

## Weatherization Assistance Program Success Story

Glenda and her husband Jerome have lived in their home on the north side of Spokane for 44 years. Maintaining a 107-year-old home on a fixed-income can be challenging, especially during the winter when heating bills are at their highest.

Luckily, they heard about the [Avista Senior Grant Program](#) at an energy fair and the [Weatherization Assistance Program](#) from a Spokane Neighborhood Action Partners energy specialist.



To find out more about what SNAP was able to do for them, read [the whole story](#).



## Washington Shows Major Improvement in GridWise Ranking

The GridWise Alliance, a national organization focused on modernizing the nation's electricity system, issued their 4th annual *Grid Modernization Index* ranking the fifty states on "the degree to which they are moving toward a modernized electricity grid". The 2017 ranking showed Washington state moving up from 29th to 17th in the ratings. The Alliance made particular note that "an aggressive Clean Energy Fund is supporting improvement to the grid" in boosting the state's rankings. The ranking system focuses on three major areas – grid operation, customer engagement, and state support – with more than sixty individual items considered. A fully copy of the report is available at the GridWise Alliance [website](#).

In addition to successful demonstration and deployment projects funded by the grid modernization portion of the state's [Clean Energy Fund](#), the State Energy Office has been working with the National Governors Association on their Grid Modernization Policy Academy. Academy staff from Commerce, the Utilities and Transportation Commission and the Governor's office recently invited a group of utilities and industry representatives to a roundtable meeting to discuss how the state can better support ongoing and future grid improvement efforts.

## Washington's Increasing Role in Grid Modernization

Earlier this year the American Jobs Project, a nonprofit, nonpartisan think tank, issued a study analyzing the potential for jobs and economic development through grid modernization in Washington state. [The Washington Jobs Project – A Guide to Creating Jobs in Grid Modernization](#) was conducted with the assistance of the Clean Energy Institute at the University of Washington and the Institute for Energy Studies at Western Washington University. The study concluded that with strong policy support our state's grid modernization sector could create an additional 13,800 jobs by 2030. The study also found that we are well positioned as a state to benefit not only from in-state grid opportunities but also from rising global markets as well. It underscored Washington's strong position in developing the Internet of Things, coupled with our robust innovation ecosystem, as key elements in developing those opportunities.

The Washington State electricity grid is, of course, not confined to the boundaries of our state. We operate our system within the extensive [Western Interconnection](#). It spans most of the Western U.S. and Canada, and within the narrower geography of the [Northwest Power Pool](#). Smart Grid Northwest (SGNW) is the NW region's nonprofit organization. It is made up of utilities, the electricity industry and government representatives. It is focused on how education, policy and planning can be united to promote an improved grid. Commerce

most recently has been working with SGNW on their successful Northwest Demand Response and Energy Storage Summit, which was held in September 2017.

## Dept. of Commerce's Solar Plus Project

OLYMPIA—Commerce has received another year of funding from U.S. Department of Energy to continue its efforts with the Solar Plus project. The project is expected to triple the solar capacity of Washington and Oregon and add 5,000 jobs to the economy.

The project is a shared regional effort in Washington and Oregon. It has brought together utilities, solar advocates, environmental justice advocates and state agencies. They are working towards speeding up the solar market while maximizing additional social and technical benefits.

Because of the work Commerce and its regional partners have accomplished, U.S. DOE authorized an additional \$780,000 to continue the work. Participating in the project are:

- Avista Corporation
- Bonneville Environmental Foundation
- Bonneville Power Administration
- Central Electric Cooperative
- Energy Trust of Oregon
- Eugene Water and Electric Board
- Front and Centered
- Northwest Energy Coalition
- Oregon Department of Energy
- Oregon Public Utility Commission
- Oregon Solar Energy Industries Association (OSEIA)
- Puget Sound Energy

- Puget Sound Sage
- Renewable Northwest
- Seattle City Light
- Snohomish Public Utility District
- Solar Installers of Washington
- Spark Northwest
- Umatilla Electric Cooperative
- Verde
- Washington Department of Commerce
- Washington State University Energy Program
- Washington Utilities and Transportation Commission

The strategies for increasing solar generation in the state include:

- Developing a common understanding of solar valuation and net metering issues.
- Defining and deploying projects that increase community and grid resilience.
- Increasing equity and education related to solar.
- Planning and deploying community solar programs.
- Coordinating and connecting on workforce development.
- Informing and sharing policy discussions.

