater burden on developers to navigate financing and interconnection challenges.

Governor Noem's broader energy strategy includes her participation in the Governor's Coalition for Energy Choice, a growing group of Republican governors advocating for market-driven energy policies. The coalition's emphasis on minimizing regulatory barriers and eliminating expensive energy mandates aligns with South Dakota's preference for affordability and regulatory independence. However, critics argue that this approach lacks the urgency needed to transition away from fossil fuels. This concern is exemplified by South Dakota's decision to opt out of the federal Home Energy Rebates Program, a move that the U.S. Department of Energy estimated could have reduced carbon dioxide emissions by 42 million metric tons over 30 years and saved South Dakotan households approximately $9,027 each.[62] While this decision reflects the state's commitment to market-based solutions, it highlights the trade-offs inherent in prioritizing affordability over long-term renewable energy growth. As South Dakota navigates these tensions, the state's energy future will hinge on balancing immediate economic concerns with the broader imperative to foster a sustainable and resilient energy system.

## TAXATION OF RENEWABLES

Property taxation of wind and solar projects in South Dakota differs from other real and personal property taxation. Instead of an ad valorem structure of valuation and taxation, wind and solar projects pay alternative taxes based on both the nameplate capacity of the project and the energy production at the facility.[63] The South Dakota codified law 10-35-16 defines a Wind farm as, "all real or personal property used or constructed for the purpose of producing electricity for

commercial purposes utilizing the wind as an energy source and with a nameplate capacity of at least five thousand kilowatts. The term includes the collector system."[64] Wind farms greater than 5 Megawatts (MW) built after July 1st, 2007, pay a nameplate capacity tax of $3.00 per kilowatt. In addition to the nameplate capacity tax, wind farms built between July 1, 2007, and March 30, 2015, pay a production tax equal to $0.00065 per kilowatt hour of electricity produced by the wind farm. Wind farms built on or after March 31, 2015, also pay a production tax, but the rate is $0.00045 per kilowatt hour of electricity produced.[65] A 20-year projection of property tax revenue from a 100 MW wind farm with an annual capacity factor of 45% is provided in Appendix 1.

South Dakota Codified Law 10-35-16 defines a solar facility—similar to a wind farm—as "all real or personal property used or constructed for the purpose of producing electricity for commercial purposes utilizing solar radiation as an energy source and with a nameplate capacity of at least five thousand kilowatts." The term includes the collector system."[66] A 5 MW or larger solar facility pays the same nameplate capacity tax of $3.00 per kilowatt that a wind farm does. Solar facilities also pay a production tax equal to $0.00090 per kilowatt hour of electricity produced by the solar facility.[67] While this is twice the rate of a wind farm, it results in a similar annual payment given that the typical solar capacity factor in South Dakota is around half that of a typical wind capacity factor in the state. A 20-year projection of property tax revenue from a 100 MW solar facility with an annual capacity factor of 22% is provided in Appendix 2.
Taxes from renewable energy facilities (both wind and solar) are due to the South Dakota Department of Revenue on February 1st of each year. 100% of the nameplate capacity tax is distributed to the Renewable Facility Tax Fund (RFTF). 20% of the production tax is also distributed to the RFTF while the remaining 80% is allocated to the State General Fund (SGF).[68] The state then remits the Renewable Facility Tax Fund to the counties by May 1. The taxes are distributed by the county auditor with 50% going to the school district(s), 35% going to the county, and 15% going to organized township(s).[69] Table 4 below shows the distribution of funds from a 100 MW Wind Energy Facility. A similarly sized solar facility would generate different production taxes, as shown by comparing Appendix 1 and 2, but would follow the same logic for the distribution of funds to different entities.

**Table 4:** Distribution of funds from a 100 MW Wind Farm with 45% capacity factor

| | Nameplate Capacity Tax | Production tax | Total |
|---|---|---|---|
| **State General Fund** | $0 | $141,912 | $141,912 |
| **School District** | $150,000 | $17,739 | $167,739 |
| **County** | $105,000 | $12,417 | $117,417 |
| **Township** | $45,000 | $5,322 | $50,322 |
| **Total** | $300,000 | $177,390 | $477,390 |

## PUBLIC UTILITIES COMMISSION POLICY

The South Dakota Public Utilities Commission (PUC) is responsible for overseeing and regulating public utilities. It also has the authority to implement state legislative goals related to renewable energy.

The Public Utilities Commission (PUC) of South Dakota is made up of three elected commissioners, each of which serve for six years. Current commissioners are Kristie Fiegen, Gary Hanson, and Chris Nelson. Political parties nominate their top candidates to run for the PUC and then voters decide who will fill the seat. There are no bipartisan requirements, so all current commissioners are affiliated with the Republican Party. However, there are candidate requirements pertaining to age, residence, voter status, and conflicts of interest.[70]

*PUC Employment*

South Dakota has one of the lowest numbers of full-time employees per million residents. In well-staffed states, the staff-to-resident ratio can range from 5 to 30 staff members per million residents, whereas South Dakota has approximately 1 to 2 full-time staff members per million residents. Only two states, Vermont and Utah, have lower staff-to-resident ratios.[71]

*Mission Statement*

Mission statements are used to guide both decision-making and the goals of a PUC. Typical missions of PUCs include factors such as providing reasonable rates and reliable electricity. Non-rate considerations in mission statements that might promote renewable energy include factors such as: Environmental Justice, Equity, Climate Goals, Economic Development Impacts, and Public Health.[72] Currently South Dakota has none of these included in their mission statement which can be read below:

> "*The South Dakota Public Utilities Commission will serve and protect South Dakota consumers by ensuring safe, reliable and high quality utility services. The commission will exercise its authority and influence to ensure that residential and business consumers have access to utility services at fair and reasonable rates. The commission will be proactive and solutions-oriented in striving to maximize consumer utility value and education while working to enhance the economic and environmental well-being for citizens of the state of South Dakota.*"

*Consumer Advocates*

Public utilities typically have consumer advocates who represent the interests of consumers. They bring consumer complaints to the commission, offer testimonies, and serve as the face of public interest. Consumer advocates are particularly important because utilities have significantly more resources to further utility interests. In South Dakota, public interest is taken on by the Consumer Affairs Staff. The consumer affairs office has three employees: one consumer affairs manager (Deb Gregg) and two consumer representatives (Vicky Burns and Jason Schuchard).[73]

*PUC Approach Towards Renewables*

The South Dakota PUC has taken a hands-off approach towards renewables. While they do have siting authority, they do not appear to have conducted studies into the topic of renewable energy. The current administration appears to view solar and wind energy as an economic opportunity, especially as an export for the state. However, the administration also does not appear to assert themselves as environmentalists. Recently re-elected Commissioner, Kristie Fiegen, gave an interview in which she expressed her personal belief that the energy transition is happening too quickly.[74]

## SITING AUTHORITY

The South Dakota PUC primarily influences renewable energy development in the state through its siting authority over wind and solar projects that are 100 megawatts (MW) or larger.[75] Projects smaller than 100 MW are not regulated by the commission. The PUC also has siting authority over energy conversion (i.e., traditional power generation), AC/DC conversion, and energy transmission facilities. Similar to wind and solar projects, the PUC has siting authority for traditional generation facilities 100 MW or larger, but not those smaller than 100 MW. South Dakota statute 49-41B-2.1 defines a transmission facility as a transmission line with voltage above 115 kilovolts (kV).[76] Given the state's interest in providing reliable electric service to all citizens, the siting of facilities is done at the state level and not the local level. For example, South Dakota statute 49-41B-28 states that transmission facilities approved by the PUC supersede local land uses, zonings, ordinances, and regulations. If the local government wants to enforce their land-use regulations, they must go through the PUC.[77]

The PUC's primary responsibility is to ensure the siting of facilities will produce minimal adverse effects on the environment and the citizens during construction and operations.[78] This is done through an objective process where the commission examines applications based on definitions, standards and references specified in South Dakota Codified Laws and Administrative Rules. For example, South Dakota statute 49-41B-4.2 provides the PUC with

criteria for approving proposed trans state transmission lines.[79] The PUC may grant the permit, deny the permit, or grant the permit with terms, conditions or modifications of the construction, operation, or maintenance. For wind and solar projects, the decision must be rendered 9 months after the PUC received the application in accordance with South Dakota statute 49-41B-25.[80] For traditional power generation and transmission facilities, the PUC has 12 months to render a decision as stated in South Dakota statute 49-41B-24.[81]

The commission cannot change the location of a project. The decision the PUC renders can be appealed to circuit courts all the way up to the South Dakota Supreme Court. It is also worth noting that the circuit court system is responsible for the eminent domain process and PUC does not have a role in such matters.[82] However, South Dakota statute 49-41B-4.4 places limitations on utilities owning farmland in eminent domain acquisitions and establishes a 5-year period to sell. Failure to divest results in the farmland being sold at public auction.[83] The PUC lists 4 responsibilities required by each applicant. They are shown below in Table 5.

**Table 5:** Responsibilities of applicants to PUC

| |
|---|
| 1. Will comply with all applicable laws and rules |
| 2. Will not pose a threat of serious injury to the environment nor to the social or economic condition of inhabitants or expected inhabitants in the siting area |
| 3. Will not substantially impair the health, safety, or welfare of the inhabitants |
| 4. Will not unduly interfere with the orderly development of the region with due consideration having been given to the views of the governing bodies of affected local units of government. |

The PUC decision process allows for public involvement. Documents are made available on the electronic docket on the commission's website. As required by South Dakota statute 49-41B-16, the PUC holds a public input meeting at a location near the proposed facility site where the applicant describes the project, and the public is allowed to ask questions and offer comments. The meeting notice must be published three times in the local newspaper: 30, 20, and 2 days before the meeting convenes.[84] Comments are also able to be submitted to the PUC for consideration. Lastly, individuals are able to formally intervene in a case if they have a direct interest.[85] According to the PUC, "Intervention is appropriate for people who intend to actively participate in the case through legal motions, discovery (requests for facts or documents), the written preparation and presentation of actual evidence, and in-person participation in a formal hearing."[86]

For solar and wind projects less than 100 MW, local governments have siting authority. For wind projects greater than 5 MW, the company must give notice to the PUC before construction may

proceed, but no permit must be obtained in accordance with 49-41B-25.1.[87] In addition, wind energy facilities are required to install an Aircraft Detection Lighting System (ADLS) in compliance with Federal Aviation Administration (FAA) regulations, as mandated by South Dakota Codified Law § 49-41B-25.2.[88] This rule, which passed the South Dakota legislature in 2019, is in line with state requirements of other major wind energy producing states where proposals often garner bipartisan support and are endorsed by developers and residents alike.[89] Lastly, in accordance with South Dakota statute 49-41B-27, facilities may be updated and expanded by utilities if they have a permit, but if it is 4 years after the permit is issued, the utility must check with the PUC to assert that the facility is still in compliance.[90]

