February
2018

ENERGYnews

Monthly News from the Commerce Energy Division

Low-Income Home Rehabilitation Revolving Loan Program

Commerce just received $5 million from the legislature to fund our new Low-Income Home Rehabilitation Revolving Loan Program.

This exciting new program is designed to help low-income households who need home repairs done before they can qualify for our weatherization program. Half of all the families who apply for weatherization live with rotting floors, bad plumbing, and leaky roofs. This work is beyond the scope of the weatherization program. But now, with our revolving loan fund, we can make those repairs. Families can defer the loan until their house is sold or pay it off earlier if they want.

Commerce will spend the next 4-6 months in the rulemaking progress. After that we'll focus on getting our local agencies trained and up to speed as soon as possible. This is a big step in filling the gap between what we can do and what the people of Washington need.

Contact Amanda Rains if you're interested in hearing more about this new program.

2018 Legislative Session in Washington State

There was a fast and furious approach to this year's legislative session. We hit the ground running before session started with fiscal note requests for seven Z-drafts.

By the last week of January we had a huge amount of fiscal note requests, with some second requests for revised bills.

Here are a few of the many bills we are tracking:

1233 Distributed Energy Future
2194 Out of State Materials for Public Works Projects
2280 Community Solar Gardens
2283 Carbon Free Washington Act
2295 Electric Airplanes
2327 Appliance Efficiency
2328 Clean Car Standards
2338 Low-Carbon Fuel Standards
2340 EV Sales Tax Incentive
2347 Electric Utilities IRPs and RPs
2401 Energy Independence Act
2402 Renewable Portfolio Standard
2410 On-Bill Repayment Programs
2580 Promoting Renewable Natural Gas
6080 Electrification of Transportation
6096 Carbon Pollution Tax Reduction
6098 Transportation Electrification
6203 Clean Energy Economy
6253 Clean, Efficient, Renewable Energy Standard
6335 Carbon Pollution Tax
6350 Advancing Development of Geothermal Resources
6449 Promoting Renewable Natural Gas

Grid Modernization gaining momentum in Washington State

Commerce's Clean Energy Fund continues to lead the nation in battery storage technology and innovation with new reliability features being added to the Vanadium Redox Flow battery storage system in Pullman.

The UET system went operational in 2015 and is now undergoing commissioning of enhanced resilient and reliability features for meeting challenging customer manufacturing needs for power quality and availability.

Full technical reporting by Pacific Northwest National Labs in Richland WA will be published later in 2018 for this project along with THREE other groundbreaking battery energy storage demonstration projects that have been installed in Washington.

There are several more Grid Modernization research and development projects already underway in the state. Several Solar Plus storage projects are currently in development using CEF Grid Modernization grants from the second round of CEF funding from 2015. Those newer projects typically provide higher levels of enhanced resiliency and reliability through creating "microgrids" that have multiple value streams including "black-start" operation capabilities. This allows these systems to be intentionally "islanded" from the rest of the grid during system disturbances and outages that could result from extreme storm events or other threats such as cybersecurity attacks.

Emission Performance Standards Rulemaking

Emissions performance standards (EPS) are state imposed rules to a limit the amount of CO2 that each power station may emit into the atmosphere.

We have been working with Ecology, Energy Facility Siting Evaluation Council and other stakeholders to develop the Emissions Performance Standards Survey. We currently have a solid draft survey and number. We will be moving on to the CR102 process soon.

Every five years, our office adopts rules on the average available greenhouse gas emissions output by surveying new combined-cycle natural gas thermal electric generation turbines. The new survey cycle has started and this rulemaking should be complete in 2018.

The turbines need to be commercially available, offered for sale by manufacturers and purchased in the United States. Then we determine the average rate of emissions of greenhouse gases for them.

The standard applies to all investor and consumer owned utilities in the state. Renewable and nuclear powered electricity are exempt, as are long-term commitments with the Bonneville Power Administration.

