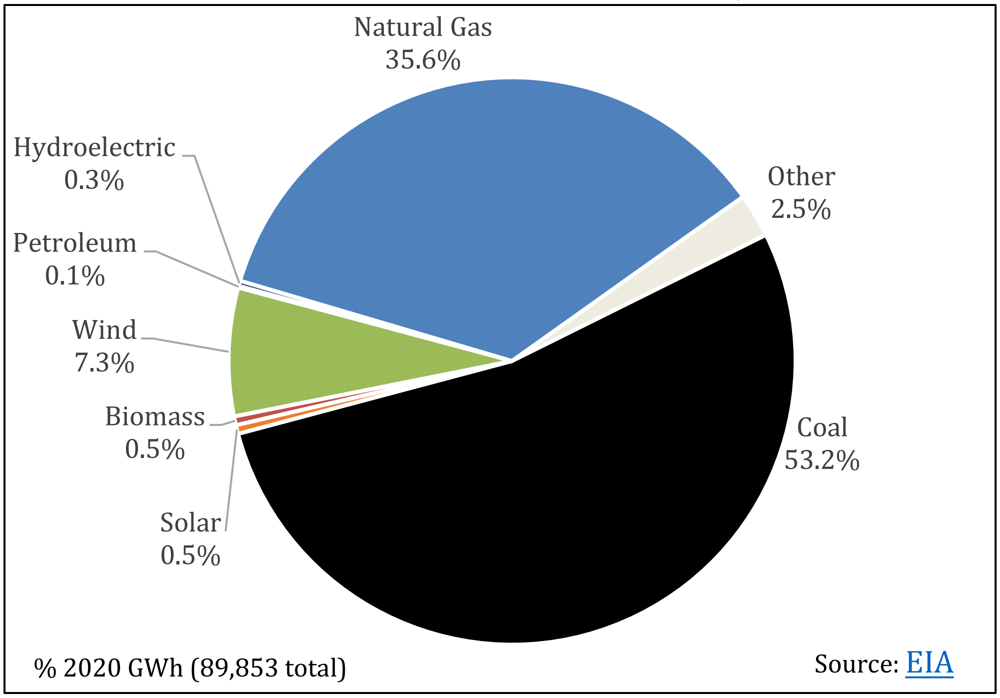
State Brief: Indiana

BACKGROUND

Indiana's electricity portfolio is dominated by coal and natural gas. Natural gas-fired power plants are increasingly replacing coal: While coal's share in the state's electricity mix declined from 90% in 2010 to 53.2% in 2020, natural gas' contribution increased from 5% to 35.6%. Senate Bill 386, enacted in 2021 allows electric utilities to finance the early retirement of inefficient power plants through securitization which allows utilities to pass on the upfront costs of building a new, more efficient power plant to its rate payers who in turn receive a net benefit through lower cost electricity.

Indiana's Net Annual Electric Generation, 2020



The nation's eighth-largest coal producing state, Indiana's mines accounted for nearly 5% of U.S. coal production in 2018. The industrial sector accounts for the largest share of energy use in the state, consuming almost half of end-use energy in Indiana. "Overall, more than three times as much energy is consumed in the state as is produced there" (EIA 2020).

Indiana is the fifth largest producer of fuel ethanol in the country. The Hoosier State has more than 2,968 megawatts (MW) of installed wind capacity and in 2019, experienced the seventh-largest increase in wind generation in the U.S. Nearly 75% of Indiana's installed solar capacity is utility scale. As of mid-2021, Indiana has 473.26 MW of installed solar capacity. In 2020, the Solar Energy Industries Association (SEIA) ranked Indiana 8th in the nation for projected solar energy capacity growth over five years at 3,968.57 MW. The 2020 U.S. Energy and Employment Report found that Indiana has 59,041 traditional energy workers (1.9% of total state employment). In 2020, Indiana ranked 12th nationwide for clean energy jobs (including jobs in energy efficiency and solar) and the industry employed 80,614 Hoosiers.[1]

The Indiana Utility Regulatory Commission (IURC) regulates 21 electric utilities and seventeen gas utilities. Several electric and gas utilities have withdrawn from IURC oversight of such things as rates, charges, and financing. The five members of the IURC are appointed by the governor, and no more than three commissioners may be from the same political party. Currently, the IURC has a Republican majority, James Huston serves as chair. A Republican majority controls both chambers of the general assembly, and Governor Eric Holcomb is also a Republican.

