Energy News Overview

Recently, the US Congress passed legislation approving the Keystone XL pipeline and President Obama noted the ongoing State Dept. review and promptly vetoed it. It’s unlikely that the Senate can muster 67 votes and override the veto: see page 5. Over the past several years the Keystone XL has become more about winning at politics than an economic or environmental issue. In a more constructive move, the EPA expanded its Energy Star program and added clothes dryers to its list of household appliances: see page 5. The credentials, quality of work, and financial support for a climate researcher whose work is often invoked by climate skeptics were challenged in a New York Times article: see page 5. “Willie” Soon accepted $1.2 million over a decade, from fossil fuel interests, including a Koch foundation, and failed to disclose this to his research organization or the journals that published his articles. The funding of Dr. Soon is a classic example of industrial interests trying to cast doubt on scientific “consensus”. Over the past month the media ran a number of articles on electric vehicles, including one that cash rich Apple was planning to enter into this market: see page 7.

Regionally, the growing inquiry into conflict of interest and the ultimate resignation of Gov. Kitzhaber dominated headlines. Gov. Kitzhaber and his fiancé, Cylvia Hayes, have become the poster children for clean energy critics. The carbon tax program that Kitzhaber was pursuing appears to be dead in the Oregon legislature, though an extension of the Oregon clean fuel provisions seems likely. In Washington State, Governor Inslee’s Carbon Pollution Accountability Act legislation (cap & trade) has moved out of committee in the Democratic controlled house, but failed to advance in the Republican dominated Senate. Newspaper articles suggest that the CPAA currently does not have the votes to be passed: see page 5. An alternative of sorts to the CPAA, a bipartisan bill (SB 5987) that would increase the state’s road fuel taxes and various licensing fees, was passed out of the Transportation committee last week. The bill contains significant support for transit, plus bicycle and pedestrian pathways. It also contains a “poison pill” provision that says that if Inslee installs low-carbon fuel standards, a pet project of his, then the Senate would shift the transit, pedestrian, and bike-path money to work on roads. This provision has created concerns among environmental advocates. The oil industry has also come out in opposition to the CPAA legislation and proposed Clean Fuels standards. This follows a similar pattern seen in California, where cap & trade and clean fuels legislation has passed into law: see articles on pg. 5 & 6. A flurry of solar PV legislation bills have been introduced in the House. All the bills would slowly reduce the PV subsidy levels, but one of the bills opens the way for third party leasing companies, like Solar City to receive the tax incentives: see page 6.

The mild winter has resulted in very low snowpack in the Cascades. This has raised concerns that Washington and Oregon will experience a drought this summer and fall, which would impact power generation and irrigation. It is still possible that the Northwest could receive some mountain snowfall in March. See article on potential drought on page 5.

California is experiencing a rapid rise in gasoline prices due to a large fire at the Exxon-Mobil Torrance CA refinery. Washington prices are also increasing faster than the national average. Because the west coast is mostly isolated from the larger US petroleum pipeline network and markets, prices here are very sensitive to the shutdown of one large refinery.
What’s New in the Energy Office

Updated Carbon Assessment Tax Model is Available

In 2011, at the request of the Washington State Department of Commerce, and to fulfill graduate school requirements at the University of Washington, Keibun Mori developed the Carbon Tax Assessment Model (CTAM). CTAM is an open-source model that quantifies the greenhouse gas (GHG) and fiscal impacts of a carbon tax on the five primary energy sectors and provides policy recommendations for Washington State based on the model’s results. Since 2011, the model has been maintained and enhanced by Energy Office staff within the Washington Dept. of Commerce. The recent update is the most extensive yet for CTAM. The following new features have been added to CTAM. For the most part these are optional features reflecting potential complimentary policies to a carbon tax:

- Industrial process emissions can now be added to the model,
- Electricity sector emissions are now consumption based vs. generation based,
- Optional exogenous reductions to any of the five primary energy consuming sectors reflecting complimentary GHG reduction policies that are not part of the carbon tax,
- Optional supplemental fuel tax, reflecting an increase in state or federal transportation fuel taxes,
- Optional Low Carbon Fuel Standard much like the California LCFS,
- Optional early shutdown of coal-fired electricity generation,
- Optional increased electric vehicle market penetration rate.

In addition, the graphics and tables on the dashboard tab of CTAM have been improved. The newest version is designated CTAM 3.0 and will be publicly available the first week in March on this Dept. of Commerce webpage: http://www.commerce.wa.gov/Programs/Energy/Office/Pages/NewEnergyReports.aspx

Contact Greg Nothstein for details: greg.nothstein@commerce.wa.gov

What is Smart Grid? (https://www.smartgrid.gov/the_smart_grid/smart_grid)

What is the Smart Grid?