## INFRASTRUCTURE INVESTMENT

South Dakota's transmission infrastructure for renewable energy lags behind neighboring states, limiting its ability to support a robust clean energy network. In 2023, wind curtailments within the Southwest Power Pool (SPP), one of the two Regional Transmission Organizations (RTOs) that service South Dakota, averaged 1,097 MW per hour across its entire service area.[91] This significant curtailment highlights the growing gap between wind generation capacity and regional transmission buildout, which has constrained South Dakota's ability to interconnect and efficiently dispatch renewable electricity. Compounding these challenges is the state's location on the seam between two RTOs: SPP and the Midcontinent Independent System Operator (MISO). With more than 6,000 MW of interties between these two systems,[92] operational and regulatory barriers arise, hindering South Dakota's ability to export electricity seamlessly across regions. These issues along the seam highlight the need for coordinated transmission planning and expansion to unlock the state's full renewable energy potential.

Recognizing these barriers, MISO and SPP launched the Joint Targeted Interconnection Queue (JTIQ) Study in late 2020, increasing collaborative efforts to identify projects that address interconnection challenges near their shared boundaries.[93] This coordinated effort has already produced tangible benefits, creating a framework for advancing utility-scale renewable energy projects while compensating for the absence of state-specific infrastructure initiatives. As a result, both RTOs have proposed transmission upgrades informed by the JTIQ study.

SPP, which serves as the primary transmission operator for much of South Dakota, has made significant progress in planning new infrastructure to address these limitations. In October 2024, SPP stakeholders approved the largest transmission investment portfolio in its history[94] as part of its 2024 Integrated Transmission Planning (ITP) Assessment Report.[95] The plan, which was subsequently approved by SPP's board of directors, includes a portfolio of 89 projects, totaling 2,277 miles of new transmission lines and 443 miles of transmission rebuilds.[96] These investments aim to address pressing reliability needs, accommodate load growth, integrate more

renewable energy, and strengthen resilience against extreme weather events (Fig. 5).[97] Studies suggest that the benefits of these projects will outweigh their costs by at least an eight-to-one ratio[98], with anticipated improvements in wholesale electricity costs and economic efficiency across the region. This portfolio holds considerable potential for advancing renewable energy integration in South Dakota.

**Figure 6:** Anticipated Impact of SPP Transmission Investment by State- Future 1[99]

| Future 1: Reference Case | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| State | Present Value of 40-yr Benefits for the 2028-2067 Period (in 2024 $M) | | | | | | | | Total Benefits | Present Value of 40-yr ATRRs (in 2024 $M) | Established Benefit/ Cost Ratio |
| | APC Savings | Avoided or Delayed Reliability Projects | Capacity Savings from Reduced On-peak Losses | Assumed Benefit of Mandated Reliability Projects | Benefit from Meeting Public Policy Goals | Mitigation of Trans-mission Outage Costs | Increased Wheeling Through and Out Revenues | Marginal Energy Losses Benefits | | | |
| Arkansas | $462 | $2 | $0 | $169 | $0 | $143 | $318 | $115 | $1,210 | $630 | 1.9 |
| Colorado | $92 | $0 | $0 | $2 | $0 | $1 | $1 | $1 | $97 | $2 | 41.6 |
| Iowa | $9,629 | $8 | $14 | $160 | $0 | $57 | $59 | $101 | $10,028 | $187 | 53.7 |
| Kansas | $1,341 | $5 | $2 | $548 | $0 | $444 | $661 | $166 | $3,167 | $1,941 | 1.6 |
| Louisiana | $195 | $1 | ($0) | $61 | $0 | $58 | $149 | $45 | $509 | $275 | 1.9 |
| Minnesota | $2,280 | $2 | $3 | $38 | $0 | $14 | $14 | $24 | $2,375 | $44 | 53.8 |
| Missouri | $1,002 | $3 | $7 | $368 | $0 | $255 | $340 | $555 | $2,530 | $1,290 | 2.0 |
| Montana | $3,105 | $3 | $4 | $52 | $0 | $19 | $19 | $33 | $3,234 | $60 | 53.8 |
| Oklahoma | $2,073 | $8 | ($1) | $822 | $0 | $685 | $1,238 | $806 | $5,631 | $2,633 | 2.1 |
| Nebraska | $2,070 | $5 | $43 | $562 | $0 | $403 | $567 | $330 | $3,980 | $1,453 | 2.7 |
| New Mexico | $1,781 | $2 | $24 | $212 | $0 | $176 | $246 | $236 | $2,678 | $598 | 4.5 |
| North Dakota | $41,310 | $35 | $58 | $685 | $0 | $246 | $254 | $433 | $43,022 | $800 | 53.8 |
| South Dakota | $20,422 | $17 | $29 | $339 | $0 | $122 | $126 | $214 | $21,269 | $396 | 53.7 |
| Texas | $2,921 | $4 | $34 | $394 | $0 | $339 | $603 | $407 | $4,700 | $1,303 | 3.6 |
| Wyoming | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | - | - |
| **TOTAL** | **$88,685** | **$93** | **$218** | **$4,412** | **$0** | **$2,962** | **$4,596** | **$3,465** | **$104,430** | **$11,612** | **9.0** |

*Table 7.11: Future 1 State - Estimated 40-year PV of Benefit Metrics and Costs*

Future 1 reference case scenario is modeled under more conservative assumptions of demand growth, technology adoption, and fossil fuel retirements

