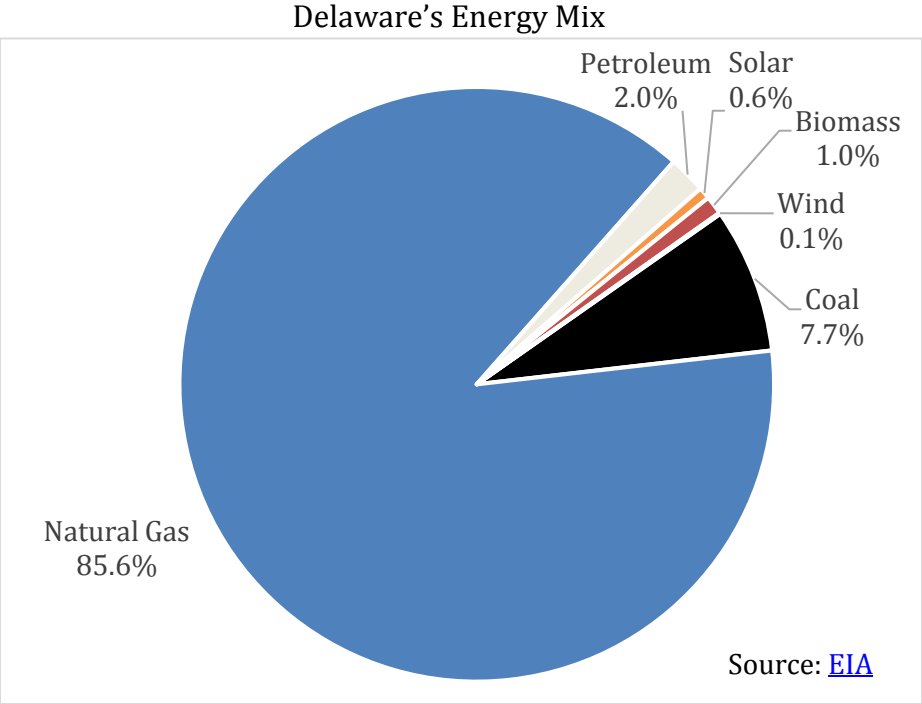
State Brief: Delaware

Background

Delaware's energy mix is dominated by natural gas. The state is unique in that energy consumption in Delaware is much greater than production. In fact, Delaware ranks very low in energy production, higher only than the District of Columbia. The state imports approximately one-third of its electricity.

The five members of Delaware's bipartisan Public Service Commission (PSC) are appointed by the Governor, with Senate confirmation. The state is under unified Democratic control: Democrats have the majority in both chambers of the General Assembly, and Democratic Governor John C. Carney took office this year.



The Climate Action in Delaware: 2016 Progress Report identifies the actions taken by state agencies to address climate change.

Policy Strengths and Opportunities[1]

An important framework for policymakers to consider, the notion of "policy stacking" [2] was developed at the National Renewable Energy Laboratory (NREL). The basic idea behind policy stacking is that there is an interdependency and a 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 in order to expand an existing clean energy market by encouraging or facilitating technology uptake by additional market participants.

A simple 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, policies to address interconnection and stand-by rates should be adopted before financial incentive programs are implemented.

[1] For more information on policy opportunities, please visit the SPOT for Clean Energy. For more information on specific policy actions related to these opportunities, please review the *Clean Energy Policy Guide for State Legislatures*.
[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.

Clean Energy Financing

Distributed generation (DG) provides localized generation that serves a specific part of the grid. It may include generation serving a specific residence or business, a neighborhood, or a region served by a substation. DG has the benefit of reducing stress on large transmission infrastructure by providing distribution level power (as opposed to central generation). Because small-scale renewable energy systems require large upfront investments, overcoming the upfront cost barrier is arguably the biggest challenge to clean energy deployment at the consumer level. Financing is key; and many states provide financing and financial incentives to spur adoption of these technologies.

Delaware is a member state of the Regional Greenhouse Gas Initiative (RGGI) and directs the majority of RGGI proceeds to energy efficiency and renewable energy projects. The Delaware Sustainable Energy Utility (DSEU) is a state-run, non-profit that facilitate these projects.

To promote wide-spread deployment of DG, there are a handful of policy opportunities in Delaware.