[1] This is in addition to the number of traditional energy jobs in the state.

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POLICY STRENGTHS AND OPPORTUNITIES

The National Renewable Energy Laboratory (NREL) developed the notion of "policy stacking",[2] an important framework for policymakers to consider. The basic idea behind policy stacking is that there is an interdependency and sequencing of state policy that, when done effectively, can yield greater market certainty, private sector investment, and likelihood of achieving stated public policy objectives.

In theory, but not always in practice, clean energy policies can be categorized into one of three tiers of the policy stack. Tier 1, market preparation policies, remove technical, legal, regulatory, and infrastructure-related barriers to clean energy technology adoption. Tier 2, market creation policies, create a market and/or signal state support for clean energy technologies. Tier 3, market expansion policies, create incentives and other programs to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

For example, before financial incentives for combined heat and power (CHP) will be successful, two key considerations for deployment are having clear interconnection standards and favorable stand-by rates for customers who opt to add CHP. In this example, states should adopt policies to address interconnection and stand-by rates before adopting financial incentive programs.

GRID MODERNIZATION

Digital technologies have enabled utilities to better manage the grid and provide opportunities for consumers to customize their services to fit their priorities. These technologies allow a two-way flow of information between the electric grid and grid operators and between utilities and their customers.

Emerging technologies improve system reliability and resiliency by enabling better tracking and management of resources. These technologies allow grid operators to incorporate central and distributed energy resources, energy storage technologies, electric vehicles, and assist in addressing the challenges associated with planning, congestion, asset utilization, and energy and system efficiency.

On the customer's side of the meter, dynamic pricing, advanced metering infrastructure, and other technologies allow an exchange of information and electricity between a consumer and their electric provider. Grid modernization is associated with greater consumer choice by allowing customers to meet their energy priorities by producing their own energy or through contracting innovative clean energy services from different providers.

Grid modernization will require a suite of state and federal policy changes to support advancements in grid technologies, grid management, and utility regulation.

There are supportive policies that policymakers could adopt to increase in-state modernization efforts.

1. Develop a grid modernization strategy through a stakeholder process. Alternatively, states might decide to require that utilities develop and propose a ten-year grid modernization plan to the utilities commission within a specified timeframe. Utilities would then be required to implement that plan within another specified timeframe. Strategies and/or plans should outline a clear set of grid modernization goals and describe methods to measure, report, verify, and enforce progress towards those goals. In March 2020, the IURC approved Indianapolis Power and Light's (IPL) grid modernization plan, which will include replacing aging infrastructure and deploying advanced metering infrastructure (AMI).

2. Require that utilities' integrated resource plans (IRPs) include plans to enhance cybersecurity, integrate distributed energy resources (including electric vehicles and energy storage) and demand response and/or demand-side management (DSM) programs, and measure and report on the results of these efforts.

3. Develop new utility business models. Today, non-traditional energy resources, including emerging, disruptive technologies (for example, customer-owned distributed generation, EVs, and energy storage) are increasingly cost competitive with more traditional resources. This has not only led to shifting customer expectations but also

[2] V.A. Krasko and E. Doris, *National Renewable Energy Laboratory*, 2012. Strategic Sequencing for State Distributed PV Policies: A Quantitative Analysis of Policy Impacts and Interactions. http://www.nrel.gov/docs/fy13osti/56428.pdf.

to new market realities confronting energy providers. In light of this, many argue that the regulated utility industry needs a new set of principles that are more sophisticated, forward-planning, and incentive-based. To address this, states could implement alternative ratemaking mechanisms, adopt performance-based regulation, and/or work with utilities to develop new business models that support grid modernization.

