



MIDWEST RENEWABLES

Charting a Clean Energy Future

A pathway for Midwest businesses to attain greenhouse gas reduction targets—while lessening impacts on nature and people from the renewable buildout

Key Takeaways

Company procurement and sustainability leaders play a vital role in moving the Midwest region toward a clean energy future. This report provides information about renewable energy progress and challenges in five Midwestern states: Illinois, Indiana, Michigan, Ohio and Wisconsin. Business leaders will also find resources and tools on how to plan, site, procure and build solar and wind projects, which will help their organizations meet greenhouse gas reduction targets while addressing socioeconomic and environmental impacts.

1. There is a high business demand for renewables.

The Nature Conservancy (TNC) researched demand for renewable energy among large businesses and employers across five Midwestern states. We then compared business demand with current solar and wind generation. We found that, on average, 54% of large businesses and employers across the five states have ambitious greenhouse gas reduction targets. These climate-forward companies should be lauded for setting these goals, but they may be challenged to meet their targets without additional local renewable options. The amount of solar and wind power being generated across the Midwest is growing, but the conversion from fossil fuels to renewables is plagued by delays and various challenges. ([Page 8](#))

2. The availability of renewable energy on the grid varies by state.

For example, in Illinois, almost 20% of generated electricity comes from wind and solar, while only 5% of generated electricity in Ohio comes from renewables. By contrast, states such as Iowa, South Dakota and Oklahoma have capitalized on clean energy, generating more than 50% of electricity from solar and wind, as of March 2023. ([Page 6](#))

3. State policies vary in terms of encouraging versus discouraging the renewable buildout.

To meet greenhouse gas targets, companies are proactively procuring electricity from solar, wind and other renewable sources or building their own installations, rather than waiting for enough renewable energy to become available locally. However, some state policies restrict or make the localized

development of renewable projects more challenging, negatively impacting economic opportunities for businesses in those states. ([Page 13](#))

- Federal tax credits available under the Inflation Reduction Act allow companies to offset up to 60%–70% of the cost of building their own renewable projects. However, if state and local policies restrict the renewable buildout or make it infeasible, then local businesses and organizations will not be able to access federal tax credits or achieve their renewable commitments in a cost-effective manner, making these large employers less competitive. ([Page 11](#))

4. Resources are available to help businesses with procurement and siting.

TNC and our partners have developed downloadable tools and other resources that can help buyers successfully procure and site renewable projects while embracing the “3C” approach to renewable energy projects—which considers *communities, conservation* and *climate*. ([Page 4](#))

- The 3C approach can help buyers prevent project delays, reduce project costs and ensure long-term success while addressing environmental and social commitments. A holistic approach, the 3C method looks beyond the amount of clean energy generated by an installation to consider long-term climate impacts and how the installation will affect people, economies, wildlife and biodiversity. ([Page 15](#))
- Modeling conducted by TNC and our partners shows that a 3C approach can help the United States reach net-zero emissions goals while also optimizing outcomes for communities and lands. ([Page 15](#))

“The scale of development required for the clean energy transition is larger than the U.S. last saw when we built out the national highway system between the 1950s and 1980s.”¹

Jason Albritton

Director of the North America Climate Mitigation Program
The Nature Conservancy

Introduction

As big energy users, businesses are positioned to play an outsized role in helping the United States attain net-zero emissions by 2050.² This is especially true for the energy-intensive industrial sector.³

The Midwest, the former Steel Belt, has seen major declines in manufacturing since the 1990s,⁴ but the region still outpaces other regions of the country in manufacturing output and jobs.⁵ Midwest states are also home to a large number of service-oriented and knowledge-based companies.⁶ In the five Midwestern states studied for this report—Illinois, Indiana, Michigan, Ohio and Wisconsin—the industrial and commercial sectors account for the majority of total energy consumption, ranging from approximately 46% in Michigan to 59% in Indiana.⁷

Businesses in these states, and across the United States, have been rising to the challenge of reducing their carbon footprints. They are setting ambitious greenhouse gas reduction targets and working to attain those goals by,

for example, signing renewable energy purchasing agreements with developers or building their own self-generating projects (e.g., on-site rooftop solar, offsite wind or solar farms).

Growth in corporate investments in clean energy aligns with the overall growth in renewables. Nearly 40% of all large-scale renewable energy projects in the United States since 2014 were built due to corporate demand, estimates The Clean Energy Buyers Association.⁸

Companies stand to benefit financially and to improve their reputations by transitioning to clean energy.⁹ Solar and wind installations can now produce energy less expensively than coal plants, especially if the sizeable tax credits available through the Inflation Reduction Act (IRA) can be applied. Companies can save on energy by purchasing renewables,¹⁰ particularly if they lock in long-term prices via contracts or agreements.

Businesses and organizations that invest in clean energy can also demonstrate that they are improving their environmental impact, which may help enhance their brand image among shareholders and consumers.^{11,12}

Supporting a Sustainable and Equitable Clean Energy Transition Starts with the “3Cs”

TNC’s 3C approach—**communities**, **conservation** and **climate**—encourages a systems perspective for renewable projects that looks beyond the amount of clean energy generated to consider long-term climate impacts and how the installation will affect people, economies, wildlife and biodiversity. By adopting the 3Cs, energy buyers and developers for large businesses and organizations can maximize the positive impact of renewable projects.



Photos: (Left) © Carl Schlabach; (Center) © Fauna Creative; (Right) © iStock, sharply_done

COMMUNITIES

- Engage early and often with communities where projects are slated to be built. Seek strong community support, employ diverse local workforces and ensure that economic and community benefits are developed with the input of local communities.
- Consider who the project may impact, positively and negatively, over the short and long term. For example, how will the project balance energy goals with agricultural production goals?
- Design projects to offer maximum benefit to local communities. For

example, use tax revenue for school and community centers, provide employment opportunities for a local workforce and offer opportunities for family farms to remain in the family.

CONSERVATION

- Site projects thoughtfully to avoid, minimize and compensate for negative impacts on wildlife, habitats and natural areas.
- Design the project to allow flora and fauna to flourish. Possibilities include co-locating pollinator-friendly plants or agricultural crops around solar panels.