- Emission performance Standard Q and A – July 2017
- July 25, 2017 Emission Performance Meeting
- Rulemaking Stakeholder presentation – July 25, 2017

Matchmaker Program Gets Funding

The legislature's recent appropriation of $10 million in Matchmaker funds comes at a critical time. After a funding delay of six months, many local agencies that provide weatherization services have had to cut the number of homes served, have experienced delays in receiving matching utility funds, and were in danger of losing staff and contractors. Weatherization is a technical craft that requires time and resources to train staff and contractors. Lost capacity can take years to make up.

Even with the reduction from $15 million to $10 million, this funding will allow for the continuation of the work started under the Weatherization Plus Health Pilot program. Washington State Extension Energy Program's evaluation of the Weatherization Plus Health pilot produced promising results that Commerce wants to build on for the 2017 – 2019 biennium.

Washington State Matchmaker program doubles Washington State's investment towards weatherization. Matchmaker attracts matching funds from utilities, catalyzes the use of federal funds, and allows flexibility in providing weatherization to low-income clients.

Clean Energy Fund 3 Program in the 2017-2018 Capital Budget

On January 19, 2018, the Governor signed the capital budget bill. This includes funding for the Clean Energy Funds 3 (CEF3) program. This program started in 2013 and was funded a second time in 2016.

Clean Energy Fund grants enable a mix of projects. They support the development, demonstration and deployment of clean energy technologies. The projects save energy, reduce energy costs, reduce harmful air emissions and increase the energy independence for our state. Fund investments help develop new businesses and jobs which strengthen communities across the state.

Currently we are working on program development for CEF3. **When program development is complete, we will post information on our website for the open application periods for each program.**

Highlights:

Grid Modernization Program – *$11 million*

Targeted toward public and private electrical utilities serving Washington customers, utilities can partner with other public and private sector research organizations and businesses to apply for funding for projects that focus on:

- the advancement of clean and renewable energy technologies, and transmission and distribution control systems;
- supporting integration of renewable energy sources, deployment of distributed energy resources, and sustainable microgrids; and,
- increasing utility customer options for energy sources, energy efficiency, energy equipment, and utility services.

Program refinement is beginning now and competitive funding is anticipated in summer 2018.

Electrification of Transportation Program – *$11 million*

This new program will offer funding for Washington state local governments and public or private electrical utilities who may partner with other public and private sector research organizations and businesses to transform our transportation systems. Program design will begin in spring 2018 with competitive funding anticipated late 2018.

Research, Development and Demonstration Program – *$7.85 million*

This program is focused on providing match for federal and non-state funds for strategic research and development projects focused on new and emerging technologies. Project focus areas may include (but are not limited to) solar technology, advance bioenergy and biofuels, development of new earth abundant or lightweight materials, advance energy storage, battery component recycling, new renewable energy technology, and new energy efficiency technologies. Program refinement is beginning now and competitive funding is anticipated in summer 2018.

Solar Program – *$4 million*

This second new program in the CEF portfolio will be focused on the deployment of solar projects in Washington State. Based on legislation, priority will be given to distribution projects that reduce peak demand and are capable of generating at least 500 kilowatts of direct current. Program design will begin in spring 2018 with competitive funding anticipated late 2018.

Energy Headlines and Videos

Alternative Fuel and Electric Vehicles
Electric Vehicle Tax Credit Survives, but G.M. & Tesla Aren't Cheering

Carbon
Carbon Taxing: A Distinction with a Difference, Franz/Inslee

Governor Inslee's Carbon Tax Announced, Washington State House Republicans Counter with Alternative Bill

Cutting Carbon Emissions While Earning Cash

Environmentalists Alarmed at Marijuana Industry's Massive Use of Carbon-Based Electricity

Climate
Understanding Oregon's 'Cap & Invest' Climate Bills

Is Cap & Trade the Climate Solution? The Jury's Still Out

Energy
Nuclear Power Plant near Richland Generates More Electricity than Ever Before

Almost All Power Plants That Retired In the Past Decade Were Powered by Fossil Fuels

FERC Approves Avista-Hydro One Deal

Troubled Bonneville Power Administration Unveils Strategic Plan to Stay Afloat

Energy Boom gives the US a New Edge in Energy and Diplomacy.

