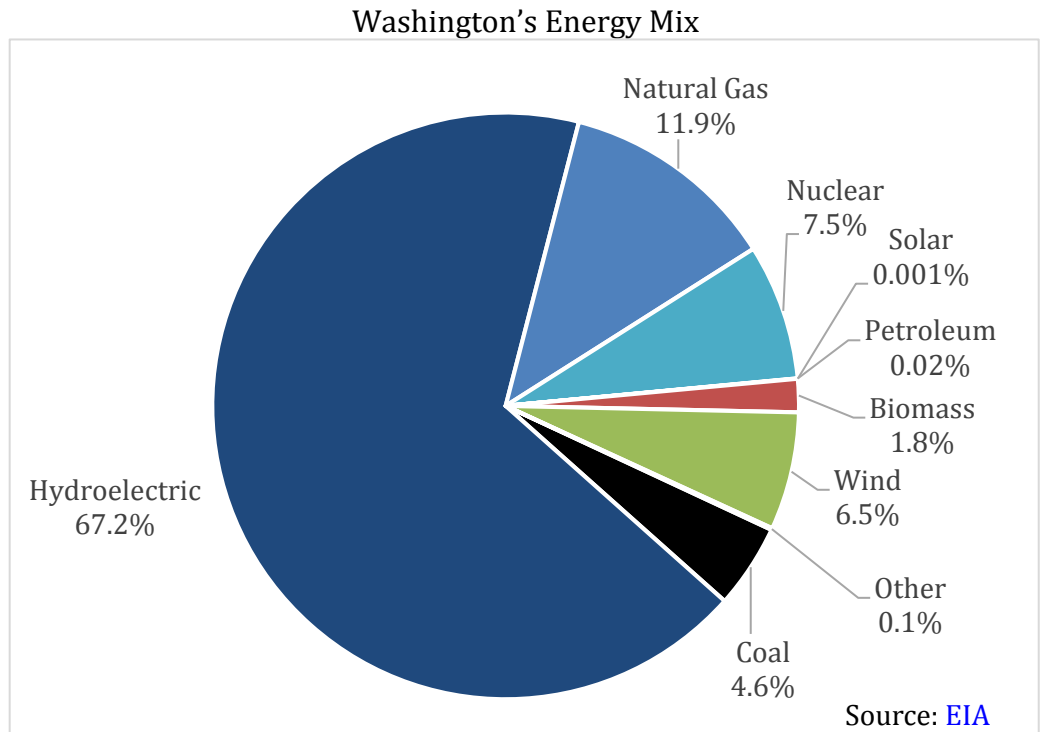


Background

Washington's energy mix is dominated by hydroelectric power. In fact, with a total generating capacity of 6,890 megawatts (MW), the Grand Coulee Dam on Washington's Columbia River is the largest hydroelectric plant in the United States.

Washington's total energy consumption ranks [among the top 20 states](#). Its highest consuming sectors are the residential and transportation sectors. However, the state has one of the six lowest total energy [expenditures](#) per capita. In 2015, Washington had the lowest average residential electricity prices and the lowest average retail electricity price across all sectors.



Washington is under unified party control with Democratic majorities in the House and Senate; Governor Jay Inslee took office in 2013. The three members of the [Utilities and Transportation Commission \(UTC\)](#) are appointed by the Governor.

[Initiative 732](#), which would have created the United States' first carbon tax, was rejected by voters last November. Washington offers significant incentives for energy efficiency investments. The state government leads by example by requiring energy-efficient public buildings and fleets, benchmarking energy use, and encouraging the use of energy savings performance contracts. Washington is also one of the few states to [require commercial building energy use disclosure](#). Research focused on energy-efficiency is conducted at the Smart Buildings Center and Washington State University's Energy Program.

Policy Strengths and Opportunities¹

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

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>.

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.

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.