CLIMATE

- Build projects in areas that have high fossil fuel generation, which would create greater relative carbon reduction than building in areas that already have an abundance of solar and wind projects.
- Minimize the carbon released by construction-related disturbances to forests, wetlands and other ecosystems.
- Take a holistic view of climate effects. For instance, how will the project be sourced? Will the system withstand flooding, drought and other climate change impacts?

Midwest Progress and Demand

Bottom line: Reducing the severity of human, economic and ecological costs associated with rising temperatures is vital.

In 2016, world leaders committed to keeping the global average temperature increase to less than 2 degrees Celsius above preindustrial levels, and preferably to 1.5 degrees Celsius.¹⁴ (Current global temperatures are 1.1 degrees Celsius above historical averages.¹⁵) Achieving this goal will require getting to net-zero emissions by 2050—a goal that we can reach only if we make a dramatic shift from fossil fuels to renewable energy.¹⁶

How much renewable electricity do we need to generate to achieve net-zero? The United States has set a goal of 100% carbon-free electricity by 2035.¹⁷ In addition, the International Energy Agency called for renewable capacity additions to triple from 2022 levels by 2030, reaching around 1,200 gigawatts a year. This equates to an average of 90% of new generation capacity each year.¹⁸

In recent years, the Midwest region has made progress toward a cleaner energy future, but there remains considerable room for improvement. The amount of solar and wind power being generated across the five Midwest states that TNC studied is growing, but the conversion from fossil fuels to renewables

is not happening fast enough. By rapidly increasing wind and solar buildout—while considering the 3Cs of communities, conservation, and climate (see [page 4](#))—the Midwest can help the globe mitigate the worst impacts of climate change in a socially and environmentally conscious manner.

Progress on Renewables to Date

First, let's celebrate the achievements we have made so far. The amount of solar and wind power used to generate electricity across the five Midwestern states has more than quadrupled, from 12,441 gigawatt-hours (GWh) in 2010 to 55,795 GWh in 2022.¹⁹ During this same time period, dependence on coal for electricity declined by 55%, and use of natural gas for electricity generation increased by five times, from 37,072 megawatt hours (MWh) to 187,542 MWh.¹⁹

These regional trends reflect larger economic and environmental developments. Already denounced as the most carbon-intensive energy source, coal is becoming less financially viable given the declining cost of solar and wind.²¹ At the same time, natural gas has increased in popularity due to the expansion of U.S. production and relatively low cost. While natural gas releases less carbon and fewer air pollutants into the atmosphere than coal, it is still a fossil fuel and contributes to climate change.²²

Photo: © Fauna Creative



“Economic and environmental benefits, as well as growing pressure on corporations to meet sustainability targets, have led to a 100-times increase in corporate clean power procurement over the past decade.”¹³

JC Sandberg

Interim CEO and Chief Advocacy Officer
The American Clean Power Association

A Midwest State-by-State Comparison

While renewable energy generation has increased across all five Midwest states, some states are farther ahead than others (Figure 1, below).¹⁹ A number of factors are responsible for influencing the pace of renewable deployment, such as electrical transmission investments, reliability standards and storage capacity. In addition, local policies that prohibit, restrict or make the siting and development of renewable projects more demanding only add to the challenges that utilities, developers and businesses face when they want to build their own renewable projects.

ILLINOIS

The Prairie State ranks first among these states in generation of wind and solar energy, with 19% of electricity coming from these renewable sources. The state has also been actively launching new renewable projects. In 2022, Illinois added 464 clean energy installations (including solar, wind and battery storage), which is more than 40 other states added that year.¹⁰

Illinois relies heavily on nuclear power for its electricity generation. The state has reduced coal use by 43% since 2008.¹⁸ However, Illinois remains one of the biggest coal producers in the country, shipping most of the coal to other states.²³

In 2021, Illinois passed the Climate and Equitable Jobs Act (CEJA), which significantly bolsters investments in the renewable energy sector and sets decarbonization timelines

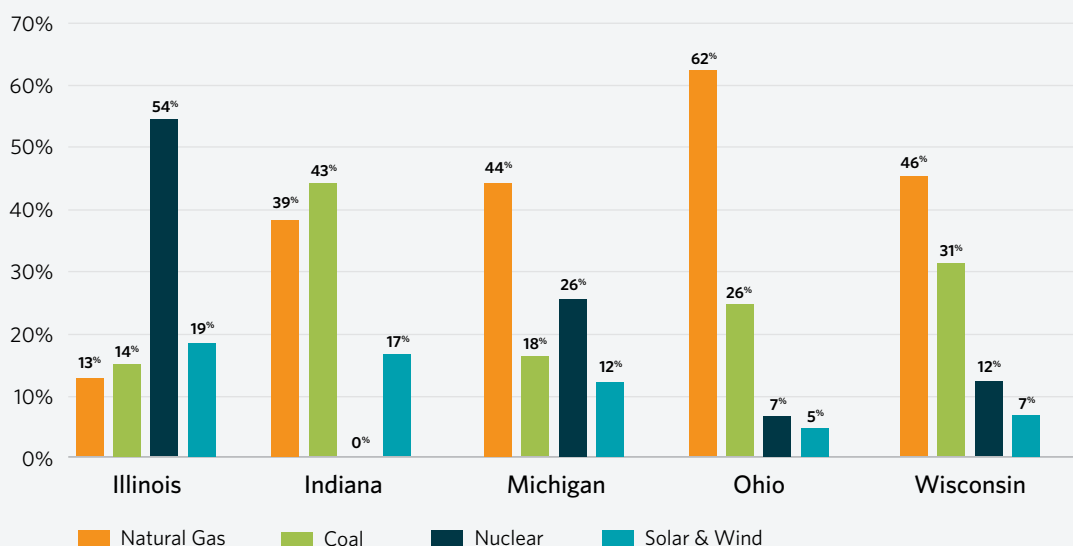
for the fossil fuel industry. CEJA puts Illinois on a path to achieve a 100% clean energy future by 2045, at which time all its fossil fuel power plants will be closed. It also sets the goal of increasing the state's renewable energy share to 50% by 2040.²⁴ This bill underscores the necessity of state policymakers facilitating the rapid growth of solar and wind deployment in their states.