4. The technologies associated with grid modernization generate a wealth of information about the grid itself and about customer behavior. State policy should include measures to protect this data, but can also encourage the use of this information to facilitate additional improvements in grid management and customer service. Indiana does not have clear policies governing customer data access and privacy protections. To address this, policymakers could develop legislation or rules that, at minimum, do the following: clarify who owns the energy data associated with consumer energy usage; protect customer privacy; outline the process for allowing direct access to data by third parties; and promote access to the highest resolution of data possible. The state could establish customer access to energy data through the Green Button Connect program, for example.

The adoption of incentives for or a requirement to integrate a certain amount of energy storage on the grid alongside enhancing renewable energy and electric vehicle policies would support modernization efforts and improve the chances of successful grid modernization.

ENERGY STORAGE

Energy storage offers a unique opportunity to manage supply and demand dynamically while also maximizing the value of grid resources. By deploying storage to strategic locations, utilities can more effectively manage their energy portfolios. First, storage allows utilities to manage intermittent demand – helping reduce peak demand requirements. Because the generation resources that provide peak power are the system's most expensive, reducing peak demand can save consumers money. Second, the responsiveness of energy storage can allow utilities to implement voltage regulation and other ancillary services, which are useful for improving system efficiency. Third, because storage technologies can both store and dispatch power, storage enables better integration of intermittent power generation resources like renewable energy to the grid. Finally, energy storage can help the commercial sector avoid costly demand charges. As utilities around the country consider implementing or extending demand charges to other sectors, energy storage will become more relevant as a customer cost-saving investment.

The flexibility of battery storage, combined with advanced metering infrastructure, allows customers to control, for instance, how and when they use energy from the grid or from solar panels installed on their home or business. In most cases, this can provide greater cost savings than standalone solar systems. Combined with time-varying rates or real-time pricing programs, state policy can further support customer choice and open a new market for energy services. Prices that better reflect the time-varying and location-dependent costs of producing and delivering electricity can lead to several economic and environmental gains.

Two major trends have enabled increased deployment of energy storage: declining costs and technological advances. State policies can help maximize these benefits by establishing both a framework for easy integration of energy storage resources onto the grid and a marketplace that monetizes the benefits of energy storage for cost-effective investment.

While Indiana does not have an energy storage procurement target or goal, the state has a solid foundation for enabling the use of energy storage technologies. Utilities in the state are increasingly deploying energy storage. For instance, Vectren announced plans in June 2020 to retire more than 700 MW of coal and replace it, at least partially, with solar and storage. The utility found that the switch will save ratepayers up to $320 million over the next twenty years. A 2018 study by Advanced Energy Economy (AEE) found that cost-effective demand response and optimally sited energy storage have the potential to generate net benefits, including savings for consumers, "ranging from $448 million to $2.3 billion over 10 years." The Battery Innovation Center (BIC), located in Newberry, is a public-private collaboration focusing on the "rapid development, testing, and commercialization of safe, reliable, and lightweight energy storage systems."

There are several policy opportunities to take advantage of the growing technological advances in and declining costs of energy storage. The recommendations here draw heavily from the Interstate Renewable Energy Council's

(IREC) 2017 report, "Charging Ahead – An Energy Storage Guide for Policymakers." Policymakers in Indiana could consider the following:

1. Amend existing interconnection and net metering policies to ensure that storage can connect to the grid through a transparent and simple process. IREC has produced a series of model interconnection and net metering policies that states can adopt. States can establish best practices for interconnection and net metering in statute, or legislation can provide an instruction to the utilities commission to implement these best practices.

2. Instruct the IURC to evaluate the value of energy storage in multiple strategic locations across the utility system and consider a requirement to deploy storage where it will be cost effective or identify the price point at which it will become cost effective.

3. Require the inclusion of energy storage as a critical piece of the energy system as both a demand and supply management resource. Some states have required that utilities evaluate the cost effectiveness of non-wires alternatives (NWAs) to large transmission and generation investments. Alternatively, states might want to require that utilities develop a distribution investment plan that identifies the locations on the distribution system where energy storage or other distributed resources would offer the greatest value.

4. Consider creating a mandatory energy storage procurement target with a documented process for periodic review of progress towards that goal. Procurement targets can jump-start market creation, spur fast learning, and guide the development of a regulatory framework.