1. On-Bill Repayment or On-Bill Financing – On-Bill Repayment (OBR) and On-Bill Financing (OBF) are mechanisms for financing residential and small commercial clean energy technologies in buildings. The source of financing is the main design component separating OBR from OBF. Financing can come from the utility (OBF), or through a private entity (OBR). In either case, the customer's costs of retrofits or equipment are amortized and combined with savings from the measures on the utility bill. Legislation to enable OBR or OBF should include, at minimum, the following: whether "bill neutrality" – an equal or lower monthly bill post-retrofit – is required; and language authorizing the utilities commission to implement the program. Legislation may include a credit enhancement fund that encourages lending to customers that would otherwise not qualify for a loan due to a low credit score. Reducing the risk to lenders can keep interest rates lower. Legislation can tie loans together with weatherization upgrades for low-income customers.

2. Property Assessed Clean Energy (PACE) – PACE is a financing mechanism used by local governments that allows property owners to finance energy efficiency and renewable energy improvements through their property tax payment. The repayment of qualified energy improvements is done via a voluntary property tax assessment collected by local governments, just as other public infrastructure investments are financed. The financing for PACE projects may be provided by municipal bonds or third-party capital secured by the property assessment payments. Repayment responsibility transfers to the next owner if the property is sold. While PACE programs can be designed for both the residential and the commercial markets, residential PACE takes a much more committed and engaged approach on the part of the state. Commercial PACE programs have been expanding rapidly in recent years with a robust market evolving around these programs. State legislative authority must be in place to allow local governments to establish energy financing districts.

3. Green/Infrastructure Bank - A green bank blends public and private capital to fund the upfront cost of clean energy improvements. The intent is to reduce the risk for the investor and to scale the market for projects. Sometimes these banks will attempt to address a limitation in the private lending sector – for example, while most bank commercial loans are 5-10 years, the NY Green Bank extends these terms for 20 years and assumes the risk of the investment on the back end. In this way, the public bank is partnering with the private lending institutions to address barriers for businesses. These entities can be housed within an existing state agency with administrative, rule making, and underwriting authority.

4. Combined Heat and Power Incentives – Delaware offers loans, rebates, and tax credits for solar and other DG technologies. To increase the deployment of combined heat and power, the state's offerings could be expanded to include these technologies.

Grid Modernization

In the last two decades, digital technologies have been developed that enable utilities to better manage the grid and also 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. This can make the operational side of the utility more efficient. On the customer's side of the meter, advanced metering infrastructure, dynamic pricing, and other emerging technologies allow an exchange of information and electricity between a consumer and their electric provider. Grid modernization will be associated with greater consumer choice, allowing customers to meet their energy priorities by producing their own energy or to selecting to receive innovative energy efficient or clean energy services from different providers.

Grid modernization efforts compliment other policies such as demand response policies, customer data management, smart metering infrastructure, electric vehicles and others. Policy approaches around grid modernization should be seen as an umbrella to put in place a structure that supports and ties together these other individual policy initiatives.

One of Delaware's greatest policy strengths lies in grid management and modernization. In the latest Grid Modernization Index, Delaware was ranked fifth in the nation overall for state support, customer engagement, and grid operations. Delaware is unique because it has achieved a 68% Advanced Metering Infrastructure (AMI) penetration without receiving ARRA grid modernization funds. While Delaware demonstrates leadership in this area, and in line with the notion of policy stacking, discussed above, there are supportive policies that could advance in-state modernization efforts.

1. Update the state's energy and / or grid modernization strategy through a stakeholder process that incorporates the viewpoints of utility customers, utilities regulators, utilities, and other stakeholders. Grid modernization strategies, while recognizing regional and inter-state diversity and avoiding one-size-fits-all plans, should also take a holistic view of the electric system.

2. Customer Data Access – Delaware does not have clear state policies governing customer data access and privacy protections. Important aspects of legislation or rules addressing this include the following: clarification of who owns the energy data associated with consumer energy usage; protections for customer privacy; an outline of the process for allowing third parties direct access to data; policy to promote access to the highest resolution of data by third parties. The state could establish customer access to energy data through the Green Button Connect program, for example.

3. Improve the state's energy storage policies. The adoption of incentives for or a mandate to integrate a certain amount of energy storage on the grid (see below) would enhance modernization efforts. Enhancing clean energy financing (above) and electric vehicle policies (below), also improves the chances of successful grid modernization.