The Smart Grid

The Smart Home

Renewable Energy

Consumer Engagement

Operation Centers

Distribution Intelligence

Plug-In Electric Vehicles
Electricity, Petroleum & Natural Gas Prices

Energy Price Overview

After reaching 5 year lows in January, the price for West Texas Intermediate (WTI) crude oil increased slightly during February. The February average spot price for WTI was about $3.65 or 8 percent higher than the January average price. The Baker Hughes rig count, a measure of oil and natural gas drilling activity, fell to 1019 units last, down 37 percent from its high last October. Wells that were in mid development when the drilling decline began, continue to be completed and US oil production continues to increase, albeit at a slower rate, and global production still exceeds demand.

The last week of January likely will prove to be the 2014/15 low point for gasoline and diesel prices; by the last week of February national prices have risen by nearly 30 and 4 cents per gallon respectively. Washington state gasoline and diesel prices averaged $2.47 and $2.96 per gallon respectively. The increase in transportation fuel prices during mid winter is a predictable phenomena in the US. A number of refineries are off-line during January through April as they begin their maintenance programs. Other factors contributing to the recent fuel price increases are CA beginning the switch to summer fuel, strikes by USW unions at four refineries, and a fire at the Exxon-Mobil refinery in Torrance CA.

The price for month ahead NYMEX natural gas declined in February to 2.78 $ per MMBtu: a $0.20 decrease from the previous month at this time. The price decrease occurred because of increasing natural gas production and higher than anticipated gas inventories. Locally natural gas spot price at Kingsgate was $2.38 per MMBtu, down 20 cents from the price reported last month. Nationally there was a large natural gas storage withdrawal of 219 Bcf last week. Gas storage levels are 1,968 Bcf about 1.5% below the 5-year storage average at this time. Because of our exceptionally warm winter, gas storage in the West is running 23% ahead of the 5-year average.

Regional electricity prices are down sharply because of our warm winter weather: Feb. monthly average spot price of $19.3 per MWh versus $23 for the previous month. This is a huge $61 per MWh lower than the Feb. 2014 average monthly spot price. Reflecting above normal rainfall hydropower generation, which was up 20 percent from Jan. of last year. Precipitation in Jan. was 64% of normal above the Dalles, while stream flow at the Dalles station was 128% of normal.

---EIA has delayed posting January 2015 data, numbers will be updated when received.---

<table>
<thead>
<tr>
<th>Energy Price Summary</th>
<th>Current</th>
<th>Month Ago</th>
<th>Year Ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly Range at Mid-C (Peak: $ per MWh)</td>
<td>7.0-28</td>
<td>18.5-26</td>
<td>45-315</td>
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<tr>
<td>Average Mid C price (Peak hours $ MWh)</td>
<td>19.3</td>
<td>23.0</td>
<td>80.8</td>
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<td>Electricity WA Retail: Nov. (cents/kWh)</td>
<td>0.00</td>
<td>7.16</td>
<td>7.29</td>
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<td>Natural gas Kingsgate spot price (next day: $ per million BTU)</td>
<td>2.65</td>
<td>2.42</td>
<td>6.68</td>
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<td>Natural gas Sumas futures price (next month $ per million BTU)</td>
<td>2.65</td>
<td>2.53</td>
<td>5.95</td>
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<td>Natural gas Sumas monthly average: Oct. ($ per million BTU))</td>
<td>0.00</td>
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<td>4.57</td>
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<tr>
<td>Natural gas H.H. futures (NYMEX next month: $ per million</td>
<td>2.78</td>
<td>2.98</td>
<td>5.16</td>
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<td>E85 (national average: $ per gallon gasoline)</td>
<td>2.43</td>
<td>2.29</td>
<td>3.73</td>
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<td>Ethanol (CBT next month contract: $ per gallon)</td>
<td>1.35</td>
<td>1.38</td>
<td>2.15</td>
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<td>Corn (CBT next month contract: $ per bushel)</td>
<td>3.73</td>
<td>3.75</td>
<td>4.52</td>
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<tr>
<td>Petroleum, West Texas Intermediate futures ($ per barrel)</td>
<td>49.2</td>
<td>45.8</td>
<td>103.2</td>
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<tr>
<td>Seattle gasoline price ($ per gallon)</td>
<td>2.59</td>
<td>2.31</td>
<td>3.45</td>
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<tr>
<td>Gasoline futures (NYMEX next month: $ per gallon)</td>
<td>1.63</td>
<td>1.34</td>
<td>2.77</td>
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<tr>
<td>State diesel price ($ per gallon)</td>
<td>2.96</td>
<td>2.79</td>
<td>4.00</td>
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<td>Heating oil futures (NYMEX next month: $ per gallon)</td>
<td>2.12</td>
<td>1.68</td>
<td>3.07</td>
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<td>U.S. residential propane price report (reported Oct.-Mar.)</td>
<td>2.36</td>
<td>2.37</td>
<td>3.69</td>
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<table>
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<tr>
<th>Fuel Type</th>
<th>US avg current</th>
<th>West coast current qtr</th>
<th>West Coast last qtr avg</th>
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<tr>
<td>Ethanol E85 ($ per gas gallon equiv.)</td>
<td>4.06</td>
<td>4.53</td>
<td>5.06</td>
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<tr>
<td>Biodiesel B20 ($ per diesel gallon equiv.)</td>
<td>3.89</td>
<td>4.06</td>
<td>4.22</td>
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<td>Biodiesel B99-100 ($ per diesel gallon equiv.)</td>
<td>4.63</td>
<td>4.79</td>
<td>4.83</td>
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<tr>
<td>Compressed Natural Gas ($ per gas gallon equiv.)</td>
<td>2.16</td>
<td>2.41</td>
<td>2.42</td>
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<tr>
<td>Propane ($ per gas gallon equiv.)</td>
<td>4.25</td>
<td>4.43</td>
<td>4.36</td>
</tr>
</tbody>
</table>
Retail Gasoline and Diesel Prices: Jan. 2010 - Feb. 2015

