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December 3, 2013

MEMORANDUM

TO: Power Committee

FROM: Charlie Black

SUBJECT: Follow Up on Weather and Energy Efficiency Impacts on Loads

At the Power Committee meeting in Boise in November, Massoud Jourabchi presented the forecast of Pacific Northwest electricity loads for use in the regional resource adequacy assessment for 2019. Discussion during the meeting touched on year-to-year upward and downward impacts of weather on regional loads, as well as the more lasting load reductions from energy efficiency achievements.

As follow-up to the discussion at the November committee meeting, staff has prepared two additional documents.

The first follow-up item is the attached memorandum from Massoud Jourabchi providing additional information including a description of how temperature impacts on regional electricity loads are calculated and a comparison of recent regional loads with and without energy efficiency achievements. This memorandum is provided for your review.

The second follow-up item is the attached presentation addressing impacts of weather and energy efficiency on regional electricity loads since 2009. For example, it shows that before adjusting for year-to-year weather impacts, actual regional electricity loads *declined* by 0.9 percent from 2009 to 2012. However, after removing year-to-year weather impacts, regional electricity loads *increased* by 1.3 percent from 2009 to 2012. Meanwhile, during 2010-2012 the region was acquiring several hundred average megawatts new energy efficiency each year. In order to accurately assess the effect of these energy efficiency achievements, it is necessary to compare them with underlying changes in regional loads, after removing year-to-year weather impacts.

At the committee meeting on December 10, Massoud Jourabchi, Tom Eckman and I will present the second attachment and invite discussion about the impacts of weather and energy efficiency achievements on regional electricity loads.

Impacts of Weather on Regional Electricity Loads Since 2009

Presentation to Power Committee

Charlie Black, Massoud Jourabchi
and Tom Eckman

December 10, 2013



Regional Electricity Loads 2009-2012 Actual and Weather-Normalized

System Loads (Average Megawatts)	2009	2010	2011	2012	2009-2012
Actual	20,925	20,348	21,096	20,747	
o Percent Change from Prior Year		-2.8%	3.7%	-1.7%	-0.9%
Normalized for Weather	20,704	20,640	20,791	20,972	
o Percent Change from Prior Year		-0.3%	0.7%	0.9%	1.3%
Weather-Caused Load Increase or (Decrease)	221	(292)	305	(225)	



What Loads Should We Use to Assess Progress in Implementing Conservation?

- **Normalization for Weather Impacts is Necessary**
 - Sixth Plan conservation savings are “weather normalized”, i.e., based on 30-year average temperature and solar conditions
 - The impact of year-to-year variations in temperature on regional loads is (at least recently) of the same magnitude as annual conservation savings



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Upcoming Discussion at January Meeting

- **Final 2012 conservation achievements and expenditures**
- **Projected conservation acquisitions for 2013-2015**
- **Impacts during 2010-2012 of conservation on weather normalized regional load growth**
- **Comparison of 2010-2015 achievements and projections to corresponding Sixth Plan conservation targets**



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