INDIANA

Indiana produces 17% of its electricity from solar and wind. All of the wind generation in Indiana, as of March 2023, comes from independent power producers, which produce energy but are not electric utilities. The state's coal use dropped by 15 percentage points between 2021 and 2023, from 58% to 43%.¹⁹ Indiana has no nuclear power plants. Instead, the Hoosier State gets most of its energy from a combination of natural gas and coal.

Indiana's government is using incentives rather than mandates to encourage more renewable energy development. In 2023, the Indiana Legislature established the Commercial Solar and Wind Energy Ready Communities Development Center to incentivize and assist communities in preparing for the renewable energy buildout.²⁵ This new renewable-ready communities program could help utilities make good on their clean energy commitments. All of Indiana's five investor-owned utilities have set aggressive targets for moving away

FIGURE 1: Current Net Electricity Generation by Energy Type



Source: U.S. Energy Information Administration, March 2023.¹⁹ The data do not include hydropower or petroleum because use of these energy sources is very low in these five states. Percentages have been rounded up.



from fossil fuels to renewable energy, according to publicly available statements. If implemented wisely, the renewable-ready program will not only incentivize counties to qualify as wind- or solar-ready, but also help utilities predict community needs and plan for a carbon-free future.

MICHIGAN

The Great Lakes State relies heavily on a combination of natural gas and nuclear power for its electricity generation. Wind and solar account for 12% of the electricity currently generated in Michigan.

Local governments have oversight of utility-scale wind and solar projects in Michigan. Community acceptance is uncertain as local residents weigh the advantages and disadvantages of siting projects in their area.

However, the state launched 248 clean energy projects in 2022, ranking 20th in the nation for new installations.¹⁰ In addition, TNC found that all seven investor-owned utilities in Michigan have aggressive renewable energy targets. Recent polls also suggest that a majority of Michiganders support the renewable transition, with 73% of respondents in favor of increasing the amount of electricity produced from wind, solar and other renewable sources.²⁶

New investments in solar and wind installations in Michigan face challenges related to siting, transmission and regulatory constraints, which will need to be addressed before these projects can be built. However, with strong support from Michigan utilities, businesses and Michiganders, the state has the momentum needed to address local siting challenges as more renewables are deployed.

OHIO

In the Buckeye State, about 5% of electricity comes from wind and solar. Natural gas generation is the largest source of electricity in the state, followed by coal. Although Ohio's

current generation portfolio is fossil-fuel dominant, utilities in the state are committed to a clean energy future. All four of Ohio's investor-owned utilities have set net-zero by 2050 targets. In addition, all four of these utilities have committed to some of the largest coal fleet retirements in the nation.

Ohio's policies pose significant challenges to the renewable buildout. For example, Ohio's project-siting law (S.B. 52) gives county or township governments the authority to ban large wind and solar developments.²⁷ This statute conflicts with both business and consumer demand. The majority of Ohio residents support the transition to renewables. In a recent TNC survey, 68% of Ohioans said they would support a large local solar installation that would produce energy to be sold and used locally.²⁸

WISCONSIN

The Badger State generates 7% of its electricity from wind and solar. The state gets most of its electricity from natural gas, along with some from nuclear power. Wisconsin also relies on coal.

While Wisconsin's current generation portfolio is heavy on fossil fuels, utilities in the state are committed to a clean energy future. All five of the largest investor-owned utilities in Wisconsin have committed to reducing carbon emissions by 100% by 2050.

In April 2022, Governor Tony Evers signed executive order #38, which resulted in the development of Wisconsin's Clean Energy Plan to put Wisconsin on a path for all electricity consumed within the state to be 100 percent carbon free by 2050. The Wisconsin Public Service (PSC) Commission is exploring how the state can achieve net-zero electricity emissions through its Roadmap to Zero Carbon docket. As a part of this investigation, the PSC will evaluate government and utility goals to reduce carbon emissions to zero by 2050.²⁹

Case Examples: How Midwest Companies Are Reducing Emissions

Here are examples of Midwest employers that are taking significant steps toward a clean energy future.

CASE 1

A Michigan-based furniture maker has reduced the amount of electricity used in branded manufacturing operations by 23%, compared with 2017 usage, by using excess wood from furniture operations to generate the steam needed in production. The company has also entered into a 10-year virtual power purchase agreement (PPA) that will reduce its overall Scope 1 and 2 footprints by about 45% (Figure 2, page 10). In addition, the company sought an evaluation of its Scope 3 emissions and found that these emissions accounted for 92% of its total emissions. A supplier engagement program is being planned to encourage partners to take climate actions.³²

CASE 2

A fast-food restaurant chain based in Illinois aims to reduce greenhouse gas emissions in its offices and franchise restaurants by 36% by 2030, compared with 2015 emissions. One strategy is to procure renewable energy for franchisees. The corporation has completed eight wind and solar projects since 2019 through virtual PPAs. As these projects come online, the renewable energy generated may equal the electricity used by 10,000 of the franchise restaurants.³³

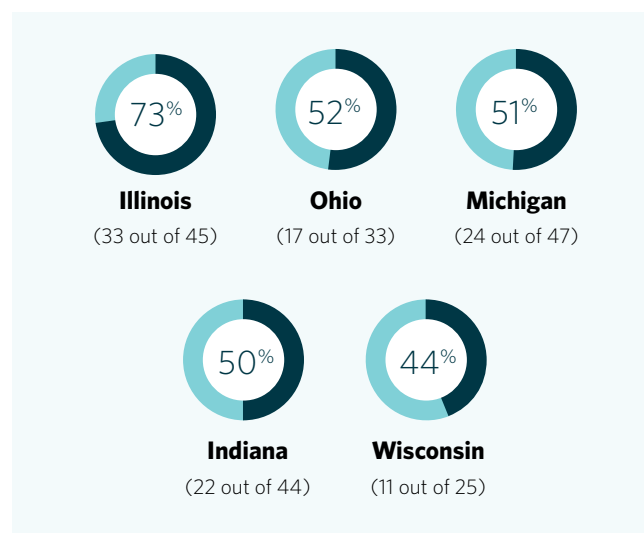
The restaurant chain is also tackling Scope 3 emissions from suppliers. In 2022, the corporation co-signed a renewable energy procurement agreement alongside all five companies that provide food, paper and other supplies to the chain's North American franchises. This innovative approach aggregates the company's renewable purchasing power jointly with its logistics partners. As a result, the electrical load of the company's logistics supply chain for all its U.S. restaurants is expected to be 100% supported by renewable energy.³⁴

The Business Demand for Renewables

Reflecting business trends, a majority of large Midwest corporate businesses and employers have publicly announced their commitments to reduce greenhouse gas emissions. A number of these companies are backing up their commitments by procuring or building clean energy.