Energy Storage Has an Upstream Swim in the Pacific Northwest

Other
The U-S Just Burned the Most Natural Gas Ever

Environmentalists Alarmed at Marijuana Industry's Massive Use of Carbon-Based Electricity

Judge OKs Plan to Boost Spill at Columbia & Snake River Dams

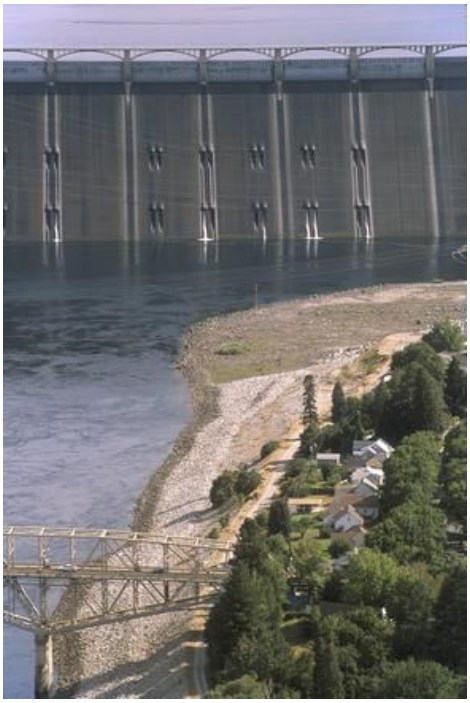
FERC Rejects DOE NOPR, Kicking Resilience Issue to Grid Operators

MIT: Cheap Gas, Not Renewables, Caused Nuclear Woes

Roadmap to Nowhere: The Myth of Powering the Nation 100% with Renewable Energy

Governor Inslee Wants Washington State Removed from Coastal Oil Drilling Plan

Energy Price Overview



River & Snow Pack Info

Observed January stream flow at The Dalles: 130% of average.

Observed January precipitation above The Dalles: 97% of average.

Est. 2018 Final runoff at The Dalles (Jan.—August): 105.9 million acre-feet, 104% of normal

Estimated regional snowpack: 103% of normal

Federal hydropower generation in January: 10,729 aMW, 5-year average: 9,358 aMW.

Reservoir content (Libby, Hungry Horse, Grand Coulee, Dworshak): January 68.7%, 5 -year average: 70.0%.

Petroleum: Crude oil prices rose during the month of January as global demand remained strong. The average West Texas Intermediate price was about $63 per barrel, while international Brent averaged approximately $68 per barrel. The price gap between WTI and Brent reflects the rebounding US shale production and additional transportation costs for WTI.

Transportation Fuels: Transportation fuel prices at the national level increased during January. December and January are usually the time when consumers see the lowest gasoline prices due to lower demand and because colder weather allows refiners to keep more volatile compounds in the fuel. The national average gasoline price was 9 cents per gallon higher relative to the last week of December. National gasoline and diesel were $2.52 and $2.97 per gallon respectively. Washington state average gasoline price for the same period increased by 7 cents, relative to the last week of October, to $2.97 per gallon, while diesel increased 2 cents to $3.17 per gallon.

Natural Gas: The average Henry Hub natural gas price increased 35 cents to $3.14 per MMBtu due in part to colder weather in much of the nation. During January, the average price for month-a-head (Jan.). Locally, the average January natural gas spot price at the Kingsgate hub decreased to $3.02 per MMBtu. National gas storage levels decreased 99 Bcf last week and are at 2,197 Bcf, a decline of about 1000 Bcf over the last month: about 16.2% below the 5-year natural gas storage average for this time of the year. Jan. 7 saw a record storage withdrawal of 67.9 Bcf. Gas storage in the Pacific region was 12.4% below the 5-year average.