**Figure 7:** Anticipated Impact of SPP Transmission Investment by State- Future 2[100]

| Future 2: Emerging Technologies | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Present Value of 40-yr Benefits for the 2028-2067 Period (in 2024 $M) | | | | | | | | | | |
| Zone | APC Savings | Avoided or Delayed Reliability Projects | Capacity Savings from Reduced On-peak Losses | Assumed Benefit of Mandated Reliability Projects | Benefit from Meeting Public Policy Goals | Mitigation of Trans-mission Outage Costs | Increased Wheeling Through and Out Revenues | Marginal Energy Losses Benefits | Total Benefits | Present Value of 40-yr ATRRs (in 2024 $M) | Established Benefit/ Cost Ratio |
| AEPW | $1,332.92 | $6 | ($1.02) | $467.6 | $0 | $479.39 | $1,143 | $1,204.68 | $4,632 | $2,107 | **2.2** |
| EMDE | $559.21 | $1 | $3.90 | $90.1 | $0 | $54.93 | $88 | $126.87 | $924 | $366 | **2.5** |
| GMO | $120.46 | $1 | $2.48 | $126.4 | $0 | $93.83 | $115 | $97.03 | $557 | $392 | **1.4** |
| GRDA | $965.96 | $1 | $1.32 | $109.7 | $0 | $102.66 | $151 | $194.41 | $1,526 | $229 | **6.7** |
| KACY | ($143.70) | $0 | $0.00 | $31.2 | $0 | $25.80 | $9 | $36.18 | ($41) | $92 | **(0.4)** |
| KCPL | ($65.32) | $2 | $2.37 | $166.0 | $0 | $165.51 | $181 | $212.00 | $664 | $752 | **0.9** |
| LES | $133.62 | $0 | $2.21 | $46.5 | $0 | $34.53 | $63 | $334.43 | $615 | $151 | **4.1** |
| MIDW | $34.46 | $0 | ($0.19) | $27.8 | $0 | $21.01 | $21 | ($47.80) | $56 | $77 | **0.7** |
| NPPD | $170.80 | $2 | $31.90 | $299.2 | $0 | $194.35 | $386 | ($257.83) | $826 | $703 | **1.2** |
| OKGE | $666.10 | $4 | ($3.45) | $470.9 | $0 | $382.86 | $553 | $793.17 | $2,866 | $1,393 | **2.1** |
| OPPD | $799.94 | $2 | $7.86 | $202.9 | $0 | $200.73 | $114 | $104.10 | $1,431 | $584 | **2.5** |
| SPRM | $418.70 | $0 | ($1.20) | $52.8 | $0 | $29.92 | $28 | ($22.95) | $506 | $136 | **3.7** |
| SPS | $3,749.44 | $3 | $59.42 | $461.5 | $0 | $407.85 | $531 | $922.67 | $6,135 | $1,298 | **4.7** |
| SUNC | $2.74 | $1 | ($0.43) | $104.3 | $0 | $62.53 | $82 | ($130.53) | $121 | $229 | **0.5** |
| SWPA | $160.24 | $0 | $1.34 | $52.1 | $0 | $34.53 | $50 | $22.71 | $321 | $93 | **3.5** |
| UMZ | $85,543.43 | $65 | $109.80 | $1,288.6 | $0 | $499.49 | $478 | $317.77 | $88,303 | $1,504 | **58.7** |
| WERE | $1,336.81 | $3 | $1.31 | $286.6 | $0 | $277.24 | $442 | $102.37 | $2,449 | $1,137 | **2.2** |
| WFEC | ($129.22) | $1 | $0.29 | $127.5 | $0 | $127.76 | $160 | $92.22 | $380 | $369 | **1.0** |
| **Total** | **$95,657** | **$92.7** | **$218** | **$4,412** | **$0** | **$3,195** | **$4,596** | **$4,101** | **$112,271** | **$11,612** | **9.7** |

*Table 7.12: Future 2 Zonal - Estimated 40-year PV of Benefit Metrics and Costs*

Future 2 is characterized by increased demand growth due to EV adoption, more aggressive fossil fuel retirements, and increased electrification.

MISO, which serves a smaller portion of northeastern South Dakota, is also pursuing ambitious transmission upgrades. MISO's Tranche 2.1 portfolio, part of its Long-Range Transmission Planning (LRTP) framework, involves $21.8 billion in proposed investments.[101] These upgrades are expected to deliver widespread benefits, including job creation and significant economic growth, with projections estimating between 22,000 and 65,000 direct jobs and an economic output of $4 billion to $24 billion.[102] The planned transmission upgrades aim to alleviate long-standing bottlenecks along the MISO-SPP seam, where interconnection delays have hindered renewable development. MISO's Board of Directors unanimously approved Tranche 2.1 in December 2024, enhancing the region's transmission infrastructure to support greater reliability, decarbonization, and other key benefits.