Content and resources related to Solar Plus are available at <http://solarplusnw.org/>. More information regarding the federal award for Solar Energy Evolution and Diffusion Studies 2 can be found at <https://www.energy.gov/eere/solar/solar-energy-evolution-and-diffusion-studies-2-state-energy-strategies-seeds2-ses>

Commerce's contact for the project is Jasmine Vasavada at 360-725-3122

# Energy Headlines and Videos

## **Alternative Fuel and Electric Vehicles**

[How Electric Cars Can Make Your Electricity Cheaper & More Reliable](#)

## **Carbon**

[Energy-Related Carbon Dioxide Emissions Decreased in Most States from 2005 to 2015](#)

[Green Cash, Carbon Tax: What to Expect at Paris Climate Meet](#)

[Tribes, Environmental Groups Likely to Unite Behind Carbon Tax Initiative for 2018](#)

[More Details Emerge in Oregon's Cap-And-Trade Climate Program](#)

[Rep Drew MacEwen – Washington State Can Have Energy Independence without Economic Damage from Carbon Tax](#)



## **Climate**

[Bitcoin Could Cost Us Our Clean-Energy Future](#)

[The Climate Post: Moody's Warns Cities, States to Prepare for Climate Change Risks](#)

## **Coal**

[Columbia River Coal Terminal Backers File Second Suit against Washington State](#)

## **Energy**

[Survey Shows Strong Support for Columbia Generating Station](#)

[GE Cuts 12K Power Jobs as Demand, Renewables, Skew Market](#)

[Oregon: PacifiCorp's \\$3.5 Billion Wind Plan Gets PUC Blessing, with Caveats](#)



## **Other**

Energy efficiency can help address childhood asthma—[video 1](#) and [video 2](#)

[See how Battelle stacked up this year running our national laboratory](#)

[Modernizing the Columbia River Treaty Regime](#)

[Oregonians Come to Terms with Pumping Their Own Gas](#)

# Energy Price Overview



Bonneville Dam - Image by Portland Corp of Engineers

## River & Snow Pack Info

Observed November stream flow at The Dalles: 120% of average.

Observed November precipitation above The Dalles: 37% of average.

Est. 2017 Final runoff at The Dalles (Jan.—August): 137.9 million acre-feet, 136% of normal

Estimated regional snow-pack: N/A

Federal hydropower generation in November 6,765 aMW, 5-year average: 7,346 aMW.

Reservoir content (Libby, Hungry Horse, Grand Coulee, Dworshak): November 81.2%, 5-year average: 80.2%.

**Petroleum:** Crude oil prices rose (again) during the month of December as investors became secure in the knowledge that the global supply vs demand balance will continue to improve for a while. Another contributing factor is the 5+% decline in the US dollar during 2017. The average West Texas Intermediate price was about \$59 per barrel, while international Brent averaged approximately \$65 per barrel. The widening price gap between WTI and Brent reflects the rebounding US shale production and associated regional oil oversupply.

**Transportation Fuels:** Transportation fuel prices at the national level decreased during December. Most of the price decrease was in early December. December and January are usually the time when consumers see the lowest gasoline prices. The national average gasoline price was 6 cents per gallon lower relative to the last week of November. National gasoline and diesel were \$2.48 and \$2.91 per gallon respectively. Washington state average gasoline price for the same period decreased by 7 cents, relative to the last week of October, to \$2.92 per gallon, while diesel decreased 5 cents to \$3.15 per gallon.