Electrification of the Transportation Sector

One of the most important barriers to increased adoption of electric vehicles (EVs) is their higher up-front cost as compared to a similar conventionally-fueled vehicle. In addition, there has been a complicated relationship between increased adoption of EVs and the availability of EV charging stations. Put simply, consumers want to be sure 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." For instance, the most recent GM Bolt has an estimated range of 240 miles.

Retail electricity customers in Delaware with at least one grid-integrated EV may be able to earn kilowatt-hour credits for energy returned to the grid from the EV's battery at the same rate the user pays to charge the battery. Additionally, the Delaware Department of Natural Resources and Environmental Control offers rebates for EVs and for commercial or residential Electric Vehicle Supply Equipment (EVSE). There are policy opportunities to further encourage and prepare for increased market penetration of EVs.

1. Development of State Charging Infrastructure Plan – Locating charging infrastructure is different than locating conventional fueling stations. For the most part, EVs are cars used for commuting and local trips. Furthermore, while one fuels a conventional vehicle when they are going somewhere, stopping at a gas station for the specific purpose of filling up, a driver of an EV is generally looking to refuel when they are stopping somewhere: when going shopping, going into a restaurant, or going to work. Charging infrastructure plans should target these types of locations and attempt to pair the appropriate level of charging infrastructure with a reasonable amount of time a person may be stopped at that location.

2. Financing and Financial Incentives – The provision of financial incentives and innovative financing options can increase installations of charging stations. States have adopted a number of financial incentives including income and property tax credits, sales tax credits, low-interest loans, and grants. A handful of states qualify EV charging stations under their property assessed clean energy (PACE) programs.

3. Building Standards and Codes – Many states and local governments are updating building standards and codes to provide guidance and standards for the installation of charging equipment. Building codes might also be updated to require either higher voltage pre-wiring or the installation of charging infrastructure.

4. Parking Infrastructure Requirements and Restrictions – Some states have adopted permitting standards for parking lots, requiring, for instance, that for every 100 parking spaces, one EV charging spot must be provided. States have also passed Anti-ICEing Legislation. "ICEing" occurs when an internal combustion engine (ICE) car is parked in an EV Only parking space. Some states have passed laws establishing penalties for non-EVs parking in EV only parking spots.

5. Rental Properties and HOAs – Legislation can also make it easier for lessees, renters, and members of a homeowners' association (HOA) to install charging equipment. Typically, lessors are directed to allow lessees, at their own cost, to install charging systems. In some cases, lessees are required to maintain additional insurance for the system. Legislation related to HOAs typically directs Associations to avoid restrictions that would inhibit the installation of charging equipment.

6. Utility-Run Programs – Charging rate incentives and time of use rates can reduce the cost of electricity used for charging. Eligibility for a charging rate incentive may be limited to users with separate or advanced metering systems. Some utilities also offer financial incentives for the purchase of an EV charging system. In some states, enabling legislation may be required to direct or authorize a public utilities commission to allow regulated utilities to offer and recover costs for these incentives.

Energy Storage

Energy storage offers a unique opportunity to dynamically manage supply and demand to maximize the value of grid resources. By deploying storage in strategic locations, utilities can more effectively manage their energy portfolios. First, storage can dispatch power to better integrate intermittent resources like renewable energy. Second, it provides management of intermittent demand – helping to flatten peak demand requirements for the utility. Third, the responsiveness of energy storage can allow the utility to implement voltage regulation and other ancillary services, useful for improving system efficiency. Finally, energy storage can help the commercial sector avoid costly "demand charges." As utilities around the country consider extending demand charges to the residential sector, this will become an even more important issue.

Storage provides multiple benefits to both the customer and the utility. State planning and regulatory policies can help maximize these benefits through a combination of 1) establishing a framework for easy integration of energy storage into the grid and 2) establishing a marketplace that monetizes the benefits of energy storage for cost effective investment.

The Delaware Energy Plan includes a recommendation to fund research and development of additional energy storage technologies. In 2016, Sunvault Energy and Edison Power Co. entered into an agreement to develop a solar energy generation and battery storage project in Delaware. The project will include a total of 484 kilowatts (kW) of solar photovoltaic panels and 600 kW of storage on three firehouses. There are several opportunities for developing supportive state policies:

1. Consider adding a procurement target or requirement for energy storage with a documented process for periodic review of progress towards that goal.

