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June 25, 2010

## MEMORANDUM

**TO:** Power Committee

**FROM:** Massoud Jourabchi

**SUBJECT:** Short-term Demand Forecast 2010-2015

As a regular part of the Council's monitoring of the power plan's assumptions and implementation, staff reviews load data when it becomes available and updates the short-term model structure and forecasts. Staff has recently reviewed new data for the 2009 hourly regional loads, the monthly sales for January-March 2010, and a revised employment forecast for 2010-2015. Staff has updated the short-term model with the new information and has compared it to the NRF forecast of regional loads for 2010-2015.

Staff's review of the newly released information indicates:

- The economic recovery has been slower than previously forecasted
- The analysis shows that the regional electricity annual load declined significantly in 2009. However, the regional winter and summer peaks grew significantly, due to the impact of weather on peak loads. In 2009, annual energy in the region declined by about 730 MWa, while regional peak grew by about 1,000 MW in the summer and 1,350 MW in the winter.
- The first three months of 2010 show a decline in the commercial and residential sector sales, mostly due to warm winter temperatures. The average temperature was about 21% above its 30-year norm. While the electricity demand from residential and commercial sectors declined by about 1,150 MWa, industrial sector sales actually grew by about 220 MWa, most noticeably in Washington and Idaho.

Staff also has projected the power outlook for 2010-2015. During the next six years, the non-DSI loads with normal weather conditions are expected to grow by about 450 MWa and peaks are expected to grow by about 1,000 MW in the summer and 1,100 MW in the winter. These forecasts are net of the implicit conservation levels in the short-term model, which are found to be consistent with the Sixth Plan conservation targets.

In addition, staff has compared the outlook for 2010 through 2015 with the projections prepared by PNUCC and presented in the 2010 NRF. The comparison shows that over the next three years, the Council and NRF forecasts are very close; however, by the end of 2015 the two forecasts deviate by about 500 MWa. The difference between the projections can be attributed to a difference in the vintage of the two forecasts and the level of conservation incorporated in the forecasts. Over the 6-year period, the NRF reports about 1,150 MWa for cumulative conservation resources, compared to about 1,460 MWa identified in the Sixth Plan. This difference merits a closer examination.

# Short-term Demand Forecast 2010-2015

July 8, 2010

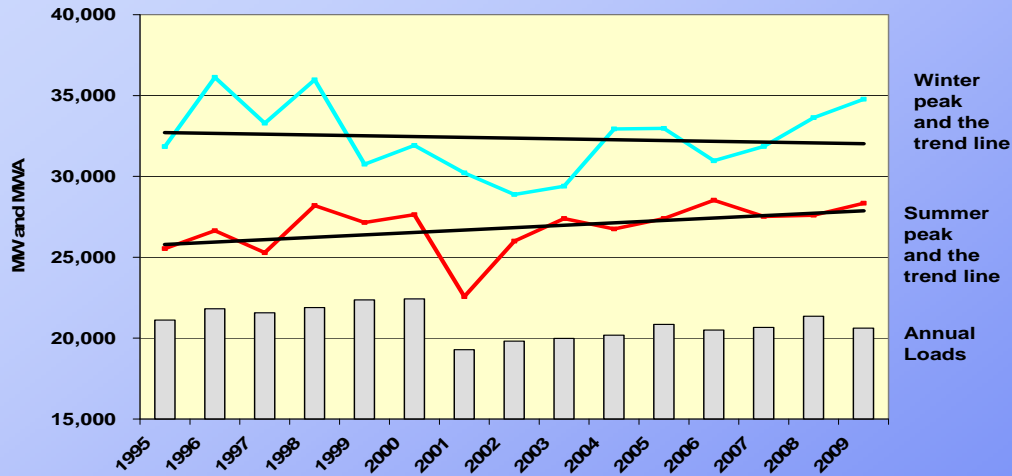
Massoud Jourabchi

## Today's presentation covers

- Review of loads in 2009 and years past
- Review of sales in the first 3 months of 2010.
- Changes to the Short-term forecasting model
- Outlook for 2010-2015
- Comparison to NRF

# In 2009 Annual load decreased by 730 MWa or roughly 3%

Regional Annual and Single Hour Peak Loads 1995-2009



In 2009 Summer of was warmer and winter was cooler then norm.

System peaks continued fast growth.