**Natural Gas:** The average Henry Hub natural gas price de-

creased slightly. During December, the average price for month-ahead (Jan.) NYMEX natural gas was down 26 cents at \$2.79 per MMBtu. Locally, the average December natural gas spot price at the Kingsgate hub decreased to \$2.51 per MMBtu. National gas storage levels decreased 206 Bcf last week and are at 3,126 Bcf, about 5.8% below the 5-year natural gas storage average for this time of the year. Gas storage in the Pacific region was 13.5% below the 5-year average.

**Electricity:** Moderate temperatures along the west coast kept spot market electricity prices relatively unchanged during December. Our very wet November and early December brought river flow and hydro generation on the Columbia and Snake River systems to above average levels (see River Data and Power Flow tables). The Mid-Columbia spot market price was up nearly 10% and averaged \$28.6 per MWh in December. Federal hydropower generation was 6,765 aMW during November (latest report month).

# Energy News

**Local and regional:** A Thurston County Superior Court judge invalidated major portions of the Dept. of Ecology clean air rule, requested by Gov. Inslee, to cut greenhouse gas emissions. The state plans to appeal the decision. Puget Sound Energy was granted a 1 percent electric rate increase by the Utilities and Transportation Commission, and a 3.9 percent decrease in natural gas rates.

Details emerged as legislators worked on an Oregon cap-and-trade system to reduce GHG emissions. The legislation, if passed, would put an overall cap on state greenhouse gas emissions. Each year, the cap would be reduced with the goal of being 80 percent below 1990 levels by 2050. Initially, the program would raise about 700 million per year. Other news from Oregon: Apple Inc. has selected Vestas to supply the wind turbines for the wind farm located in the Columbia River Gorge. Oregon's PUC gave approval to Pacific Corp's plan to acquire more renewable energy.

British Columbia announced that it would proceed with the Site C dam project, despite the protests of environmentalists and some indigenous communities. With 1,100 megawatts of capacity, the Site C dam will provide enough energy to power the equivalent of about 450,000 homes a year. But, it will flood 55 square kilometers of river valley

**National and global:** The bad news for the coal industry continued in 2017 when utilities closed 30 coal power plants because due to bad economics. Unlike in previous years, a number of these plants were large and relatively new, usually an indicators of a low cost power plant.

Scientist linked Hurricane Harvey's record rainfall to climate change. They found that Harvey's rainfall was 15 percent higher than would be expected without climate change. Greater warming in the Arctic has changed the jet stream and decreased the rate at which storms move from west to east across North America.

In a new report Moody's warned cities and states to begin preparing for climate change risk. The report [outlines](#) how the credit rating agency will evaluate the impact of climate change in its future ratings for state and local bond issuers. The report warns cities and states to prepare for climate change or face increased difficulty maintaining or obtaining higher credit ratings.

The U.S. State Dept. announced that the U.S. and Canada were beginning negotiations to modernize the Columbia River Treaty, originally put in place in 1964. The treaty will focus on such shared benefits as hydropower generation, flood control, irrigation, navigation, recreation and the numerous river's ecosystems.

Regional Power Flow		
Intertie	Average power flow	Direction
California (AC+DC)	4,526 mw	Export to California
Canada (BC)	-1,143 mw	Import from Canada
Total	3,383 mw	export

River Data		
Data for Nov. 7	Outflow (kcfs)	Ave. outflow for last 10 years (kcfs)
(Snake) Lower Granite	43.2	22.6
(Columbia) The Dalles	171.0	139.2



## Bellingham ties for 3rd in Georgetown University Energy Prize

Congratulations to the city of Bellingham, Washington for its 3<sup>rd</sup> place tie in the final round of the national Georgetown University Energy Prize competition!

We're proud to see some of the local community partners like the Opportunity Council, which we've worked with over the years on energy efficiency, recognized as a leader in community energy sustainability.

The Energy Prize award cited Bellingham for "creative and inclusive programming to engage harder-to-reach sectors of the population, including renters and multi-family units" and for "a Green Power program to generate new capacity through renewable resources."

Bellingham wasn't the only Washington city to place well in the competition. The city of Walla Walla was commended for its overall energy savings and community efforts to advance energy savings during the contest.