2. Instruct the PUC to evaluate the value of energy storage in various 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 be 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 utilities to evaluate the cost effectiveness of "non-wires" alternatives (NWAs) to large generation investments that are more traditional utility avenues for meeting demand. Or, states may want to require utilities to develop a distribution investment plan that identifies the locations on the distribution system where energy storage or other distributed resources would offer the system the greatest value.

4. Provide incentives for customers to purchase storage to both manage their electric load and store locally produced renewable energy. Allow utilities that provide incentives to customers to install smart meters that enable dynamic energy management from multiple distributed battery systems.

5. Adopt clear data access policies that allow third parties to provide energy management services based on signals from the utility to greatly increase the value of efforts to monetize the value stream offered by energy storage.

6. Provide an option for utility customers (targeted at commercial users) to pay an additional charge to be included in a "high reliability zone" provided through a combination of distributed generation and energy storage – forming a utility integrated "micro-grid".

7. Provide financing for commercial businesses to install energy storage that will reduce their demand charges from the utility.

2017 Energy-Related Legislation Introduced by Attendee

Bill Number	Bill Summary	Bill Status	Sponsor
HB 17-127	Gives Delaware's Public Service Commission the authority to assess the impact of an electric transmission project and revoke a certificate in the future for good cause.	Passed House	Paradee
HB 17-226	Appropriates funding for a nonprofit public/private partnership comprised of leaders in the public, business and the community to build a stronger entrepreneurial environment in the State. The Public/Private Partnership will focus on leveraging private resources to improve business recruitment, retention and expansion, identify and develop a talented workforce, connecting with the global economy and building a stronger entrepreneurial environment. To ensure public accountability the Partnership will submit to the Governor and the General Assembly tax returns, financial statements, organizational polices and will make available for inspection meeting minutes. To make the most efficient use of available resources, this legislation eliminates the Delaware Economic Development Office because the public/private partnership will be conducting business attraction and development functions formerly performed by that Office.	Enacted	Paradee
SB 17-113	Authorizes the creation of a Delaware Voluntary Property Assessed Clean Energy (D-PACE) program to establish a clean energy financing program for the installation of energy efficiency technologies and clean energy systems for qualifying commercial real properties.	Introduced	Paradee
SB 17-80	Replicates and extends to electric and natural gas utilities the same authority that has previously been granted to water utilities. This	Introduced	Paradee

	authority allows for the implementation of an interim rate mechanism in an effort to reduce volatility and the costs to electric and natural gas customers. Requires annual audits and annual reconciliations and empowers Staff for the Public Service Commission and the Delaware Public Advocate to review such expenditures and raise concerns with the Commission should they exist.		

Other 2017 Energy-Related Legislation

Only bills that have passed both chambers are set out below. For all 2017 energy-related legislation, visit aeltracker.org.

Bill Number	Bill Summary	Bill Status
SB 17-103	Extends the Clean Air Act Title V Operating Permit Program annual fees for facilities in Delaware.	Enacted

News

- August 28th, 2017: Delaware Governor Orders Creation of Offshore Wind Working Group.
- August 25th, 2017: Delaware Agrees to More Aggressive Greenhouse Gas Reduction Goals.
- August 14th, 2017: Big Changes Planned for Economic Development Efforts in Delaware.
- August 10th, 2017: DNREC Division of Energy & Climate Announces Launch of Electric Vehicle Delaware Workplace Charging Program.
- June 29th, 2017: College Celebrates Completion of Statewide Solar Energy System.
- June 15th, 2017: Delaware Technical Community College Expands Sustainability Success with 2.1 Megawatt Solar Project.

Other Resources

- American Council for an Energy Efficient Economy: On-Bill Energy Efficiency
- Energize Delaware: https://www.energizedelaware.org/
- The American Council for an Energy-Efficient Economy State and Local Policy Database, Delaware: http://database.aceee.org/state/delaware
- The Database of State Incentives for Renewables and Efficiency, Delaware: http://programs.dsireusa.org/system/program?state=DE
- U.S. Energy Information Administration, Delaware: https://www.eia.gov/state/?sid=DE
- SPOT for Clean Energy, Delaware: https://spotforcleanenergy.org/state/delaware/