**Figure 8:** MISO Proposed Tranche of Projects[103]

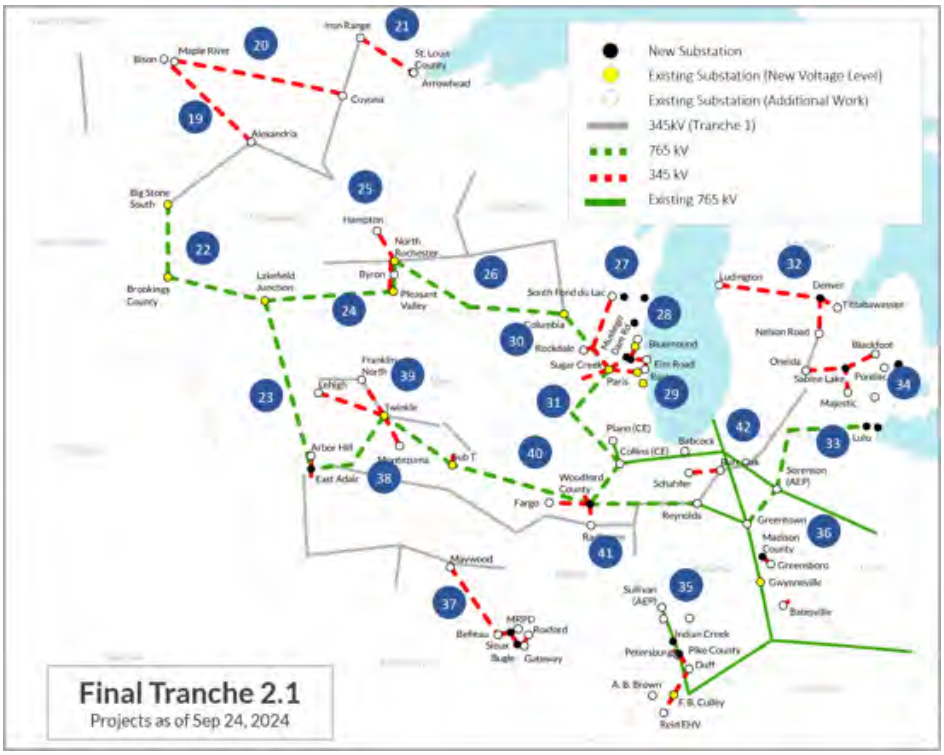



**Figure 9:** Forecasted Impact of MISO Transmission Investment by State[104]

| | Tranche 2.1 Investment ($Mns) | Direct Local Jobs | | Total Local Jobs | | Local Investment/Total Economic Output ($Mns) | |
|---|---|---|---|---|---|---|---|
| ***Central*** | | *Low Estimate* | *High Estimate* | *Low Estimate* | *High Estimate* | *Low Estimate* | *High Estimate* |
| MO | $872 | 872 | 2,616 | 1,744 | 5,231 | $ 174 | $ 959 |
| IL | $2,886 | 2,886 | 8,659 | 5,772 | 17,317 | $ 577 | $ 3,175 |
| IN | $2,378 | 2,378 | 7,135 | 4,757 | 14,270 | $ 476 | $ 2,616 |
| KY | $77 | 77 | 230 | 153 | 459 | $ 15 | $ 84 |
| ***East*** | | | | | | | |
| MI | $2,672 | 2,672 | 8,015 | 5,344 | 16,031 | $ 534 | $ 2,939 |
| ***West*** | | | | | | | |
| IA | $3,606 | 3,606 | 10,817 | 7,212 | 21,635 | $ 721 | $ 3,966 |
| MN | $4,342 | 4,342 | 13,026 | 8,684 | 26,051 | $ 868 | $ 4,776 |
| ND | $188 | 188 | 564 | 376 | 1,129 | $ 38 | $ 207 |
| SD | $724 | 724 | 2,171 | 1,447 | 4,341 | $ 145 | $ 796 |
| WI | $4,086 | 4,086 | 12,257 | 8,171 | 24,514 | $ 817 | $ 4,494 |
| **Total** | $21,830 | 21,830 | 65,489 | 43,659 | 130,978 | $ 4,366 | $ 24,013 |

Despite these potential benefits, MISO's long-range plan has faced criticism. David Patton, MISO's independent market monitor and economist, has raised concerns that the grid operator is overstating the benefits of the proposed power lines. Patton has estimated that the portfolio could cost each Midwest household approximately $2,600 and has urged MISO's system planning committee to delay approval for further evaluation.[105] North Dakota Public Service Commissioner Julie Fedorchak has echoed these concerns, advocating for greater scrutiny of the

project's costs and benefits. However, these criticisms have been countered by MISO's leadership, with Jennifer Curran, MISO's senior vice president of planning and operations, stating that Patton's concerns have already been addressed and emphasizing that the market monitor is just one voice among many stakeholders.

Although MISO's footprint in South Dakota is limited, the outcome of its transmission planning process could set important precedents for renewable energy development across the region. In South Dakota, the impact of MISO's upgrades will be minimal compared to the broader service provided by SPP, but it highlights the complexities of coordinating grid investments across multiple jurisdictions. For South Dakota, where utility-scale solar remains underdeveloped, the primary focus of these transmission projects lies in supporting wind energy expansion, which continues to dominate the state's renewable portfolio. Ensuring alignment between regional transmission planning efforts and South Dakota's renewable energy goals will be critical to overcoming these barriers and unlocking the state's clean energy potential.