Spot Crude Oil (WTI), Natural Gas (Kingsgate hub): Jan. 2010 - Feb. 2015
Energy Headlines - If you only have time to read a few articles—read these.


Despite Low Snowpack, There’s no Need to Panic. Yakima Herald-Republic.  

Oil Industry Takes Aim at California’s War on Carbon. Sacramento Bee.  

http://www.washingtonpost.com/national/energy-environment/dryers-homes-energy-guzzlers-just-got-greener/2015/02/18/ef05fdd2-b774-11e4-bc30-a4e75503948a_story.html
Renewable and Clean Energy


Climate, Cap & Trade


Regional Politics


**Electric Vehicles**


**Energy Efficiency**


**Miscellaneous**


River & Snow Pack Info

- Observed Jan. stream flow at The Dalles: 124% of average.
- Observed Jan. precipitation above The Dalles: 64% of average.
- Forecast runoff at The Dalles: 102.6 million acre-feet, 101% of 30-year average
- Federal hydropower generation in Jan.: 10,640 aMW, 2010-2014 average: 8,851 aMW.
- Reservoir content (Libby, Hungry Horse, Grand Coulee, Dworshak): Dec 70%, 5-year average: 70%.

Power Exchanged

<table>
<thead>
<tr>
<th>Data for February 24</th>
<th>Daily Outflow (kcf/s)</th>
<th>Avg Jan 26 Outflow for last 10 years (kcf/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Granite</td>
<td>44.7</td>
<td>31.2</td>
</tr>
<tr>
<td>The Dalles</td>
<td>218.6</td>
<td>133.1</td>
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</table>
Energy efficiency improvements have largely offset effects of larger homes

The growth in residential energy use has slowed to below the rate of household growth, meaning that per-household energy consumption has decreased. Analysis of EIA's Residential Energy Consumption Survey (RECS) conducted since 1980 shows how improvements in energy efficiency reduced energy intensity enough to offset more than 70% of the growth in both the number of households and the size of dwellings.

After adjusting for the effects of the other factors, 2009 energy intensity declined (improved) by about 37% compared with the level in 1980, meaning that without this change, households would have required another 3.6 quads of delivered energy in 2009. The effects of reduced energy intensity are significantly greater when considered in terms of primary energy use, which takes into account that, on average, nearly three units of energy from primary fuels such as coal, natural gas, and nuclear fuel are used to generate one unit of electricity, which is a major part of energy use in households.

Energy intensity changes are influenced by factors such as energy prices, shifts in household energy fuel sources, consumer preferences for increased comfort and entertainment options, and increasingly efficient technologies. Programs designed to increase the adoption of efficient technologies such as residential appliance standards, building codes, incentives, energy labeling (such as the voluntary ENERGY STAR® program), and other informational programs also work to decrease consumption.

The gains from energy intensity improvements would have been even larger if it were not for consumer preferences for larger homes and increased adoption of home appliances and electronics. In this period, the average home size grew by about 20%. With increased square footage came adoption of more and larger devices such as more televisions with larger screens and new or expanding end uses such as computers, networking equipment, and home entertainment devices.

Source: U.S. Energy Information Administration, "Drivers of Household Energy Consumption"