**Natural Gas Advisory Committee**

**Meeting Notes**

**June 16, 2011**

The meeting of the Natural Gas Advisory Committee (NGAC) of the Northwest Power and Conservation Council was called to order at 10:00 a.m. by Chair Massoud Jourabchi. The attendees were welcomed to the meeting and a round of introductions was made. The agenda was approved. These notes summarize the discussion that took place and document the advice that the Council received during the meeting.

The committee members were asked about topic areas of interest for this and future meetings. The following were mentioned as issues of interest.

* + Natural gas infrastructure changes
  + Wind integration and how it affects demand for gas
  + Climate change
  + Impact of coal plant closures on demand for natural gas
  + Natural gas vehicles
  + Electric vehicles and base load power
  + Relationship between prices of natural gas and petroleum

Randy Friedman presented the 2011-2019 Outlook of the Northwest Gas Association (NGA). This [presentation](http://www.nwcouncil.org/energy/ngac/meetings/2011_06/061611%20NWPCC-%20Randy%27s%20Presentation%20stack.pptx) is available on Council’s website.

The committee discussed the presentation and the following points were made:

* Ruby pipeline is joining NGA on July1
* Shale - environmental concerns may restrict supply, especially in the East
* Liquid hydrocarbons are currently supporting low natural gas prices.
* What is the full-cycle cost of dry shale gas? After 2014-15, the cost is at the $6.50 level. Associated gas from oil drilling may have a very low price.
* Up to 90% recycling of fracking fluids. Water use is a big issue with shale development, especially in Texas where drought is rampant.
* Environmental concerns not insurmountable issues with shale gas.
* Ruby not expected to have an effect on the I-5 corridor NG market.

Sam Van Vactor briefly updated the group on the Clean Energy Standards initiative.

* The current proposal calls for 80% clean energy by 2035. This can lead to closure of 53% of coal-powered units nationally, which could add 10Tcf to annual demand for natural gas. Given that current demand is about 24 Tcf, this is a large increase in demand.

The group discussed issues affecting demand for natural gas

* Low NG prices may stimulate demand for new industries that use NG.
* International NG prices are significantly higher than expected in the U.S. This may shift manufacturing jobs back to the U.S. by offsetting labor cost differences. Low gas prices domestically and high oil prices internationally could help play a role in promoting more U.S. jobs. Industrial demand for gas may not continue to decline as forecast if the U.S. government and consumers begin to pay down foreign debt, which would increase the U.S. balance of trade and increase industrial production.

The next item on the agenda was Council’s Sixth Power Plan and the reason for reforming the Natural Gas Advisory Committee. Massoud Jourabchi reviewed the events after the last meeting, as well as the analytical update to Council’s natural gas model. This [presentation](http://www.nwcouncil.org/energy/ngac/meetings/2011_06/Presentation%20material%20for%20the%20NGAC%20June%202011.pptx) is available from Council website.

Issues regarding supply and price of natural gas discussed during the presentation included:

* Natural gas lease development requirements may have caused a continued increase in the supply of natural gas even with depressed prices.
* Early development of shale plays has gone after liquids rich shale. Dry shale will set the long-term price of gas at around $4-$5.
* Bonus and royalties can change the price of natural gas significantly. Current prices are depressed.
* Producer (Lessee) cannot simply acquire leases and "warehouse" them without reasonable development. The pressure to drill in this regard is a significant issue in shale basins and is driving current drilling to some degree. There is significant “failure to develop” litigation in the offing.
* Linking oil and NG prices was discussed at different times during the meeting. Oil and gas prices have separated, but still fluctuate together. If a large shift to NG vehicles or LNG exports materializes, then a closer link between oil and gas may re-emerge.
* Not much inter-fuel competition in the industrial load in the NW and other regions.
* We are seeing some shift from gas furnaces to electric heat pumps

The next item on the agenda was discussion of the results from an informal poll conducted among the NGAC members. The members were asked for their expectations about prices at Henry hub for 2015 and 2030. Some of the issues related to the poll include:

* Backup of natural gas into Canada, as a result of Marcellus Shale gas going to the Northeast, may depress natural gas prices in the Pacific Northwest, but the growing use of natural gas for oil sands development may help support natural gas prices in WCSB. [spell out]
* Developing shale, a manufacturing process, will not result in the ever increasing price over time as we have seen for more conventional sources of natural gas.
* Some thought that the long-term supply curve was comparatively flat over an extended range.
* Future technological advances would help keep downward pressure on the price of shale gas.
* Members in general support developing scenarios that would lie below the forecast price range.