## PUBLIC AND TRIBAL LANDS

*Current Policies and Projects: Federal Government*

The Bureau of Land Management (BLM) facilitates renewable energy development by reducing acreage rents and capacity fees, streamlining applications, and prioritizing areas with high renewable energy potential. To support renewable energy development, the BLM issues rights-of-way (ROW) grants, which provide the legal framework for siting renewable energy projects on federal lands, along with leases for solar, wind, and geothermal projects, thereby expediting the permitting process.[106]

The BLM has approved a Resource Management Plan (RMP) for South Dakota, which lays out a framework for expanding renewable energy, particularly wind energy development.[107] Approximately 19,903 acres—about 7% of the BLM's surface estate in western South Dakota—are designated as "Potential Wind Development Areas." Despite these measures, South Dakota has yet to see active wind or solar projects on BLM-managed lands. Conversely, 107,147 acres are categorized as ROW avoidance or exclusion zones, where renewable projects are prohibited.[108] Notably, the South Dakota RMP, approved in 2015, has not faced significant public critique, possibly due to its age and the absence of active renewable energy projects on BLM lands. The South Dakota Wildlife Society provided some commentary during the plan's draft phase, emphasizing environmental concerns, but this feedback did not generate widespread opposition.[109] In contrast, the North Dakota RMP, updated in 2024, has elicited substantial pushback from the current governor and state government, underscoring the contentious nature of resource management in more active development contexts.

*State Policies on Leasing Public Lands for Renewable*

The South Dakota School & Public Lands oversees more than 760,000 acres of land for grazing and agriculture, in addition to managing over 5.5 million acres of mineral rights.[110] These lands, known as "trust lands," were granted to South Dakota when it became a state in 1889, and the income generated from leasing them supports the state's schools, universities, and other endowed institutions.[111] In 2023 alone, the state distributed over $10 million to K-12 education and more than $6 million to other institutions. Most of these trust lands are located in Western South Dakota, with 98% of them being grassland and the remaining 2% being used for cropland.[112] Leases are issued through public auctions for five-year terms, with a renewable option for another five years, and the state also issues seismic permits on state-owned mineral acres.[113]

South Dakota's state policies on leasing public lands for renewable energy development remain underdeveloped. While wind energy development has made some progress, with 30,000 acres leased for wind easements generating $175,000 in revenue by FY2023, solar development remains slow due to a lack of state incentives and logistical challenges.[114] The School & Public Lands office has expressed interest in supporting further renewable energy projects but has yet to establish a formalized policy framework to guide such developments.[115] [116] As a result, there is no clear state policy that actively encourages the leasing of public lands for wind or solar projects. This absence of clear guidance and the potential for long permitting timelines and conflicts with other state priorities—such as maximizing revenue from mineral rights—creates barriers for renewable energy projects on public lands.[117] [118] [119]

*Tribal Energy and the Oceti Sakowin Power Authority*

One of the most significant developments in South Dakota's renewable energy landscape is the Oceti Sakowin Power Authority (OSPA). On tribal lands, renewable energy development operates within a distinct regulatory framework. Federal trusteeship, mixed land ownership (including trust, fee simple, and fractionated lands), and regulatory challenges can slow project timelines.[120]

Federal funding has enhanced tribal renewable energy development, with a $135.6 million grant supporting infrastructure projects like solar installations and wind energy projects. Initiatives like the Oceti Sakowin Power Authority (OSPA), a coalition of six Sioux tribes, demonstrate progress toward energy sovereignty. OSPA's proposed 1,000 MW wind projects and the Lookout Solar Park Project highlight the economic and environmental benefits of renewable energy. However, challenges persist, such as regulatory hurdles and limited state incentives.

Other tribes, including the Cheyenne River Sioux, Oglala Sioux, Standing Rock Sioux, and Rosebud Sioux, have also pursued renewable energy projects, with a focus on solar energy. Solar projects offer tribes a lower-cost entry point compared to wind, although they still face challenges like limited state incentives, logistical hurdles, and competition from more established

wind projects.[121] [122] [123] [124] Tribal lands are increasingly viewed as a means of achieving energy sovereignty, offering economic empowerment while promoting environmental sustainability. However, resistance from state policymakers and limited infrastructure investment continue to impede progress. One notable example is the Lookout Solar Park Project on the Pine Ridge Indian Reservation.[125] Located in Oglala Lakota and Custer Counties, the project spans 840 acres and is set to become the largest solar park in South Dakota. Once completed, it will generate 140 megawatts of power and include 500,000 solar panels, an energy storage facility, and underground electrical collector lines, interconnecting with the U.S. Western Area Power Administration's high-voltage transmission lines.

The consensus among tribes in South Dakota reflects a broader shift toward renewable energy as a tool for self-sufficiency and sustainability.[126] [127] [128] The alignment of environmental stewardship with economic development makes renewable projects particularly appealing, reinforcing cultural values while addressing modern economic challenges.[129] [130] [131] While wind energy dominates the region's renewable energy sector—providing thousands of jobs and drawing billions in investment—tribes are increasingly turning to solar as a more accessible option.[132] [133] [134] Wind projects demand extensive land, high upfront costs, and complex grid connectivity agreements, which have proven difficult for many tribes to navigate. Solar, by contrast, offers a lower-cost entry point with fewer logistical hurdles, though it’s not without its own set of obstacles.[135] [136] [137] The significant challenges preventing this transition, especially with solar, stem from limited demand in the Dakotas, insufficient state incentives, and resistance from local policymakers to support solar growth.[138] Without stronger state backing or local support, solar faces stiff competition from wind energy, which has more established policies and incentives.[139]

## ANALYSIS

South Dakota’s energy landscape is defined by a unique combination of abundant renewable resources, conservative policy frameworks, and diverse economic drivers. Taken together, South Dakota employs a “minimal interference” strategy to renewable energy development. This is evident in many spheres including climate policy, land use and permitting, utility governance, and taxation. This minimal interference approach provides an opportunity for South Dakota to advance a comprehensive “all-of-the-above” statewide energy policy. However, based on analysis of the current energy landscape, there appears to be a shortfall in explicit policy in support of this ideological approach.