The Georgetown Prize release on their website is at <https://quep.org/quep-names-fargo-winner-press-release/>

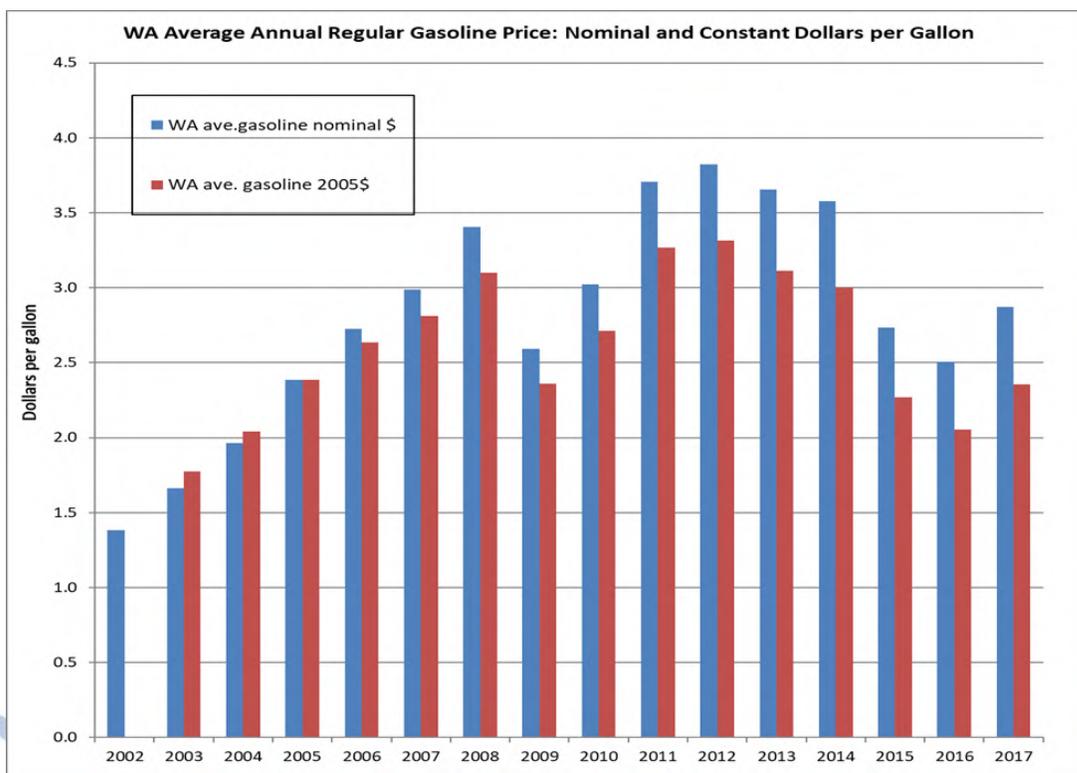
## Pacific NW National Labs

Congratulations are in order for Pacific Northwest National Laboratory, based in Richland WA. They are receiving \$1,214,872 in funding from U.S. DOE-EERE from the Solar Forecasting 2. Their project is to develop next generation solar resource capabilities that can be integrated into a weather research and forecasting model.