Electricity: Moderate temperatures along the west coast kept spot market electricity prices drove lower during January. Our wet January 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 down over 20% and averaged $28.6 per MWh in January. Federal hydropower generation was a whopping 10,729 aMW during January.

Energy News

Local and regional:

Several weeks ago, Governor Inslee announced details of his much awaited carbon tax proposal. The bill was sponsored by Sen. Carlyle and Rep. Fitzgibbon. A substitute version of the bill was released the first week in February. The initial tax bill imposes a $20 tax per ton of carbon dioxide on fossil fuels, including those that generate electricity, beginning in 2019. The substitute bill carbon tax begins at $10 per ton and increases by $2 per year. Washington State Republicans countered with their own carbon tax bill.

In late January, the Governor rejected a permit for what would have been the nation's largest oil-by-rail terminal, saying the record shows the risks and impacts outweighed the need for, and potential benefits of, the project. Inslee agreed with the recommendation of a state energy panel, which unanimously voted in November to recommend that the Vancouver Energy project in southwest Washington be denied.

In January the Bonneville Power Administration (BPA) unveiled its Strategic Plan. The BPA is a nonprofit federal power marketer headquartered in Portland, Oregon, and is part of the US Department of Energy. The bulk of its revenues come from sales of 22 GW of power from 31 federal hydropower plants operated by the U.S. Army Corps of Engineers, the Bureau of Reclamation, and the region's sole nuclear power plant. The entity has struggled to maintain cost competitiveness and commercial performance amid low natural gas prices, and a slew of new wind and solar capacity additions in the region, which are driving down wholesale power prices. BPA's power customers have expressed significant concerns that BPA's recent pattern of rising costs and rates is unsustainable. The Strategic Plan is meant to address the customer pricing and long-term financial stability concerns.

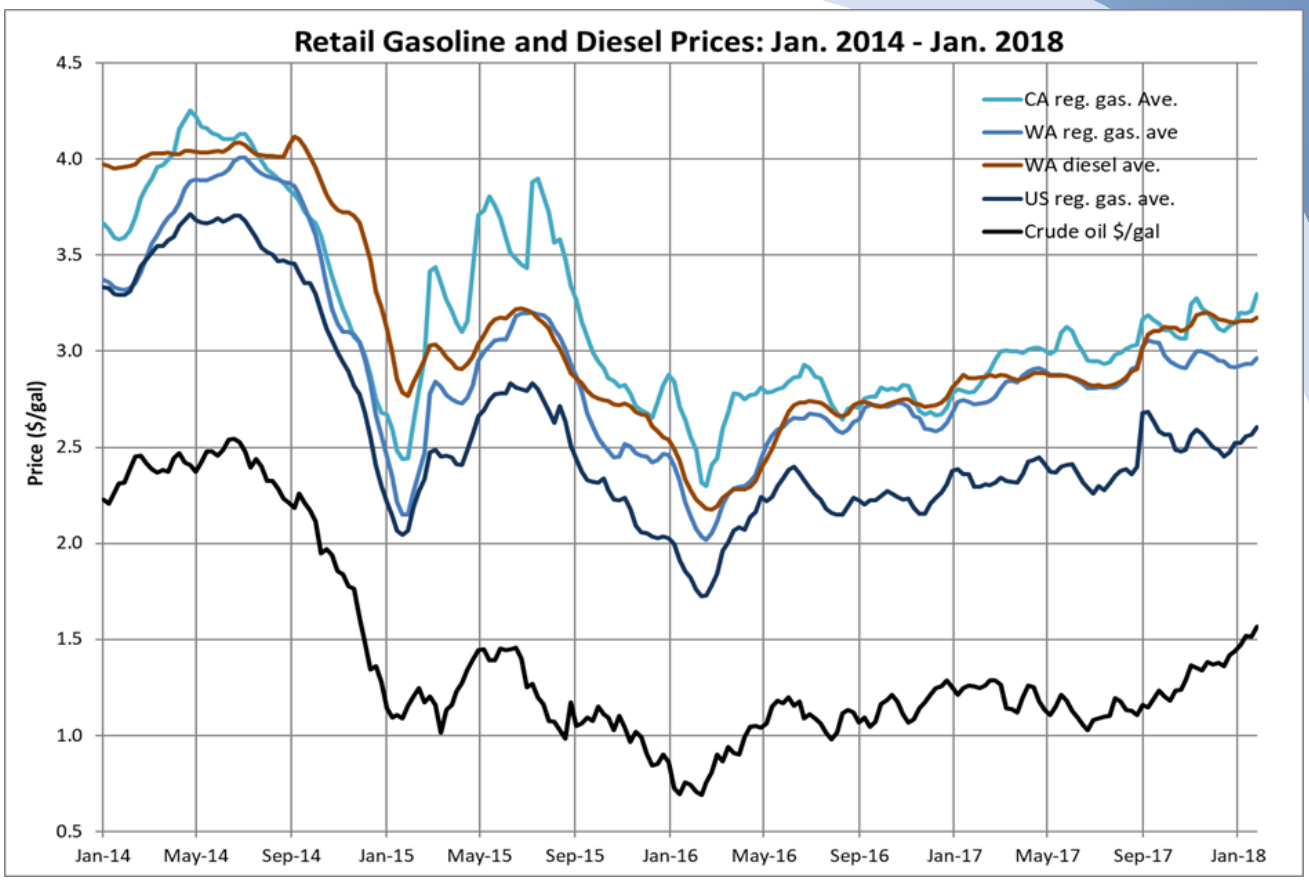
The Federal Energy Regulatory Commission this week approved the merger of Hydro One and Avista, possibly clearing the way for the deal to close in the second half of this year.