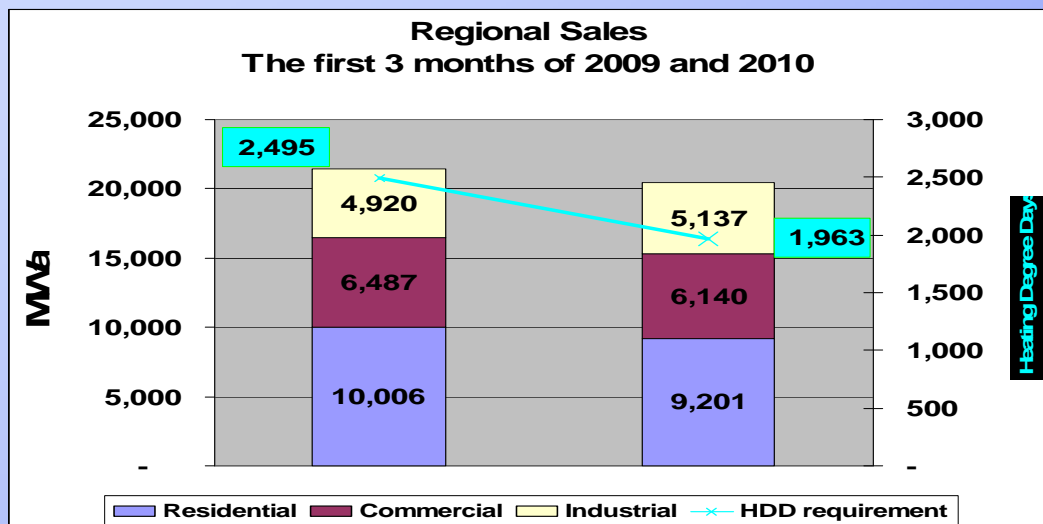
Summer peak grow by 950 MW or about 3.5%

Winter peaks increased by 1,340 MW or about 4.0%

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# Regional Sales Continue to Decline in the first 3 months of 2010

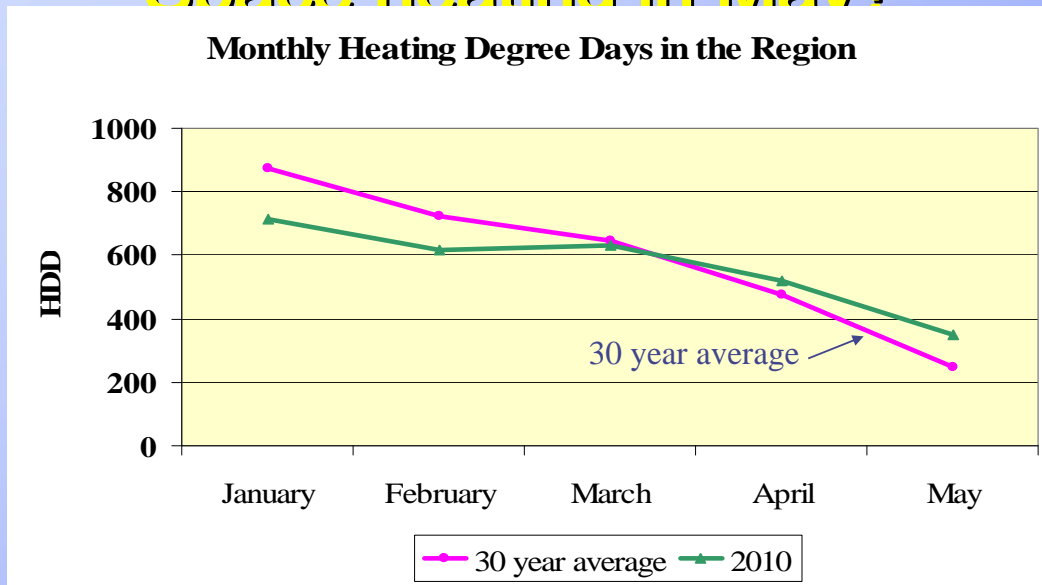


- Sales figures shown are not adjusted temperature
- Industrial sector sales indicate some recovery
- Residential and commercial sector show decline
- The declines in sales in large part is due to warmer winter temperatures
- The regional temperature in the first three months of 2010 were 9% warmer than the 30 year average and January 2010 was 20% warmer than January 2009

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# Space heating in May?



In 2010 Heating Degree Days decreased in January, February while increasing in April and May.

Does this suggest a new pattern for space heating in the region?