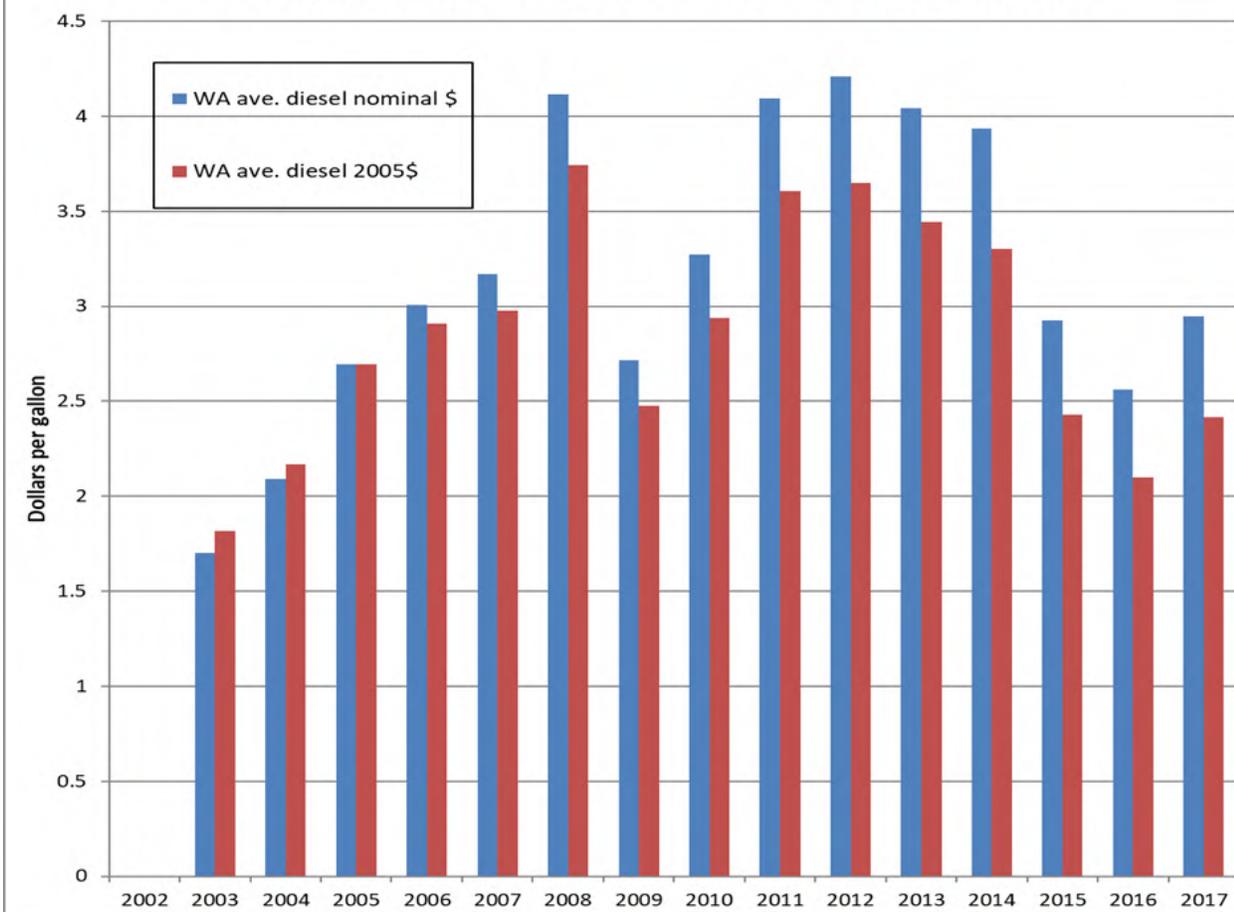
The [Solar Forecasting 2 program](#) projects seek to improve solar irradiance and power prediction, which includes quantifying the impacts from clouds and other weather conditions while untangling customer load from PV generation on the distribution system, where visibility is often limited to the net load (coupling load and PV generation).

These projects target the improvement of solar resource predictions that occur in two time frames: 24 to 48 hours in advance for day-ahead planning, and from one to six hours in advance for real-time grid operation. Forecasts in these two time windows have been challenging for existing solar forecasting models. These targeted performance improvements will generate tools and knowledge that will enable utilities to more accurately plan for generation reserves and real-time load balancing.