COMPANY COMMITMENTS

TNC research looked at greenhouse gas reduction targets publicly declared by large businesses and employers in the five Midwest states.* On average, 54% of large businesses and employers in the states have targets as of 2022, with Illinois having the highest percentage of businesses and employers with greenhouse gas goals. Companies can partially achieve these targets through distributed, or point-of-use, renewable solutions (e.g., rooftop solar). However, the amount of electricity required to offset current fossil fuel use will require utility-scale solutions that cannot be solely achieved with rooftop and other point-of-use deployments.



COMPANY ACTIONS

Large businesses and employers are taking a variety of specific actions to reduce greenhouse gas emissions. Many are going beyond Scope 1 emission targets to pursue Scope 2 and even Scope 3 targets (Figure 2, [page 10](#)).

*This research was completed by Great Plains Institute via contract with TNC. Initially, companies in each state were listed by revenue, then by number of employees. For Illinois, Ohio, Michigan, and Wisconsin, employers with 10,000 or more employees were considered. In Indiana, only publicly owned companies were counted because data collection focused on both public and private companies headquartered in Indiana.



Procuring clean energy. There has been a 100-fold increase in clean power procurement by U.S. companies in the past 10 years, according to the American Clean Power Association. At the end of 2022, 326 U.S. companies had renewable power agreements in place, contracting 77.4 GWh of solar, land-based wind or battery storage. In comparison, only 65 companies had such agreements in 2021.³⁰

The greatest percentage of these corporate contracted projects are in Texas (35%). But many are in the Midwest. Illinois and Ohio were second and third after Texas, representing 7% and 6% of contracted capacity in the United States, respectively, at the end of 2022.³⁰

A number of purchasing mechanisms can be used by businesses to contract for clean energy. Power purchase agreements (PPAs) have become the most frequently used method, accounting for 80% of contracted capacity at the end of 2022.³⁰ PPAs are arrangements in which a third party develops, installs, owns and operates an energy system and sells the system's electricity output and associated environmental attributes to a buyer for a predetermined period.

Case Examples, continued

CASE 3

An Ohio-based company that sells personal care and hygiene products aims to achieve net-zero emissions by 2040.³⁵ The company has already achieved a 57% reduction in Scope 1 and 2 emissions and is ranked fifth on the Environmental Protection Agency's (EPA's) list of the largest consumers of renewable energy.³⁶ In addition to implementing energy efficiency measures, the company procures power through PPAs, including from a Texas wind farm, which powers more than 80% of the company's facilities. The corporation is also meeting 14% of its goal through on-site renewable power, including renewable heating.³⁵