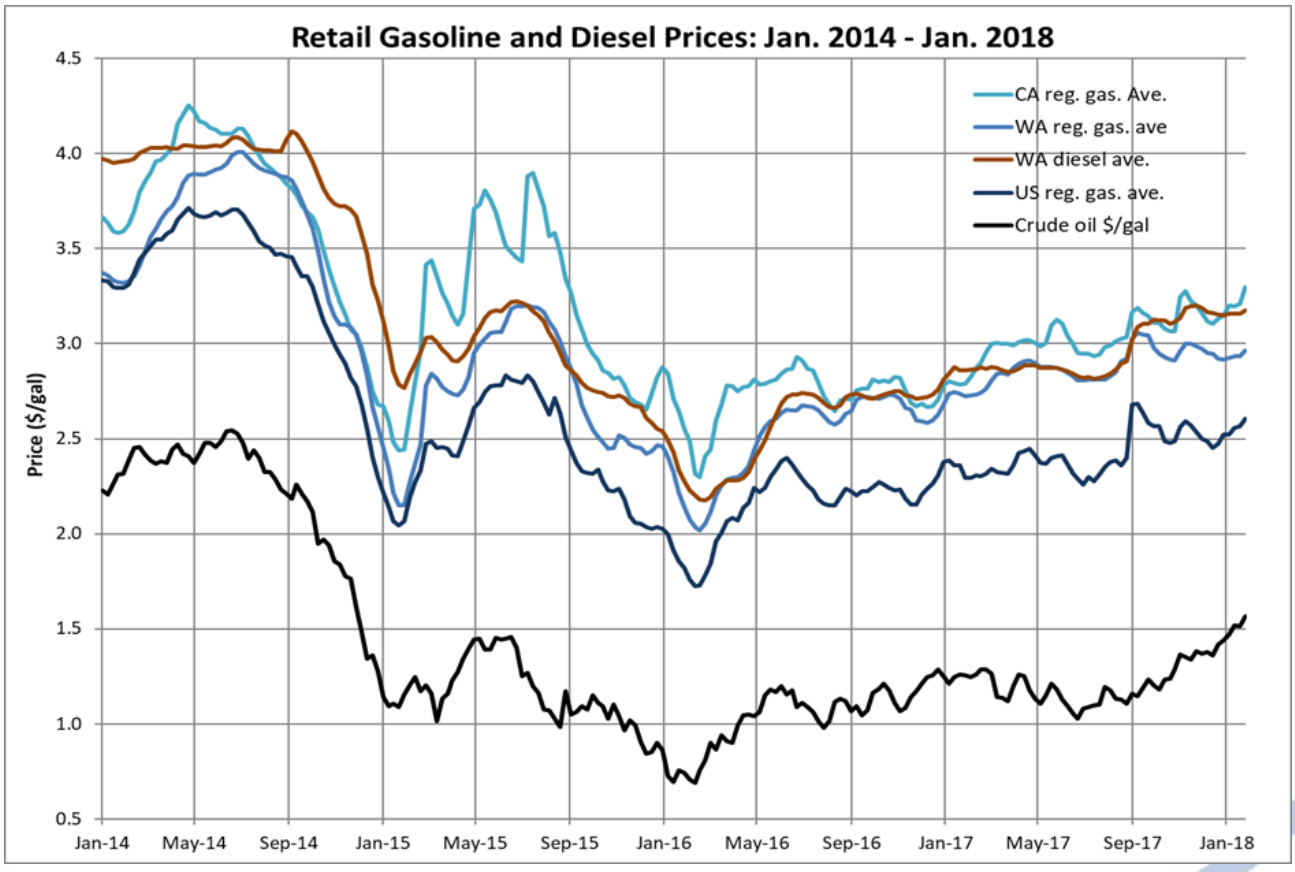
National and global:

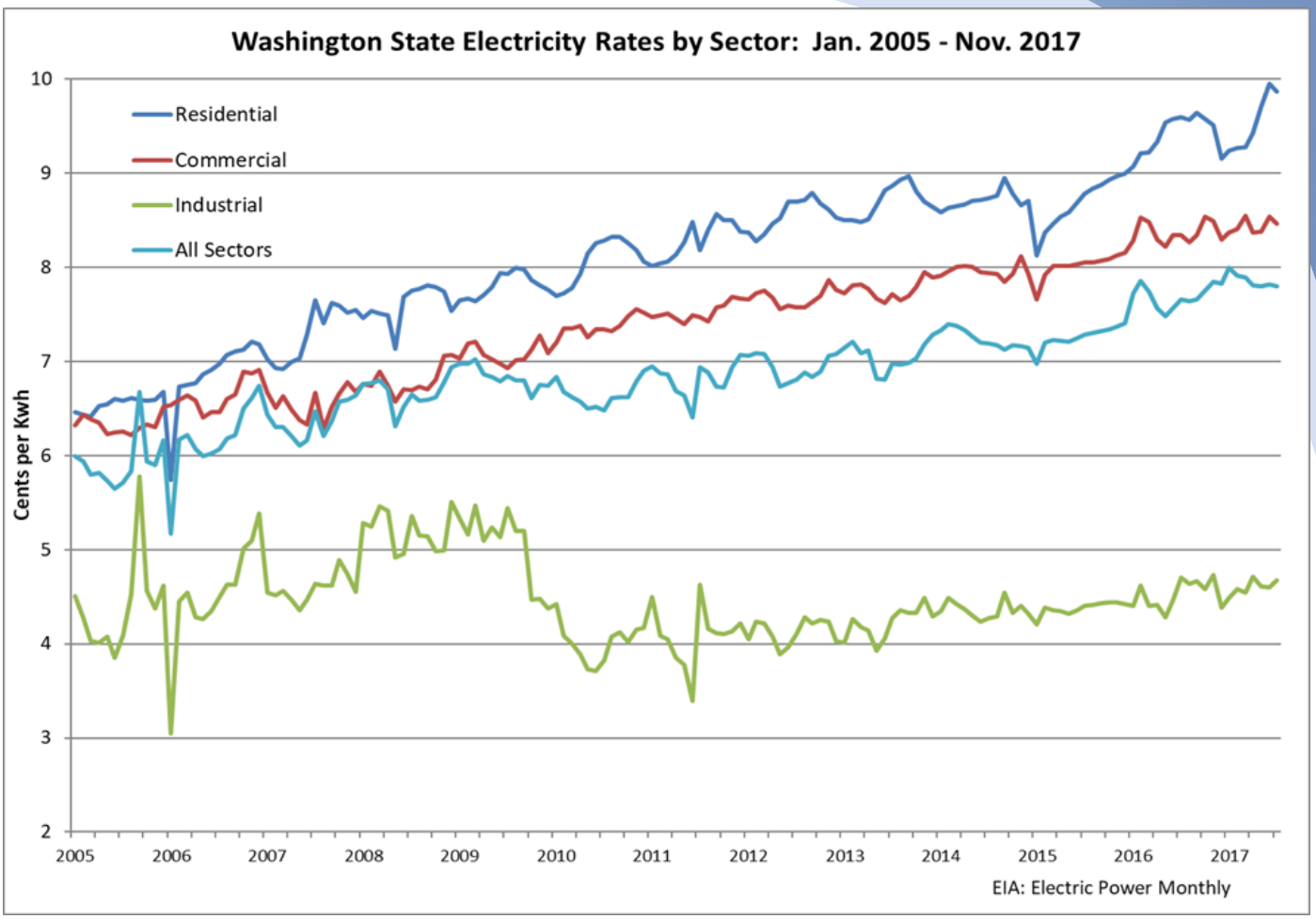
NASA scientists reported that 2017 ranked as the second warmest year since 1880. Scientists at the National Oceanic and Atmospheric Administration, which uses somewhat different methodology, ranked 2017 as the third hottest year. Sequential global average temperature records were set in 2014, 2015 and 2016. The last two years were influenced by the el Nino weather pattern which slightly increases global temperature. Last year was a weak la Nina year, which lowers the global average temperature, but still ranked as second or third hottest year in the historical record. The planet's average surface temperature has risen about 2 degrees Fahrenheit (a little more than 1 degree Celsius) during the last century or so, a change driven largely by increased carbon dioxide and other human-made emissions into the atmosphere.