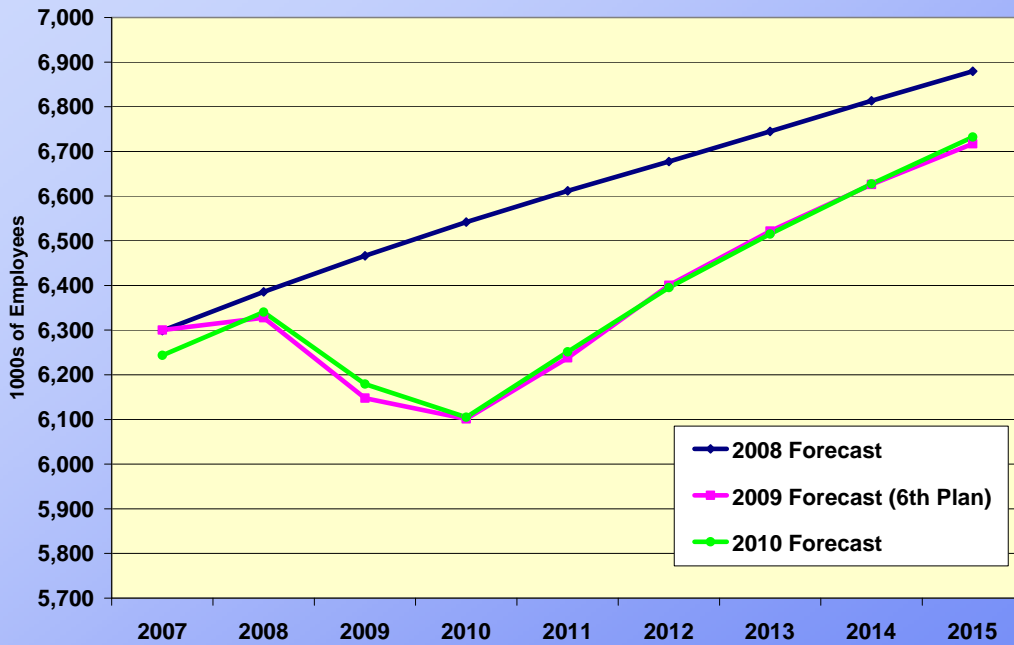


## Changes to the short-term forecasting model

- The short-term model was re-estimated using 1995-2009 hourly loads.
- The forecast of regional employment, the key driver to Council's short-term forecast, was updated using Global Insights June 2010 forecast. Economic recovery slower than was anticipated back in September 2009.
- Conservation targets in the long and short-term models were compared and found to be consistent.



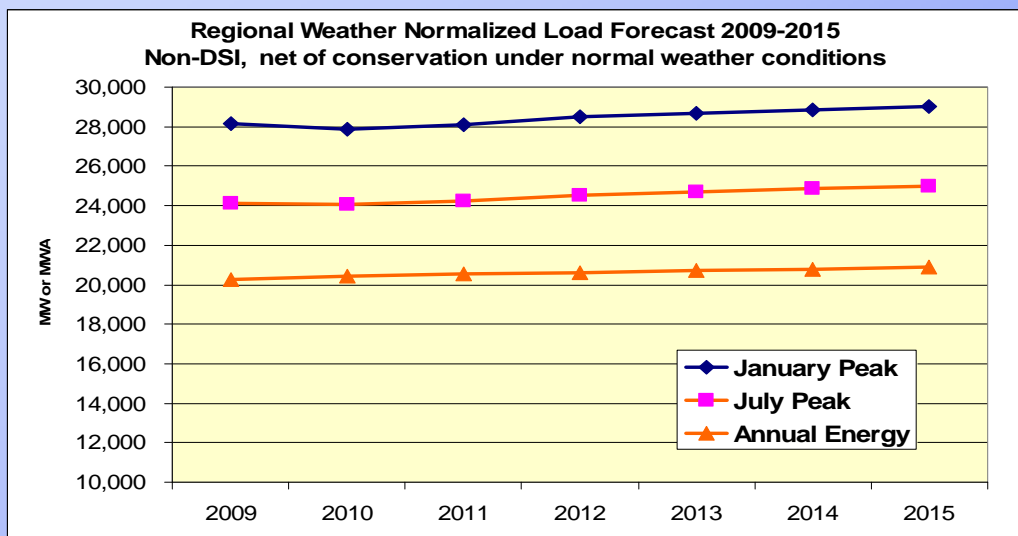
# Employment Forecasts



Employment forecast relatively stable for 2012-2015.