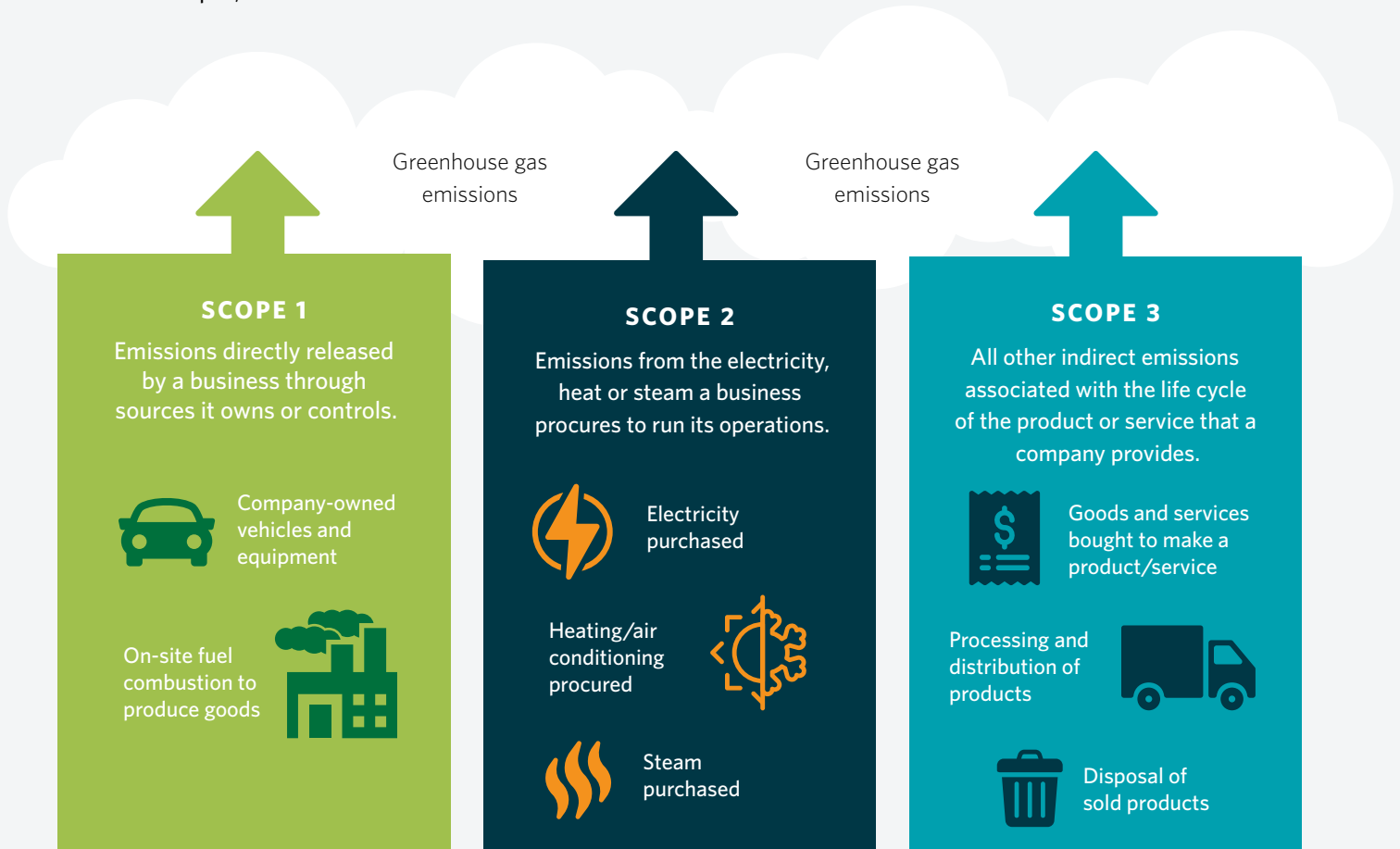
CASE 4

Several major employers in Indiana recently co-signed a letter to the state's biggest utilities asking for more options for large customers to source electricity from renewables. The letter stated: "Our organizations have set public goals to reduce carbon emissions and to operate using renewable energy. Our ability to access power from renewable resources through our utilities is essential to our energy strategies." Specifically, the companies requested a green tariff program, which is a certification program that allows corporations and businesses to prove to consumers that they purchase all or most of their electricity from renewable sources, such as wind and solar.³⁷

CASE 5

A Wisconsin manufacturer of plumbing fixtures obtains 100% of electricity for its U.S. and Canadian operations from wind, solar and other renewable sources. The company's procurement of energy from a wind farm in Kansas has decreased its total emissions by 27%.³⁸ The manufacturer is ranked 45th on the EPA's list of largest consumers of renewable energy.³⁶

FIGURE 2: Scope 1, 2 and 3 Emissions from Businesses



Among PPAs, virtual PPAs are the most prevalent.³⁰ Virtual PPAs are financial contracts wherein a buyer pays a fixed price, minus a market energy price, in exchange for renewable energy certificates from a specific renewable energy source. Electricity is delivered to the grid via virtual PPAs, not directly to the buyer, allowing companies to invest in renewables without being constrained by geographic location.

A variety of factors influence where businesses decide to source renewable electricity. According to the American Clean Power Association, companies tend to contract for projects located near data centers, offices and other load centers. The varying prices of PPAs in different states is also a major factor.³⁰

Self-generating clean energy. Some companies are going beyond procurement to build their own renewable installations, which allows them to generate their own clean electricity for less than it would cost to procure that energy.

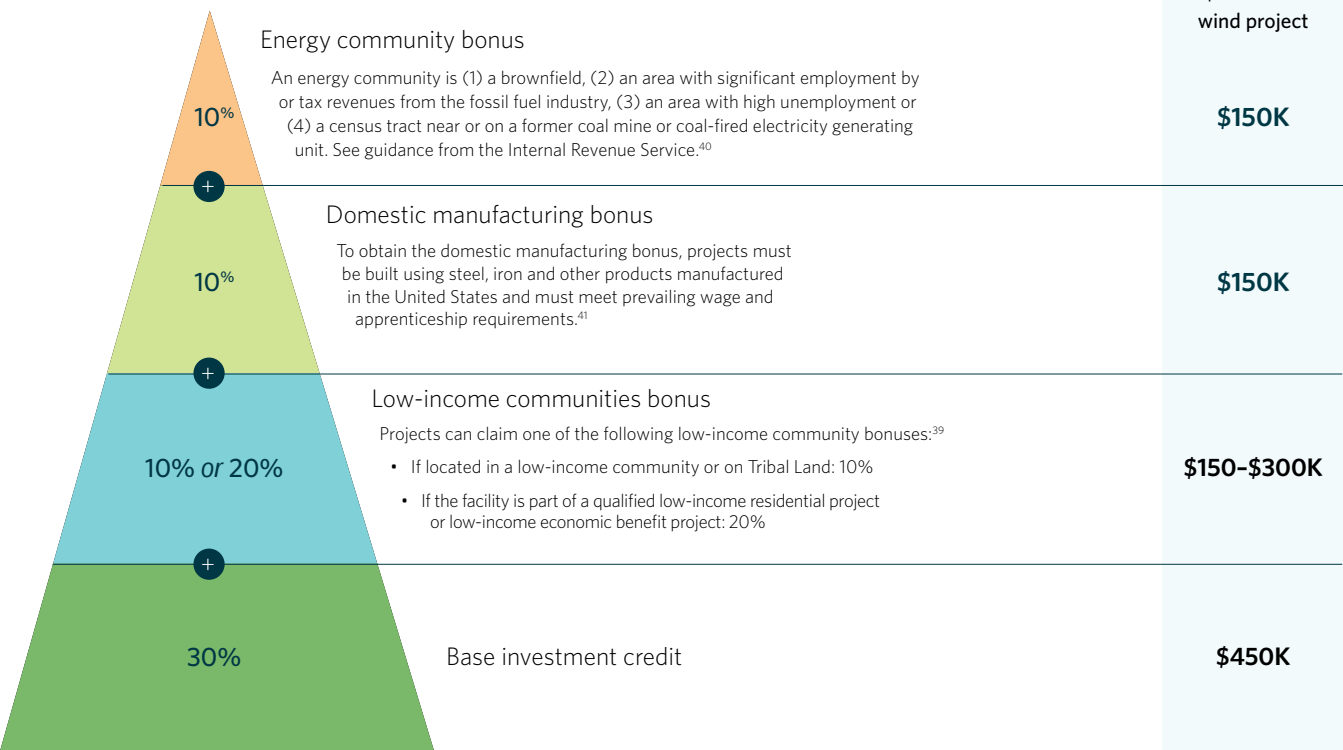
Companies can also sell the electricity back to the grid for a profit. With the passage of the Inflation Reduction Act (IRA), this approach offers a more rapid return on investment (Figure 3, [page 11](#)).