Regional Power Flow		
Intertie	**Average**	**Direction**
California (AC+DC)	5,686 mw	Export to California
Canada (BC)	192 mw	Import from Canada
Total	5,878 mw	export

River Data		
Data for Nov. 7	**Outflow (kcfs)**	**Ave. outflow for last 10 years (kcfs)**
(Snake) Lower Granite	48.6	30.5
(Columbia) The Dalles	212.1	143.4


Retail Gasoline and Diesel Prices: Jan. 2014 - Jan. 2018
CA reg. gas. Ave.
WA reg. gas. ave
WA diesel ave.
US reg. gas. ave.
Crude oil $/gal
Price ($/gal)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
Jan-14
May-14
Sep-14
Jan-15
May-15
Sep-15
Jan-16
May-16
Sep-16
Jan-17
May-17
Sep-17
Jan-18


Retail Gasoline and Diesel Prices: Jan. 2014 - Jan. 2018
CA reg. gas. Ave.
WA reg. gas. ave
WA diesel ave.
US reg. gas. ave.
Crude oil $/gal
Price ($/gal)
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
Jan-14
May-14
Sep-14
Jan-15
May-15
Sep-15
Jan-16
May-16
Sep-16
Jan-17
May-17
Sep-17
Jan-18



Energy Price Summary, January 2018	Current	Month Ago	Year Ago
Monthly Range at Mid-C (Peak: $ per MWh)	15.0-37.0	21-38.0	21-59
Average Mid C price (Peak hours $ MWh, current month)	22.1	28.6	32.5
Electricity WA Ave. Retail: November (cents/kWh)	8.13	7.99	7.85
Natural gas Kingsgate spot price (next day: $ per million BTU)	3.02	2.42	2.75
Natural gas Sumas futures price (next month $ per million BTU)	2.51	2.75	3.74
Natural gas Sumas monthly average: November ($ per million	2.57	2.43	2.37
Natural gas H.H. futures (NYMEX next month: $ per million BTU)	3.14	2.79	3.30
E85 (national average: $ per gallon gasoline)	2.56	2.46	2.33
Ethanol (CBT next month contract: $ per gallon)	1.42	1.35	1.51
Corn (CBT next month contract: $ per bushel)	3.60	3.53	3.68
Petroleum, West Texas Intermediate futures ($ per barrel)	63.1	58.0	52.3
Seattle gasoline price ($ per gallon, last week of the month)	3.04	3.00	2.79
Gasoline futures (NYMEX next month: $ per gallon)	1.85	1.73	1.58
State diesel price ($ per gallon, last week of the month)	3.17	3.15	2.86
Heating oil futures (NYMEX next month: $ per gallon)	2.08	1.95	1.65
U.S. residential propane price report ($ per gallon)	1.89	1.63	1.65
Clean Cities: Alternative Fuel Price Report, October 2017	**Current qtr US avg**	**Current qtr west coast**	**Last qtr avg west coast**
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 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 Opportunities

DE-FOA-00001846 Notice of intent: Energy infrastructure deployment on Tribal Lands—2018

DOE's Office of Indian Energy is issuing this FOA to:

(1) Install energy efficiency measures and/or energy generating system(s) for Tribal Buildings (Area of Interest 1);

(2) Deploy community-scale energy generating system(s) on Tribal lands (Area of Interest 2);

(3) Install energy system(s) for autonomous operation to power a single or multiple essential tribal loads for a short period of time during an emergency situation or for long-term tribal community resilience. (Area of Interest 3).

DE-FOA-0001749: Notice of Intent to issue Funding Opportunity for Flexible CHP for Grid Support

The Advanced Manufacturing Office intends to issue a Funding Opportunity Announcement (FOA) entitled "Flexible Combined Heat and Power (CHP) for Grid Reliability and Resiliency" in February 2018. It is anticipated that the FOA may include two areas of interest to research enabling technologies for CHP systems that are specifically designed to provide cost-effective support to the electric grid. Funding amount is $20,000,000—subject to appropriations.

DE-FOA-0001807: Notice of Intent to Issue Funding Opportunity Announcement entitled FY 2017 Vehicle Technologies Office Batteries and Electrification to Enable Extreme Fast Charging Funding Opportunity Announcement

This FOA seeks projects to encourage the development of plug-in electric vehicle systems that can demonstrate the ability to recharge rapidly at high power levels. Developing these systems should allow plug-in electric vehicles to be charged much faster than current vehicle charging, enabling the greater use of electricity for transportation (which is 98%, domestic energy generation from diverse sources) and encouraging the widespread use of plug-in vehicles.

American Inventions Made Onshore Competition

The American Inventions Made Onshore (AIM Onshore) prize competition is seeking creative, specific, and innovative proposals from intermediary organizations to deliver DOE's Build4Scale manufacturing fundamentals training to energy technology innovators, and help them forge partnerships with domestic manufacturers.

Upcoming Events

Nuclear Fusion Energy Technology Panel—Clean Tech Alliance Feb 14th

Passive House Northwest 2018 Conference - March 29-30

Washington State Energy Division
WA Dept. of Commerce
PO Box 42525
Olympia WA 98504-2525
Phone: 360-725-3112

To sign up for delivery of the newsletter send an email to:
energy_policy@commerce.wa.gov