South Dakota ranks 5th in total potential for rural utility-scale photovoltaics and 4th in onshore wind power potential among U.S. states.[140] However, in terms of actual generation, South Dakota ranked 46th in solar production and 12th in wind generation in 2023. [141] Despite these

rankings, the state stands out by ranking 2nd nationally in the percentage of total electricity generated from renewable sources.[142] This highlights South Dakota's ability to supply its own residents with a significant portion of their electricity needs from renewables. However, significant renewable energy potential remains unutilized limiting the state as a potential renewable energy exporter to neighboring states.

With respect to climate policy, South Dakota's minimal-interference approach to energy policy has allowed market-driven renewable energy development without restrictive regulations that could deter investment. However, this hands-off approach has also meant that proactive policies to encourage infrastructure upgrades, interconnection queue management, and expedited permitting have not been pursued. While the state has not imposed burdensome regulations on energy projects, it has also not actively facilitated policies that could increase grid capacity and streamline the process for new renewable projects.

Ultimately, South Dakota's current climate policy has been sufficient to establish the state as a leader in renewable energy generation for its own consumption. However, a significant gap still exists between renewable energy potential and realized development in the state, highlighting the limitations of the minimal interference approach. By reducing interconnection bottlenecks, incentivizing new transmission projects, and maintaining a market-driven framework, South Dakota could build on its minimal interference approach and position itself as a key supplier of low-cost renewable energy to surrounding states.

The Public Utility Commission helps facilitate the minimal interference approach to renewable energy development in the state by managing regulations on utilities and project siting. State Statute Title 49 provides the PUC with broad authority over the utility business and energy infrastructure in the state. In the past, this broad authority has been used to promote the development of renewables, such as via the voluntary RRCEO. The South Dakota PUC mission statement is concise and broad. This allows the elected commissioners to interpret the mission statement with discretion leaving the PUC at the whim of the political environment in the state. Currently, this seems to translate to a minimal interference approach regarding renewable energy development. Additional goals of the PUC, including economic development or climate change mitigation, may be needed to further leverage the abundant renewable resources in the state.

The siting process in South Dakota, managed by the PUC, offers a fair approach that appears to neither hinder nor accelerate renewable energy development. The siting process for all generating facilities is consistent across technologies in the state and no implied special treatment is given to any specific technology, in line with its minimal intervention approach. Formalizing the siting of facilities at the state-level aligns the process with the state-level incentive of providing reliable electric service to all residents. The PUC decision timeline, as written in South Dakota law, ensures that projects do not get needlessly delayed during the siting

process. The PUC's public engagement process allows local communities to voice concerns which may slow renewable energy (or other electric infrastructure) development. However, the PUC's ability to grant permits with conditions allows for community concerns to be incorporated into final project design.

South Dakota's approach to leasing and permitting renewable energy projects on public land contrasts with more proactive states. The state's minimal interference policy allows developers significant leeway but lacks structured incentives or streamlined processes to encourage renewable energy on both state and tribal lands.[143, 144, 145] With respect to renewables development on state-controlled land, the emphasis on maximizing mineral rights' royalty revenue is a clear barrier. State-controlled lands, primarily managed by the South Dakota Office of School and Public Lands, prioritize grazing and agriculture leases, alongside revenue from mineral rights. This generated over $16 million in 2023 for educational institutions.[146] While there has been some land leasing for wind energy, with 30,000 acres under wind easements generating $175,000 in revenue by FY2023, solar energy development remains minimal.[147] The absence of a long-term vision and formalized policies for leasing state-controlled lands for renewable projects, combined with competing priorities such as mineral extraction, underscores the limited role state-controlled lands currently play in advancing renewable energy development.

Tribal lands offer great potential for renewables in the state. Covering one-tenth of South Dakota's land area, tribal lands house some of the nation's most potent wind resources. In fact, four of the top five U.S. reservations for wind potential are in South Dakota, highlighting the strategic importance of these lands for future renewable energy projects.[148] Despite the tremendous renewable energy potential, challenges remain. The lack of explicit policy on renewable energy development on tribal lands creates additional hurdles, given the layered sovereignty and jurisdictional complexities.[149] For tribes aiming to develop renewable energy, such as the Oceti Sakowin Power Authority, external factors—including energy market dynamics, regulatory frameworks, and utility agreements—are key to overcoming barriers to financing and project approval.[150, 151, 152]

Although South Dakota has substantial federal public lands, renewable energy development is primarily managed by the Bureau of Land Management (BLM) and other federal agencies. BLM's Resource Management Plan for the state provides some opportunities for renewable energy deployment, but additional federal actions could further encourage renewable development on these lands.

In line with their minimal interference approach, South Dakota's property tax regime for renewable energy provides certainty and incentive for local communities to embrace a project in their area. The nameplate capacity and production taxes provide less subjectivity and a steady

stream of revenue over the project's life compared to an ad valorem approach where the owner could protest valuations, and the value is subject to a depreciation multiplier. In addition, the combination of a nameplate capacity tax and production tax provides both a minimum revenue stream (through the capacity tax) and upside potential (through the production tax) should the project generate more energy than expected. The distribution of funds back to local schools, counties and townships should provide an alignment between perceived drawbacks and benefits (i.e., local viewshed and noise drawbacks paired with local school funding and county services benefits). The property tax regime allows renewable energy projects to compete on their economic merits both with other proposed projects across the state and with differing technologies (i.e., traditional power generation), in line with the state's minimal interference approach.