Under the IRA, companies that build solar, wind or storage projects automatically qualify for an investment tax credit worth 30% of the project's cost. In addition, they may obtain a number of other tax credits when the project meets various qualifications. For instance, a company can get a 10% tax credit if the project is sited in an "energy community," which includes brownfields and areas with high unemployment. When all the possible IRA tax credits are applied, a company could reduce its costs on renewable projects by up to 60% to 70%.³¹ This could potentially make it cheaper for businesses to generate their own clean electricity than to purchase it from the grid.



FIGURE 3: Investment Tax Credits Available Through the Inflation Reduction Act

Under the Inflation Reduction Act, companies that build wind, solar or battery storage projects to generate their own electricity or sell the electricity on the grid qualify for an investment tax credit worth 30% of the project’s installation cost. In addition, they may obtain a number of other tax credits if they meet location and wage requirements. The credits can potentially cover up to 60%-70% of a project’s installation cost. These incentives and bonuses began in 2023 and continue through 2032.³⁹



“Corporate renewable energy buyers are shaping markets and demonstrating leadership on the global stage through their ambitious renewable energy and sustainability commitments and their ability to shape how renewable energy is procured.”⁴²

Anna Dirkswager

Director of Climate and Energy, Midwest Division
The Nature Conservancy

How Can We Accelerate Progress in the Midwest?

Solar and wind electricity generation has increased across the five Midwestern states, but the buildout needs to pick up speed to meet the renewable energy goals set by utilities (Figure 4, [page 13](#)). In addition, businesses in the five states are facing challenges meeting their renewable energy commitments due to the lack of available electricity from renewable sources.

Renewable electricity generation has increased most rapidly in Great Plains states, such as Iowa, South Dakota, Oklahoma and Kansas, which all produce over 50% of their electricity from renewable sources (Figure 5, [page 14](#)). Closer to the Great Lakes, progress has been slower due to a number of factors that vary across states. For example, in Illinois, almost 20% of electricity generated comes from wind and solar, while only 5% of electricity generated in Ohio comes from renewables. In comparison, states producing over 50% of electricity from renewables are in line with the emission reduction targets set by many businesses.

Given the large amount of energy-intensive manufacturing and heavy industry located across the Midwest, it is important for all Midwestern states to increase the amount of wind and solar power available to support these key industries. Global demand is increasing for sustainably made materials and products, and the Midwest must meet this economic opportunity or lose its competitive edge and the opportunity for many jobs associated with this sector.⁴³

A number of barriers are slowing the installation of more renewable energy projects, including long approval processes for new installations, supply chain delays, interconnection issues and land-use concerns. Additionally, the policy landscape across all five states is not currently designed to enable rapid local development of renewable energy in a way that makes use of newly available economic incentives or creates the urgency necessary to address the climate crisis.

Some of these problems are being addressed. For instance, the IRA appropriates \$2.9 billion to incentivize increased development of the electrical transmission infrastructure. The U.S. Department of Energy is charged with disbursing direct loans and grants to facilitate project development across the nation.⁴⁴ As the capacity of the transmission grid increases, more renewable projects will be able to come online.

In the Midwest, the Midcontinent Independent System Operator (MISO) is the regional transmission organization (RTO) that covers the majority of the states in this report. In 2022, MISO approved \$10.3 billion to fund 18 transmission buildout projects that will provide about 53 GW of solar, wind and battery storage projects. Some of the projects may come online by 2028.⁴⁵ PJM, which is another RTO, also serves portions of Ohio and Illinois. PJM has its own challenges related to accelerating the renewable buildout.

TNC is working to address two challenges that can stymie the needed growth of solar and wind installation—state and local policy and land-use concerns—by encouraging thoughtful and collaborative partnerships.

STATE AND LOCAL POLICY

State laws and regulations affecting renewable energy development vary across the Midwest. Here are three examples of policies that may deter solar and wind projects:

- In Ohio, a project-siting law (S.B. 52) gives county or township governments the authority to veto large wind and solar developments.⁴⁶
- In Michigan, utility-scale wind and solar projects must receive approval by local townships.⁴⁷

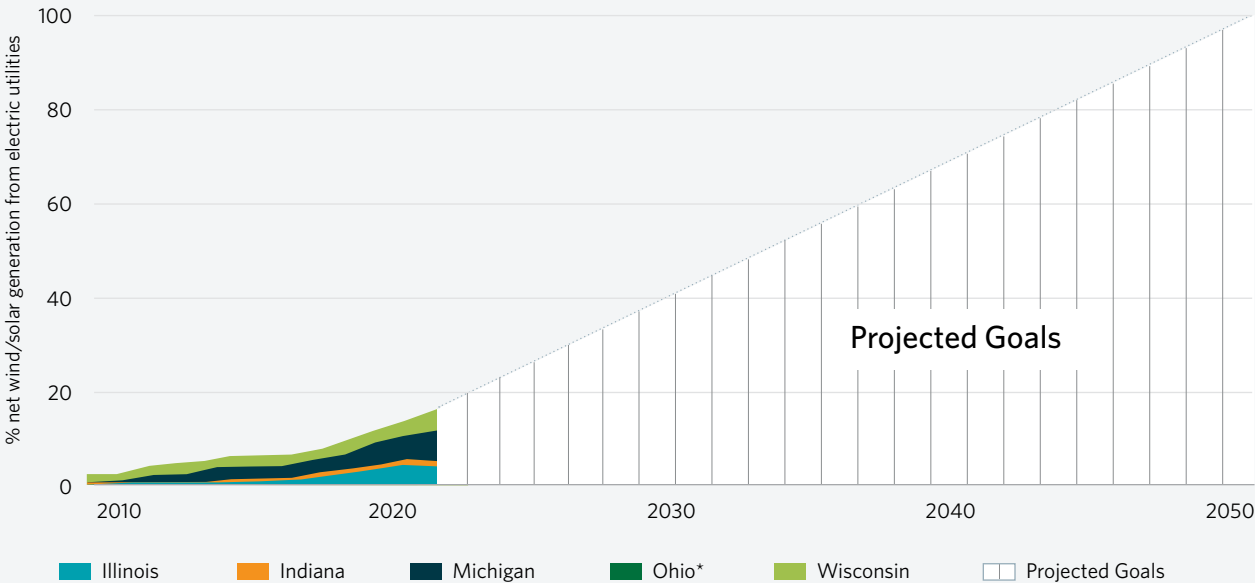
- In Indiana, companies are restricted in their ability to enter into third-party power purchase agreements, which limit their capacity to contract directly with wind or solar developers.⁴⁸ In addition, community acceptance of the renewable buildout is inconsistent across the five Midwestern states and may vary considerably from township to township, further reducing the landscape of opportunity.