After lunch the group was presented with a proposal for adjusting the Council’s long-term price forecast. The result of the NGAC survey was compared to the Council’s Sixth Power Plan, NYMEX futures price for natural gas and the EIA Annual Energy Outlook. The results suggest that a $1- $1.5 adjustment (lowering) of Council’s medium case Sixth Plan forecast may be warranted. A number of discussions in support of lower or higher projections ensued. Some of the key points in the discussion were:

* A flat $4 natural gas price is very feasible as a low case.
* Medium forecast of around $6 dollars in long-term.
* If oil and natural gas were linked, the price of natural gas could be in the $8-$10 range.
* Substitution for coal probably would keep NG price from going even lower.
* Coal setting the floor on natural gas at around $4 dollars.
* Exports have kept coal prices up.

The group then briefly talked about topics for future meeting and the format of future meetings. The topics of interest included: wind integration issues, coal plant closures, NG powered vehicles.

The meeting ended at 2:00 pm as scheduled.

These notes are an accurate summary of the discussion at the June 16th 2011 NGAC meeting.

Massoud Jourabchi Chair

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| **June 16 2011** | **Natural Gas Advisory Committee** | | |  |
|  |  |  |  |  |
| **Name** | **Affiliation** | **Attending in Person** | **By Phone** |  |
| Dernovsek, David | Bonneville Power Admin. |  |  |  |
| Petty, Robert | Bonneville Power Admin. |  |  |  |
| Sara Patton | Northwest Energy Coalition |  |  |  |
| Bennett, David | FortisBC |  |  |  |
| Bridges, John | TransCanada |  |  |  |
| Defenbach, Byron | Intermountain Gas |  |  |  |
| Dragoon, Ken | NWPCC |  |  |  |
| Friedman, Randy | NW Natural Gas |  |  |  |
| Gopal, Jairam | Southern CA Edison |  |  |  |
| Hamilton, Linda | Shell Trading Gas & Power |  |  |  |
| Harper, Rick | Consultant |  |  |  |
| Hawk, David | Energy Analysis & Answers |  |  |  |
| Hiaasen, Eric | EWEB |  |  |  |
| Jacobsen, Jay | Puget Sound Energy |  |  |  |
| Jourabchi, Massoud | NWPCC |  |  |  |
| Kern, Steve | Seattle City Light |  |  |  |
| Kirschner, Dan | Northwest Gas Association |  |  |  |
| Kunz, Rick | Shell Trading Gas & Power |  |  |  |
| Venz, Gary | Northwest Pipeline-Williams |  |  |  |
| Morlan, Terry | NWPCC |  |  |  |
| Nothstein, Greg | Washington State Energy Office |  |  |  |
| Popoff, Phillip | Puget Sound Energy |  |  |  |
| Pyron, Paula | NW Industrial Gas Users |  |  |  |
| Kelly Irvine | Avista Corp. |  |  |  |
| Riding, Clay | Puget Sound Energy |  |  |  |
| Ruben Tavares | CEC |  |  |  |
| Staple, Greg | Spectra Energy |  |  |  |
| Van Vactor, Sam | Economic Insight, Inc. |  |  |  |
| Marc Vatter (alternate) | Economic Insight, Inc. |  |  |  |
| White, Jay | TransCanada |  |  |  |
| Dickens, Bill | Tacoma Power |  |  |  |
| Zimmerman, Ken | Oregon PUC |  |  |  |
|  |  |  |  |  |
| Other Participants |  |  |  |  |
| Jeff King | Jeffery C. King and Associates |  |  |  |
| Ken Corum | NWPCC |  |  |  |
| Lynn Dahlberg | Williams - Northwest Pipeline |  |  |  |
| David White | TransCanada |  |  |  |
| David Clement | Seattle City Light |  |  |  |

Draft Agenda

* Welcome and introductions
  + News from members 10:00-10:30
* Northwest Gas Association 2011 Outlook 10:30-11:00
* What has happened since last meeting 11:00-11:45
  + Comparison to actual prices
  + Update on analytics
  + Short-term Forecast
  + Fuel price poll
* Lunch 11:45-1:00
* Discussion on need for revision to Long-term forecast 1:00-1:45
  + Comparison to other forecasts
* Discussion of other issues raised by NGAC members.
* Next steps

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