Similarly, without state-level initiatives, the burden of expanding and modernizing the grid falls primarily on RTOs and utilities. Both MISO and SPP have approved the largest transmission infrastructure buildouts in their history, marking significant progress toward addressing long-standing barriers to renewable energy expansion. These investments are critical for removing physical and economic obstacles to interconnection, improving grid reliability, reducing curtailments, and expanding market access for renewable resources- challenges that are particularly pressing given South Dakota's lack of state investment in transmission infrastructure.

RTO investments in transmission infrastructure are driven by economic incentives, with projected cost savings playing a major role in justifying these projects. MISO's Tranche 2.1 portfolio is anticipated to result in $8.1 billion in Adjusted Production Cost (APC) savings alone, excluding additional reliability, congestion, and resilience benefits. [153] By strengthening the regional transmission network, these projects will enable South Dakota to better harness its abundant wind and solar potential while supporting the state's role as an energy exporter. As renewable energy demand grows, continued collaboration between RTOs, utilities, and policymakers will be essential to fully leverage these infrastructure investments for the benefit of the state and broader region which would constitute a departure from the minimal interference approach South Dakota has historically taken.

## CONCLUSION

South Dakota has made historical developments in hydropower and recent strides in wind development. Opportunities remain for expanding both wind and solar energy given the tremendous renewable energy potential of these resources. These opportunities exist within the tension between the State's current minimal interference approach and its stated all-of-the-above energy goals. The state's reliance on voluntary policy mechanisms, coupled with its robust economic base and conservative political culture, shapes its approach to energy planning. By

leveraging its natural resources, tribal partnerships, and public lands, South Dakota has the potential to make significant advancements in renewable energy. However, achieving this position will require a reconsideration of its minimal interference strategy to specifically address persistent barriers, including interconnection costs, land-use tradeoffs, and the need for inclusive policy frameworks that balance economic development with environmental sustainability.

## APPENDICES

**Appendix 1:** 100 MW Wind Farm 20-Year Property Tax Revenue Projection

| | |
|---|---|
| Project Size (MW) | 100 |
| Capacity Factor | 45% |
| Nameplate Capacity tax ($/kW) | $3.00 |
| Production Tax ($/kWh) | $0.00045 |

| | Nameplate Capacity Tax | Production Tax | Total |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Year 1 | $300,000 | $177,390 | $477,390 |
| Year 2 | $300,000 | $177,390 | $477,390 |
| Year 3 | $300,000 | $177,390 | $477,390 |
| Year 4 | $300,000 | $177,390 | $477,390 |
| Year 5 | $300,000 | $177,390 | $477,390 |
| Year 6 | $300,000 | $177,390 | $477,390 |
| Year 7 | $300,000 | $177,390 | $477,390 |
| Year 8 | $300,000 | $177,390 | $477,390 |
| Year 9 | $300,000 | $177,390 | $477,390 |
| Year 10 | $300,000 | $177,390 | $477,390 |
| Year 11 | $300,000 | $177,390 | $477,390 |
| Year 12 | $300,000 | $177,390 | $477,390 |
| Year 13 | $300,000 | $177,390 | $477,390 |
| Year 14 | $300,000 | $177,390 | $477,390 |
| Year 15 | $300,000 | $177,390 | $477,390 |
| Year 16 | $300,000 | $177,390 | $477,390 |
| Year 17 | $300,000 | $177,390 | $477,390 |
| Year 18 | $300,000 | $177,390 | $477,390 |
| Year 19 | $300,000 | $177,390 | $477,390 |
| Year 20 | $300,000 | $177,390 | $477,390 |
| **20-Year Totals** | **$6,000,000** | **$3,547,800** | **$9,547,800** |

**Appendix 2:** 100 MW Solar Facility 20-Year Property Tax Revenue Projection

| | |
|---|---|
| Project Size (MW) | 100 |
| Capacity Factor | 22% |
| Nameplate Capacity tax ($/kW) | $3.00 |
| Production Tax ($/kWh) | $0.00090 |

| | Nameplate Capacity Tax | Production Tax | Total |
|---|---|---|---|
| Year 1 | $300,000 | $173,448 | $473,448 |

| | | | |
|---|---|---|---|
| Year 2 | $300,000 | $173,448 | $473,448 |
| Year 3 | $300,000 | $173,448 | $473,448 |
| Year 4 | $300,000 | $173,448 | $473,448 |
| Year 5 | $300,000 | $173,448 | $473,448 |
| Year 6 | $300,000 | $173,448 | $473,448 |
| Year 7 | $300,000 | $173,448 | $473,448 |
| Year 8 | $300,000 | $173,448 | $473,448 |
| Year 9 | $300,000 | $173,448 | $473,448 |
| Year 10 | $300,000 | $173,448 | $473,448 |
| Year 11 | $300,000 | $173,448 | $473,448 |
| Year 12 | $300,000 | $173,448 | $473,448 |
| Year 13 | $300,000 | $173,448 | $473,448 |
| Year 14 | $300,000 | $173,448 | $473,448 |
| Year 15 | $300,000 | $173,448 | $473,448 |
| Year 16 | $300,000 | $173,448 | $473,448 |
| Year 17 | $300,000 | $173,448 | $473,448 |
| Year 18 | $300,000 | $173,448 | $473,448 |
| Year 19 | $300,000 | $173,448 | $473,448 |
| Year 20 | $300,000 | $173,448 | $473,448 |
| **20-Year Totals** | **$6,000,000** | **$3,468,960** | **$9,468,960** |

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