<https://energy.gov/eere/solar/solar-forecasting-2>



**WA Average Annual Diesel Price: Nominal and Constant Dollars per Gallon**



<b>Energy Price Summary, December 2017</b>	<b>Current</b>	<b>Month Ago</b>	<b>Year Ago</b>
Monthly Range at Mid-C (Peak: \$ per MWh)	21-38.0	21-35.5	21-59
Average Mid C price (Peak hours \$ MWh, current month)	28.6	25.2	35.0
Electricity WA Ave. Retail: October (cents/kWh)	7.99	7.94	7.75
Natural gas Kingsgate spot price (next day: \$ per million BTU)	2.42	2.42	3.42
Natural gas Sumas futures price (next month \$ per million BTU)	2.75	3.03	3.39
Natural gas Sumas monthly average: October (\$ per million)	2.43	2.51	2.60
Natural gas H.H. futures (NYMEX next month: \$ per million BTU)	2.79	3.05	3.56
E85 (national average: \$ per gallon gasoline)	2.46	2.33	2.15
Ethanol (CBT next month contract: \$ per gallon)	1.35	1.36	1.48
Corn (CBT next month contract: \$ per bushel)	3.53	3.56	4.16
Petroleum, West Texas Intermediate futures (\$ per barrel)	58.0	57.1	52.9
Seattle gasoline price (\$ per gallon, last week of the month)	3.00	3.05	2.68
Gasoline futures (NYMEX next month: \$ per gallon)	1.73	1.78	1.58
State diesel price (\$ per gallon, last week of the month)	3.15	3.20	2.76
Heating oil futures (NYMEX next month: \$ per gallon)	1.95	1.92	1.66
U.S. residential propane price report (\$ per gallon)	1.63	1.86	1.50
<b>Clean Cities: Alternative Fuel Price Report, October 2017</b>	<b>Current qtr US avg</b>	<b>Current qtr west coast</b>	<b>Last qtr avg west coast</b>
Ethanol E85 (\$ per gas gallon equiv.)	2.73	3.25	3.20
Biodiesel B20 (\$ per diesel gallon equiv.)	2.73	2.85	2.54
Biodiesel B99-100 (\$ per diesel gallon equiv.)	3.54	3.80	3.54
Compressed Natural Gas (\$ per gas gallon equiv.)	2.17	2.44	2.47
Propane (\$ per gas gallon equiv.)	3.81	4.16	4.14



## U.S. Energy Department Recognizes King County & Shari's Café & Pies

The U.S. Department of Energy (DOE) recognized two Seattle-area Better Buildings Challenge partners, [King County](#) and [Shari's Café & Pies](#), for their successful energy-efficient upgrade achievements at the King County International Airport and the local Shari's in Lynnwood, Washington. Through the Better Buildings Challenge, these two partners committed to reducing energy use across their properties by at least 20% in 10 years. [Full story](#)

## U.S. Energy Information Administration

- [Annual Energy Outlook 2017](#)
- [Electric Power Monthly](#)
- [Monthly Biodiesel Production Report](#)
- [Monthly Crude Oil and Natural Gas Production](#)
- [Monthly Energy Review](#)
- [Monthly Solar Photovoltaic Module Shipments](#)
- [Natural Gas Monthly](#)
- [Petroleum Marketing Monthly](#)
- [Petroleum Supply Monthly](#)
- [Short-term Energy Outlook](#)
- [State Carbon Dioxide Emissions](#)
- [This Week in Petroleum](#)

## Federal Funding Opportunity

The Advanced Research Projects Agency—Energy, within the U.S. Department of Energy has released a funding opportunity.

### [Funding Opportunity No. DE-FOA- 0001858](#)

ARPA-E expects to make approximately \$100 million available for new awards under this FOA, subject to the availability of appropriated funds. ARPA-E anticipates making approximately 30-50 awards.

ARPA-E funds research and development of high-potential, high-impact energy technologies that are too early for private-sector investment. The agency focuses on technologies that can be meaningfully advanced with a modest investment over a defined period of time in order to catalyze the translation from scientific discovery to early-stage technology. For the latest news and information about ARPA-E, its programs and the research projects currently supported, go to their website at <http://arpa-e.energy.gov/>.

The objective of ARPA-E OPEN FOA is to support high-risk R&D leading to the development of potentially disruptive new technologies across the full spectrum of energy applications. ARPA-E seeks to support early-stage, but potentially transformational research in all areas of energy R&D, covering transportation and stationary applications.

## Upcoming Events

[Sustainable Connections Smart Business Summit](#)—Jan 25

[Passive House Northwest 2018 Conference](#) - March 29-30

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