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

1. **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.
2. **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.
3. **DG and Solar Incentives** – Washington offers revolving loans and tax credits for solar and distributed generation technologies. To increase deployment of DG, the state’s offerings could be expanded to include performance-based incentives. A performance-based incentive may take the form of a power purchase agreement, a standard offer payment, or a bill credit providing a certain dollar amount per kilowatt-hour (kWh) of power generated. By providing low interest financing to an individual utility customer, the state can shift the upfront payment for generation to one that reflects typical utility costs – a monthly payment over time.
4. **Combined Heat and Power Incentives** – Washington offers loans 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.

In terms of state efforts to modernize the grid, and although Washington is the home of many innovative technology companies, the state is in middle of the pack. In the latest [Grid Modernization Index](#), Washington placed 29th overall for state support, customer engagement, and grid operations. However, Washington demonstrates leadership with their clean energy requirements, which earned them a perfect score in that subcategory. Policymakers could consider the following supportive policies to enhance grid modernization efforts:

1. Customer Data Access – Update 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.
2. Require that utilities' integrated resource plans include plans to enhance cybersecurity, integrate distributed energy resources (including electric vehicles and energy storage), increase demand response and/or demand-side management (DSM) programs, and measure and report on the results of grid modernization efforts.
3. Update the renewable portfolio standard (RPS), set to expire in 2020 and/or the Energy Efficiency Resource Standard to not only increase the proportion of clean resources comprising the state's energy mix, but also to contribute to the modernization of the power grid.
4. Improve the state's energy storage policies. The adoption of 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.

Another challenge with EVs is that 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. Washington has taken positive action toward addressing these nuances and

many other issues with their [Electric Vehicle Action Plan](#). The state also provides guidance for local communities and individuals as they prepare to become “[PEV-ready](#).”

While Washington offers tax credits and other incentives for EVs and [EV Supply Equipment \(EVSE\)](#), policy could be updated to further encourage and prepare for increased market penetration of EVs.

1. Parking Infrastructure Requirements – 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, one EV charging spot must be provided.
2. EV Financing and Financial Incentives – The provision of financial incentives and innovative financing options can help spur greater market penetration of EVs. Sales and income tax credits are one of the simplest methods for addressing higher up-front costs. Washington’s [existing tax credit](#) seeks to incentivize the purchase of EVs. A [study](#) by the Congressional Budget Office suggests that tax credits are important tools for ensuring increased adoption of alternative-fueled vehicles. States have adopted a number of other financial incentives including grants, vouchers, and rebates that policymakers can consider.

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.

Washington does not have a procurement target or goal for energy storage. However, the state’s incentives and other policy supportive of energy storage are encouraging utilities in the state to pursue energy storage technologies and develop storage projects. For instance, UniEnergy Technologies just installed the [world’s largest containerized flow battery](#) on the grid in Snohomish County.

There are several opportunities for developing supportive state policies:

1. Amend interconnection policies to ensure that storage can connect to the grid through a transparent and simple process. [IREC](#) has produced a series of interconnection protocols that states may easily adopt.
 - a. In the latest [Freeing The Grid](#) report, Washington received a “B” for interconnection rules. The [best practices for interconnection](#) could be established in statute, or legislation could provide an instruction to the PSC to implement these best practices.
2. Instruct the utilities commission 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 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. 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.
 - a. Policies governing [customer data access](#) and privacy protections could be updated. 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.
5. Provide financing for commercial businesses to install energy storage to reduce their demand charges.

2017 Energy-Related Legislation Introduced by Attendee

Bill Number	Bill Summary	Bill Status	Sponsor
SB 17-5425	Strengthening funding for oil spill programs in Washington by increasing revenue to the oil spill prevention account.	Introduced	Carlyle
SB 17-5462	Concerning oil transportation safety.	Introduced	Carlyle
SB 17-5509	Promoting an equitable clean energy economy by creating a carbon tax that allows investment in clean energy, clean air, healthy forests, and Washington's communities.	Introduced	Carlyle
SB 17- 5098	Concerning high hazard flammable train speed limits in certain urban areas.	Introduced	Carlyle
SB 17-5846	Establishing minimum crew size on certain trains.	Introduced	Carlyle