5. Finance and incentivize energy storage for customers and utilities. Incentives could enable customers to use storage to manage their electric load and store locally produced renewable energy. Incentives in the form of rebates, grants, and tax credits can provide a bridge to scalable deployment for storage. These incentives can also be designed to decline as the value of storage becomes more readily monetized, and/or as the cost of storage decreases. Policymakers could allow utilities that provide storage incentives to customers to also recover the costs of installing smart meters. This would enable dynamic and time-varying energy management from multiple distributed battery systems. This should signal to customers the value of leveraging storage while better aligning customer costs with system costs. Financing energy storage installations for commercial customers could help reduce their demand charges. Policymakers might start first with a policy that provides grants to pilot projects, and/or that targets existing solar system owners. Financial incentives should be designed to ensure that the state meets other goals including emissions and peak demand reductions, and equitable access to clean energy.

MAINSTREAMING RENEWABLES

As the renewable energy industry matured, technology improved, and global production of generating equipment increased. Renewable energy is increasingly seen as the least cost and lowest risk form of energy (excluding energy efficiency). A 2021 Energy Information Administration report predicts that the share of the United States' electricity generation mix supplied by renewable energy resources will increase from 21% in 2020 to 42% by 2050. With increased deployment, utilities are learning more about how to integrate renewables effectively, investors are becoming more comfortable with the technologies, and building code officials are recognizing common standards and best practices. For these reasons, it is in the interest of policymakers to ensure that their states are well positioned to benefit from the transition to clean and sustainable energy resources.

To reduce barriers to customer and utility participation in the renewable energy market, Indiana might consider several policy options.

Customer-Oriented Policies

1. **Interconnection, Net Metering, and Streamlined Permitting –** In general, customers want a clear, streamlined, affordable, and predictable process for connecting renewable energy systems to the grid. To promote the adoption of distributed generation in Indiana, policymakers might consider reinstating retail rate net metering and removing the aggregate capacity cap. Allowing aggregated net metering would be especially beneficial to the state's agricultural operations. Other applications for aggregated net metering include commercial properties and public entities like state and local governments, universities, and schools. The state might also consider establishing either statewide standards for streamlined permitting processes, or resources

to support local governments that voluntarily implement a streamlined program, as Marshall County has done. State incentives, such as tax credits, financial incentives, or loans can be tied to systems that are established within a designated streamlined permitting jurisdiction.

2. **Shared Renewables –** Due to building and property attributes and ownership issues, many customers are unable to install renewable energy technologies where they live or work. Allowing shared, or community, renewable energy projects addresses this. These projects have multiple owners or subscribers who pay for a portion of the generation provided by the system. Indiana does not have a state policy to support shared renewables, but utilities in the state offer access to community solar projects. For instance, Duke Energy has a pilot program for businesses, schools, and nonprofits. Other utilities in the state that offer community solar include Southern Indiana Power and several electric cooperatives. Logansport's municipal utility began construction on a project in June 2020. To support program participation, Indiana might consider adopting a virtual net metering policy. Virtual net metering allows a customer to receive credits from a shared system as if the generation were on site. Virtual net metering is different from a power purchase agreement (PPA), which pays the customer for the proportion of power they produce. Because it is treated as a credit on the customer's bill, the customer can avoid the tax implications of a PPA payment – which can adversely affect the economics of the system (and may come as a surprise to the participant).

   Low credit ratings often deter participation in renewable energy markets; this can affect low- and moderate-income (LMI) households' adoption of renewable energy solutions. Supportive policies for shared renewables can be designed to encourage participation by LMI households; this can increase adoption of renewable technologies and reduce energy costs. Low-income participation can be encouraged either through a percentage mandate for the overall annual contracted capacity, or by offering a higher rate of payment for the portion of shared solar capacity attributed to low-income customers. States that have a shared renewable program may want to coordinate this program with implementation of the federal Weatherization Assistance Program (WAP) to provide recipients of assistance access to participation in a shared renewable system. Since 2010 Indiana has received $61.9 million from WAP and $9.2 million from the State Energy Program (SEP) which has helped to fund a number of energy initiatives in the state.