The most cost-effective and climate-forward scenario for businesses is for them to obtain electricity from renewable resources near their office buildings, factories, data centers and other properties—either through procurement or by building their own installations.

When states enact policies that slow down the renewable buildout, it not only makes it difficult for businesses to meet their clean energy targets and provide sustainably produced products, it also curtails their ability to access federal tax credits through the IRA, which can significantly lower the cost of building renewable projects. All of these challenges create an environment that reduces a company’s ability to maintain a competitive edge, which may jeopardize their status as a large local employer.

TNC is advocating across the Midwest for state policies that can accelerate the deployment of renewable projects that

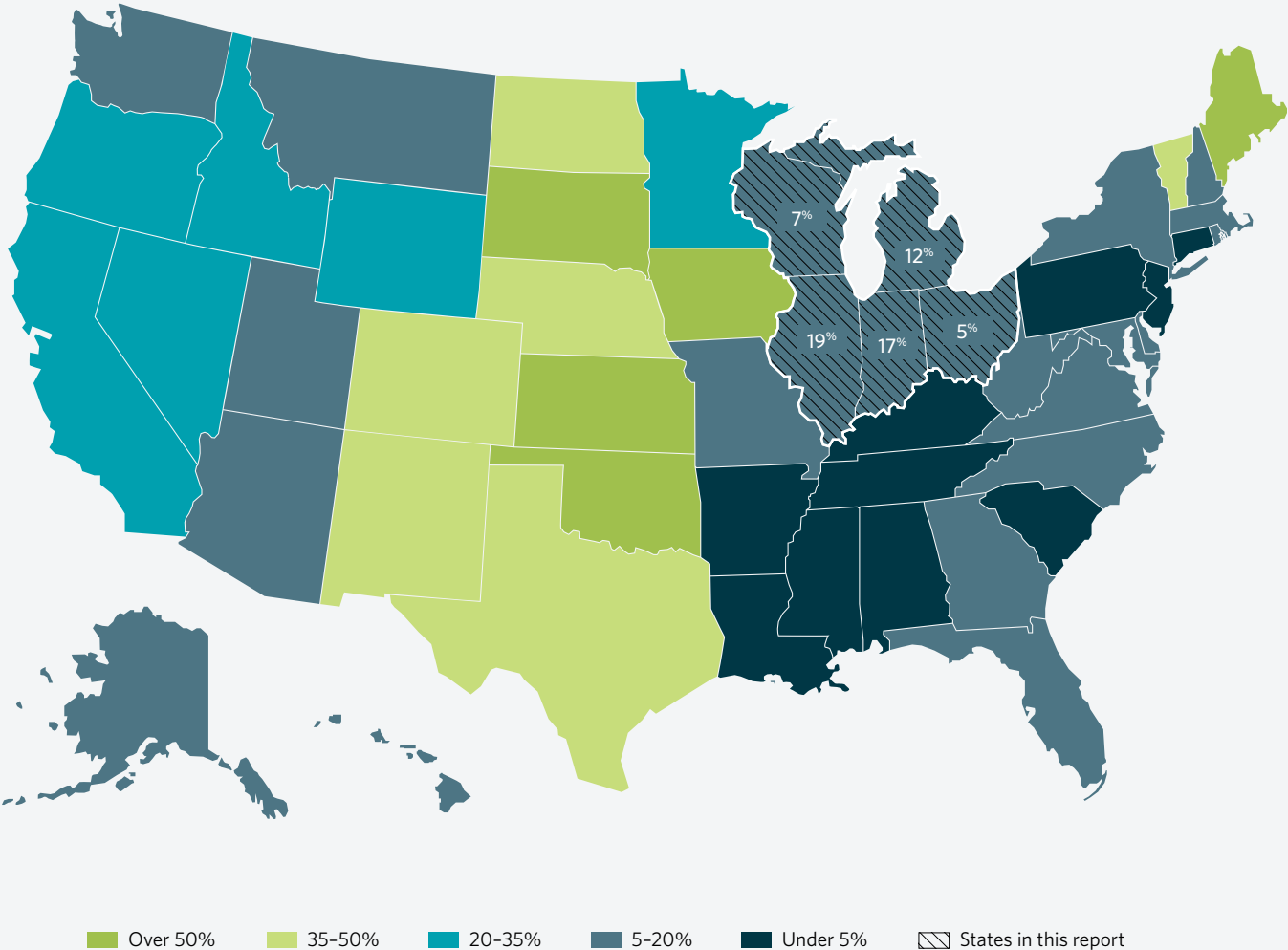
FIGURE 4: Electrical Generation from Wind and Solar by Utilities Versus Projected Utility Goals



*Ohio is not visible because renewable production by utilities is near zero.

Source: Data from 2010-2022 from U.S. Energy Information Administration.¹⁹ Projected utility goals collected from publicly available statements on utility websites as of July 2023.

FIGURE 5: How Midwest States Rank on Wind/Solar Generation Against Other U.S. States



Source: U.S. Energy Information Administration, March 2023.¹⁹

appropriately consider the benefits and costs to communities, conservation and climate. TNC recognizes that the rapid buildout of renewable energy is not only necessary to address the climate crisis, but essential to allowing large employers to remain competitive and meet their global climate commitments.

LAND-USE CONCERNS

Another critical challenge delaying some renewable projects is concerns about land usage. Estimates suggest that the United States will need a land area the size of Texas to build out enough wind, solar and transmission to reach net-zero emissions by

2050.¹ Some communities are worried that these renewable installations will take over or encroach on land currently used or slated for other important purposes, such as agriculture, recreation and affordable housing. Environmentalists and nature advocates are also concerned about the loss of land critical to conserving wildlife and biodiversity.

Fortunately, as detailed in the next section, TNC research shows that the United States can avoid most impacts to sensitive and working lands with careful and coordinated planning and robust community engagement, while still achieving net zero emissions by 2050.