Other 2017 Energy-Related Legislative Activity

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
HB 17-1086	Promoting the completion of environmental impact statements within two years.	Enacted
HB 17-1809	Concerning tax credits for clean alternative fuel commercial vehicles.	Enacted
HB 17-5128	Allowing incremental electricity produced as a result of certain capital investment projects to qualify as an eligible renewable resource under the Energy Independence Act.	Enacted
HB 17-5261	Concerning irrigation district authority.	Enacted
HB 17-5470	Advancing the development of renewable energy by improving the permitting process for geothermal resources exploration.	Enacted
HB 17-5713	Creating the skilled worker outreach, recruitment, and key training program.	Enacted
HB 17-1144	Amending state greenhouse gas emission limits for consistency with the most recent assessment of climate change science.	Passed both Chambers
HB 17-1171	Directing the completion of a study of certain environmental impacts, including ultrafine particulate emissions, associated with aircraft traffic in areas impacted by airport operations.	Passed both Chambers
HB 17-1225	Requiring planning for the availability of mineral resources for future generations under the Growth Management Act.	Passed both Chambers
HB 17-1330	Extending the business and occupation tax exemption for amounts received as credits against contracts with or funds provided by the Bonneville Power Administration and used for low-income ratepayer assistance.	Passed both Chambers
HB 17-1048	Promoting a sustainable, local renewable energy industry through modifying renewable energy system tax incentives and providing guidance for renewable energy system component recycling.	Passed both Chambers

HB 17-1622	Concerning the state building code council.	Passed both Chambers
HB 17-1894	Reinstating tax preferences for certain high-technology research and development.	Passed both Chambers
SB 17-5939	Promoting a sustainable, local renewable energy industry through modifying renewable energy system tax incentives and providing guidance for renewable energy system component recycling.	Enacted
HB 17-1266	Concerning petroleum storage tank systems.	Enacted
HB 17-1466	Extending the expiration date of the public utility tax exemption for certain electrolytic processing businesses.	Passed both Chambers

News

- August 30th, 2017: [New Device Could Turn Heat Energy into a Viable Fuel Source.](#)
- August 29th, 2017: [Inslee Names Roselyn Marcus as Interim Chair of Energy Facility Site Evaluation Council.](#)
- August 24th, 2017: [Environmental Advocates Call for Bellevue-Based Puget Sound Energy's Closure of Montana Coal Plant.](#)
- August 23rd, 2017: [Washington's Electric Companies in Compliance with State Renewable Energy Requirements, Commission Finds.](#)
- August 19th, 2017: [Inside UW's Cutting-Edge Clean Energy Testbeds, Researchers Seek Breakthroughs to Help the Planet.](#)
- August 17th, 2017: [As Chair Steps Down, Energy Council Grants Another Extension For Vancouver Oil Terminal.](#)
- August 14th, 2017: [WSU Researchers Receive \\$2.3M to Improve U.S. Power Grid Design.](#)
- August 7th, 2017: [Opportunity Abounds as Washington Builds the Modern Electricity Grid.](#)
- July 13th, 2017: [Microsoft Gets OK for Buying Green Power Outside Puget Sound Energy.](#)
- June 12th, 2017: [French Firm to Build State's Largest Solar Project North of Richland.](#)

Additional Resources

- Washington State Energy Office: <http://www.commerce.wa.gov/growing-the-economy/energy/washington-state-energy-office/>
- American Council for an Energy Efficient Economy State and Local Policy Database, Washington: <http://database.aceee.org/state/washington>
- The Database of State Incentives for Renewables and Efficiency, Washington: <http://programs.dsireusa.org/system/program?state=WA>
- U.S. Energy Information Administration, Washington: <https://www.eia.gov/state/?sid=WA>
- SPOT for Clean Energy, Washington: <https://spotforcleanenergy.org/state/washington/>