   There are several additional policy options that Indiana might consider to promote renewable energy uptake by LMI consumers. Generally, successful state policies should be tailored to these customers, be cost-effective and financially sustainable, have measurable performance indicators, and be flexible enough to allow later changes in design.

3. **Corporate Procurement –** Many Fortune 100 and 500 companies have established either climate goals or commitments to purchase renewable energy. Since 2016, nearly 31 gigawatts (GW) of renewable contracts have been announced by corporate entities. In 2020 alone, corporations signed 100 agreements for over 10 GW of renewable energy. This is leading policymakers to provide additional avenues for businesses to procure renewable energy. A January 2020 report by AEE found that commercial and industrial customers in Indiana could create demand for up to 3.6 GW of renewable energy capacity. If that demand were met in state, the report also finds, this could result in $5.78 billion in investments and the creation of approximately 25,000 jobs in the next 10 years. Indiana's policy allows companies to purchase renewable energy credits (RECs), buy renewable energy on the wholesale market, and develop or lease onsite renewable energy projects. Indiana was ranked 30h overall in the Retail Industry Leaders Association's 2020 rankings of state corporate procurement policies.

   AEE's 2020 report suggests that to increase corporate access to and investment in renewable energy, the state might consider ensuring that companies are able to purchase renewable energy through green tariffs. Green tariffs allow customers to source their electricity from renewable sources through a fixed rate. Utilities in Indiana currently offer a variety of voluntary programs. Policymakers might also consider allowing companies to enter into onsite third-party PPAs. Policies to increase corporate access to renewable energy can be designed to meet the six Corporate Renewable Energy Buyers' Principles. In addition, it is prudent to incorporate corporate renewable purchase commitments into the IRPs that utilities submit to regulators to plan for resource needs over multiple decades. By integrating these renewable purchase commitments into the IRP process, regulators can avoid over-building resources and stranding generation assets.

Utility-Oriented Policies

Some states have created programs that aim to reduce greenhouse gas emissions and increase investments in clean energy resources. Indiana's clean energy portfolio standard (CPS) sets a voluntary goal of 10% clean energy by 2025. Vectren has set a 60% renewable energy by 2025 target. The utility expects that this will reduce the company's CO_2 emissions by 75% and save customers $320 million (Thiele 2020). IPL projects that its generation mix will be 53% clean energy (solar, wind, and energy storage) by 2039. While there is no state emissions standard, Indiana's utilities have established independent GHG emissions reductions goals. CenterPoint Energy recently announced an emissions reduction goal of 70% by 2035. NiSource is on track to reduce its GHG emissions from electricity generation by 90% of 2005 levels by 2030. American Electric Power (AEP) has set a goal to reduce CO_2 emissions 80% by 2050, and Duke Energy has a net-zero emissions by 2050 goal. To increase utility adoption of clean energy technologies, Indiana's policymakers might consider the following:

1. **Accelerating and Amending Renewable Portfolio Standards –** States can revisit existing RPS policies to increase targets and/or accelerate target dates to continue to spur the development of renewable resources and save ratepayers money. Additionally, states might add one or more carve-outs to further incentivize the development of distributed generation and offshore resources. Embedding an RPS within broader clean electricity or emissions standard can allow technological flexibility.

2. **Emissions Standards –** Emissions standards can take a technology neutral approach that looks at the total emissions of the utility portfolio and drives emissions down with a combination of renewables, traditional fuels, efficiency, and technological advances. Emissions reductions can be achieved through 1) a carbon portfolio standard approach, or 2) a market-based approach. A portfolio emissions standard sets emissions reduction targets to be achieved over time. This can be implemented through the IRP process or by establishing a maximum allowable rate of emissions per unit. Under a market-based approach, a state or a group of states might set a certain emissions reduction target, for example, 50% below 2005 levels by 2025. This reduction is achieved by the distribution of annual emission allowances that decrease to the point that the standard is met in 2025. One of the advantages of a market-based program is that it is designed to reduce emissions in the most economically efficient manner possible. Such a standard can also address other concerns such as pollution, asthma risk, environmental justice, and water use.