A Holistic Approach to Renewable Procurement and Siting

A solution to land usage concerns and renewable projects: Embrace the 3Cs for clean energy development, procurement and siting:¹

- **Communities:** Support an equitable transition that considers the needs of various people and communities.
- **Conservation:** Protect wildlife and habitat.
- **Climate:** Optimize carbon impact.

Siting renewable projects in areas that would significantly impact wildlife, habitat, people or communities can lead to conflict and slow the progression of renewable projects. These delays and increased costs can be minimized by evaluating siting considerations early in the project development process.⁵⁰

Ground-breaking research from TNC shows that it is possible to avoid most impacts to sensitive natural and working lands by following purposeful practices, such as siting projects on degraded lands (e.g., abandoned coal mines, landfills), co-locating wind and solar in the same area and planting crops beneath and between solar panels. Approaches such as these, detailed in TNC's *Power of Place* report, cut the amount of land

needed for renewable installations to reach the U.S. net zero goal in half.¹ It also helps ensure that projects are completed in a timely manner. A study of solar projects indicates that permitting was completed three times faster and project costs were 7% to 14% lower when projects were sited in areas of low biodiversity, compared with high biodiversity sites.⁵¹

Many clean energy developers and customers are already committed to prioritizing environmental and social outcomes of new clean energy projects. In a recent study, over 60% of U.S.-based corporate energy customers and developers stated that they believe this approach will be the new standard in the next five years.⁵²

TNC has developed a number of resources that can help Midwest companies balance a 3C approach to procurement and siting with financial and other priorities ([page 17](#)). However, there is no one-size-fits-all approach to this challenging work. Corporate leaders can use the guiding principles on the next page to help them identify the way forward.

“If we’re not careful about where we site clean energy installations, we could end up converting habitats important for carbon storage and biodiversity conservation, ultimately creating conflicts and slowing development.”⁴⁹

Joe Kiesecker
Lead Scientist
The Nature Conservancy





Photo: © iStock, ArtistGNCphotography

Guiding Principles for Procuring and Building Renewables

Businesses that have established climate targets can serve as a critical lever to address both climate and biodiversity challenges, but greater and more inclusive collaboration is needed between industry, governments, advocates and local communities.

TNC offers the following recommendations to provide a roadmap to further advance this work and facilitate the widespread adoption of purpose-driven procurement.

Socialize best practices and encourage the continued evolution of industry standards to drive change.

Sharing success stories and working with like-minded stakeholders to take collective action are key to driving change. Coalescing around shared and standardized principles can signal market demand that will drive more impactful project opportunities, facilitate broad industry adoption and ensure that best practices are followed throughout the lifetime of the project. Ideally, this framework evolves into an industry standard or certification process that can be replicated, tracked and reported upon.

Catalyze buyers to be powerful agents for change beyond their immediate footprints.

Energy buyers are demonstrating their ability to drive positive market change through purchasing decisions. This progress can be further accelerated, and its impact broadened, using innovative and creative approaches, especially where the market has lagged. Advocating for policy change aligned with 3C priorities, partnering with nontraditional allies and piloting novel energy-sourcing approaches can allow more communities to realize the benefits of purpose-driven clean energy projects.

Support clean energy due diligence tools to enable purpose-driven procurement decisions.

Due diligence tools, such as TNC's Site Renewables Right map or the federal government's Climate and Economic Justice Screening Tool, enable buyers to utilize expertise from industry leaders, scientists and community advocates to make purpose-driven decisions. It is important to strengthen existing due diligence tools and develop additional publicly available tools to address emerging issues and geographies.

Elevate local voices through robust and consistent community engagement practices to ensure an equitable transition.

Businesses cannot make the transition to a clean energy economy alone. They need to involve the communities in which they operate to support an inclusive transition away from fossil fuels. Lessons learned from community advocates should be sought. A number of organizations have developed helpful resources.⁵³

Resources for Planning, Procuring and Siting Renewable Projects—While Meeting the 3Cs

The following TNC resources and tools are helping a growing number of businesses ensure renewable projects meet environmental and social commitments as well as financial goals.



POWER WITH PURPOSE: A TNC AND RIVIAN CASE STUDY AND TOOLKIT

TNC and Rivian developed a model for procuring and building renewable energy that optimizes economic value while also considering the 3Cs—communities, conservation and climate. The report details how Rivian used this purpose-driven model to bid for a variety of long-term purchasing mechanisms, including power purchasing agreements and renewable energy certificate purchase agreements.

As part of this project, Rivian and TNC created two downloadable tools that can help other organizations procure renewable energy:

- An Offer Assessment Form, or template, that can be used to assess the impact of proposed projects on the 3Cs
- An RFP Template and Narrative Questionnaire that buyers can use to communicate their preferences for projects, such as 3C considerations, to potential developers and conduct due diligence.

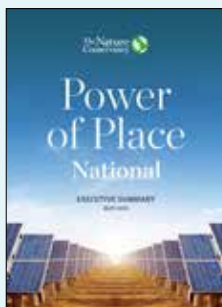


SITE RENEWABLES RIGHT

TNC's *Site Renewables Right* report identifies where wind and solar energy can be developed in the central United States while conserving important wildlife habitats and natural areas at the same time.

In addition, downloadable, interactive maps and data synthesize more than 100 layers of engineering, land-use and wildlife data.

Site Renewables Right provides a way for companies and communities to engage in the right conversations to avoid project delays and impacts to the very same wildlife and natural areas we are trying to protect from climate change. *Site Renewables Right* has received support from a diverse group representing business, research, conservation and agricultural voices.



POWER OF PLACE: CLEAN ENERGY SOLUTIONS FOR PEOPLE AND NATURE

TNC's report can help energy planners and policymakers execute net-zero strategies that benefit climate, nature and people. It shows that with careful and coordinated planning and robust community engagement, the United States can build the clean energy infrastructure needed for economy-wide, net-zero emissions by 2050 while avoiding most impacts to sensitive natural and working lands.

To access these TNC resources, visit [nature.org/MidwestRenewables](https://www.nature.org/MidwestRenewables).

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