3. **Clean Peak Standards (CPS) –** Clean Peak Standards aim to increase the share of clean energy resources used to meet peak demand and decrease energy bills over the long-term by reducing peak demand in the hours when energy costs are highest. These objectives can be met through different policy options, including planning and procurement that focuses on peak demand; a moratorium on the construction of new peaking units or a phase out of existing units; incentives – including carve-outs in states with RPSs – for clean energy resources delivered during peak times; and/or adopting a new clean peak standard that sets a target for clean energy deliveries during peak times.

ELECTRIFICATION OF THE TRANSPORTATION SECTOR

An estimated 58% of new car sales will be electric by 2040. Therefore, a key part of building a modernized grid involves designing infrastructure that will facilitate easy connection of electric vehicles (EVs) to the grid. One of the most important barriers to increased adoption of EVs is the consumer's awareness of the availability of EV charging stations. Ultimately, drivers want to be sure that their car will get them where they need to go. The good news is that both supportive policies for developing charging infrastructure and technological advancements have eased "range anxiety."

Indiana offers a handful of incentives for alternative fuel vehicles, including EVs. Indiana Michigan Power and IPL offer EV charging rates. In 2021, Indiana Michigan Power began offering a rebate on Level 2 charging equipment for commercial, fleet, and multi-unit dwelling customers. House Bill 1168, enacted in 2021, established the Electric Vehicle Commission to assess Indiana's electric vehicle market and labor force. Also in 2021, Duke and AEP joined four other utilities in establishing the Electric Highway Coalition, a plan aimed at providing a seamless network of fast charging infrastructure.

The American Council for an Energy-Efficient Economy (ACEEE) publishes a State Transportation Electrification Scorecard that evaluates states' progress in electrifying transportation in six key policy areas and offers policy recommendations. Indiana is unranked in the 2021 report, however the report does provide an overview of the current state of the state's EV policies and infrastructure.

There are several opportunities to expand the market for EVs in Indiana, including:

1. **EV and EV Charging Equipment Financing and Financial Incentives –** Providing additional financial incentives and innovative financing options can help spur greater market penetration of EVs. Sales, property, and income tax credits are some of the simplest methods for addressing high up-front costs of EVs and EV charging equipment. While sales tax credits are typically applied at the time of purchase, property and income tax credits may do less to address upfront cost barriers as the credit is not applied at the time of purchase.[3] States have adopted other financial incentives including low-interest loans, grants, vouchers, and rebates. A handful of states qualify EV charging equipment under their property assessed clean energy (PACE) programs. A simple solution is to increase and expand existing tax credits to incentivize commercial, publicly available charging stations.

2. **Charging Infrastructure Plan –** Locating charging infrastructure is different from locating conventional fueling stations. While some drivers will need to charge more quickly, others will refuel when they are parked for longer periods of time, for example when shopping at the mall or going to work. Charging infrastructure plans should attempt to pair the appropriate level of charging (level 2 or direct current fast charging) with a reasonable amount of time a person will be at that location. Legislation could direct a state agency to develop an infrastructure plan through a stakeholder process. Indiana's existing registration fee for EVs could help fund these efforts. For example, in Washington a portion of each EV registration fee is used to fund charging infrastructure development across the state.

3. **Parking Infrastructure Requirements –** In tandem with the development of a statewide plan, legislation could set requirements for EV parking infrastructure. Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, there must be at least one EV charging space. Legislation could also incentivize utilities to develop make-ready locations. These locations supply power to the point where a utility or third-party developer might install an EV charging station. Indiana's statewide building energy code could also be updated to include requirements for EV charging infrastructure.

NEWS

- July 1, 2021: As Utilities Risk Missing Carbon Reduction Targets, Analysts Stress Need for Organizational Change
- June 30, 2021: Indiana-based Energy Company Expanding Operations in Offices across the Globe
- June 23, 2021: Toyota Mobility Foundation, Energy Systems Network, May Mobility Inaugurate Autonomous Shuttle Service in Indianapolis
- June 22, 2021: AES Indiana Gets Approval for Hardy Hills Solar Project
- June 22, 2021: Electric Truckmaker Nikola Buys $50 Million Stake in Indiana Hydrogen Plant
- June 15, 2021: Solar Capacity Doubles in Indiana, More Big Projects Proposed
- May 5, 2021: Purdue Extension Focuses on Renewable Energy
- April 11, 2021: Duke Energy Division Planning $180M Indiana Solar Farm
- March 27, 2021: NIPSCO Utility Adds More Wind, Solar Power to Its Portfolio
- February 23, 2021: CenterPoint Energy Seeks Approval for 400 Megawatts of Renewable Energy Serving Southwestern Indiana
- February 15, 2021: Twelve States Commit to Electricity Planning for More Efficient, Customer-Focused Grid
- July 22, 2020: Report: Indiana Will Benefit from Renewable Energy Sources as Fossil Fuels Phase Out

OTHER RESOURCES

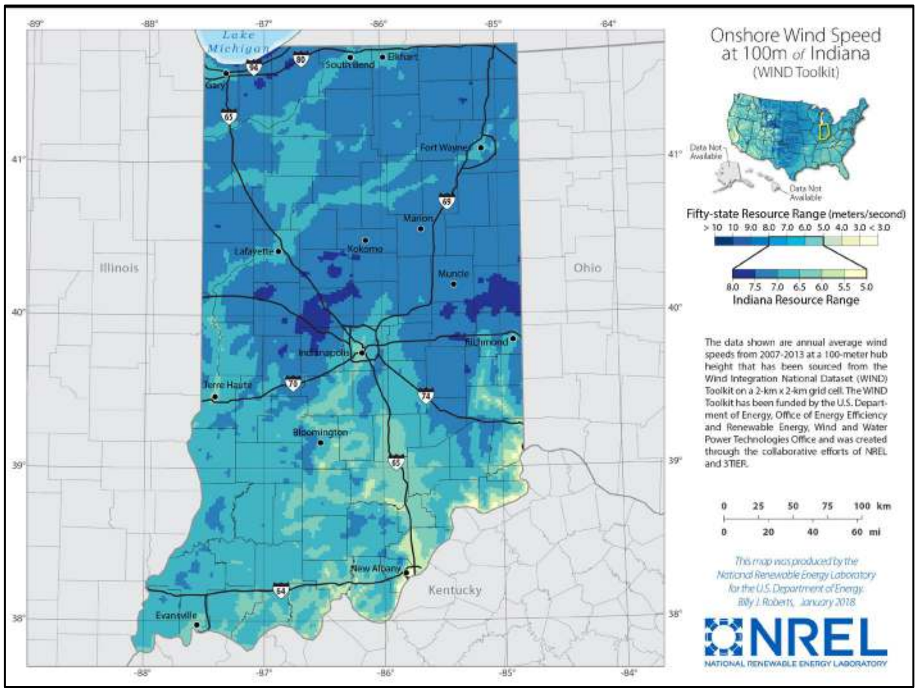
- Indiana Office of Energy Development: https://www.in.gov/oed/
- Hoosier Environmental Council: https://www.hecweb.org/

[3] A study by the Congressional Research Service suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles.

- American Clean Power Association, Indiana State Fact Sheet: https://cleanpower.org/wp-content/uploads/2021/05/Indiana_clean_energy_factsheet_Q2-2021.pdf
- The American Council for an Energy-Efficient Economy State and Local Policy Database, Indiana: https://database.aceee.org/state/indiana
- The Database of State Incentives for Renewables and Efficiency, Indiana: https://programs.dsireusa.org/system/program?fromSir=0&state=IN
- U.S. Department of Energy's Alternative Fuels Data Center, Indiana: https://www.afdc.energy.gov/states/in
- U.S. Energy Information Administration, Indiana: https://www.eia.gov/state/?sid=IN
- SPOT for Clean Energy, Indiana: https://spotforcleanenergy.org/state/indiana/

INDIANA'S WIND RESOURCE

WIND https://windexchange.energy.gov/states/in



Our Resources

CNEE Homepage: https://cnee.colostate.edu/

The SPOT for Clean Energy: https://spotforcleanenergy.org/

The Advanced Energy Legislation (AEL) Tracker: https://www.aeltracker.org/

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