# Over the next 6 years regional loads Forecasted to grow slightly

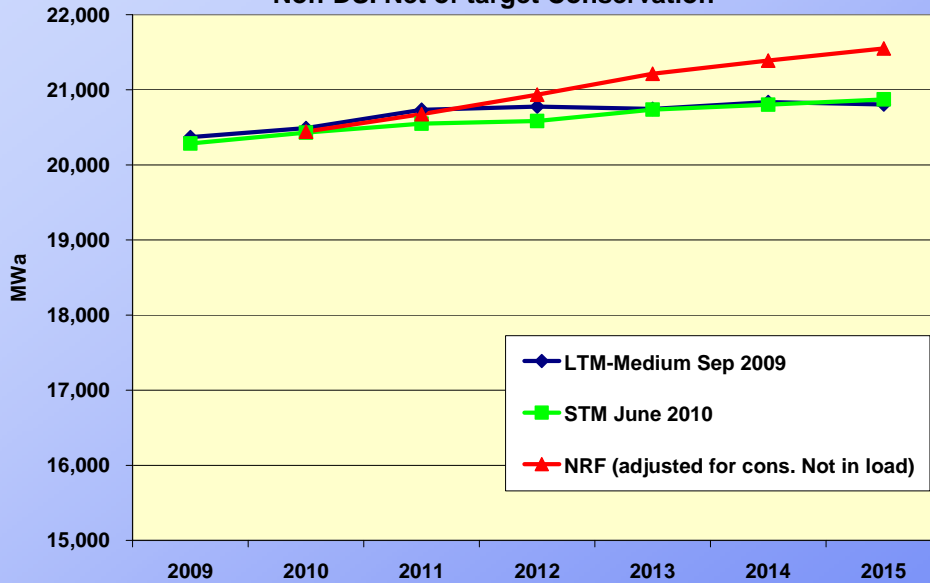


Cumulatively Energy to grow about 500  
MWA Winter and Summer peak to grow by  
about 1000 MW each



# Comparison to Other Forecasts

Comparison of Annual Load Forecasts  
Non-DSI Net of target Conservation

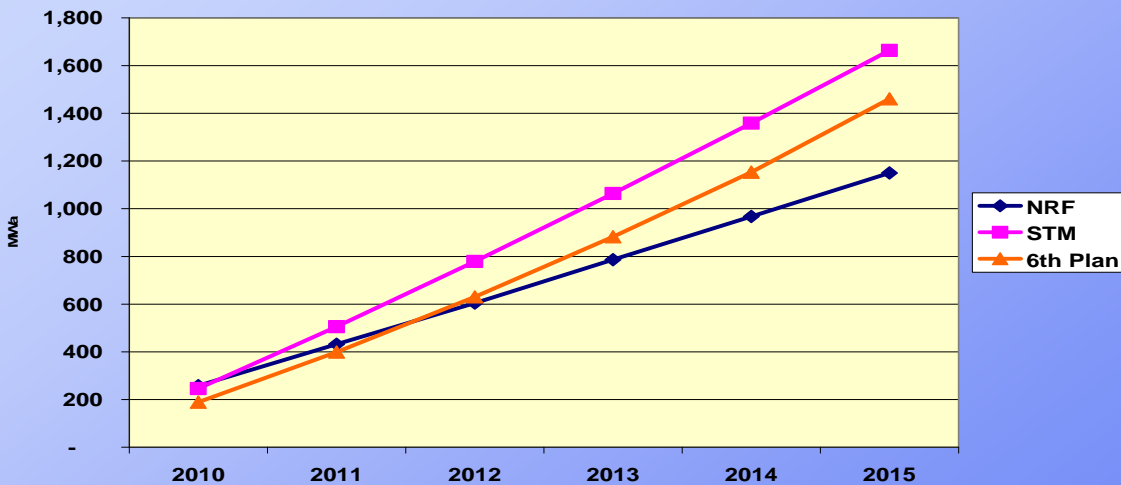


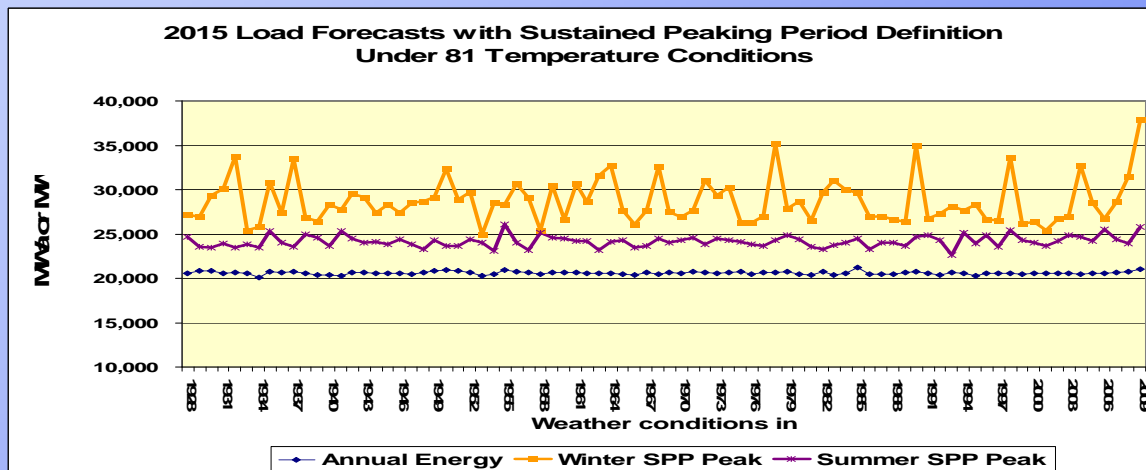
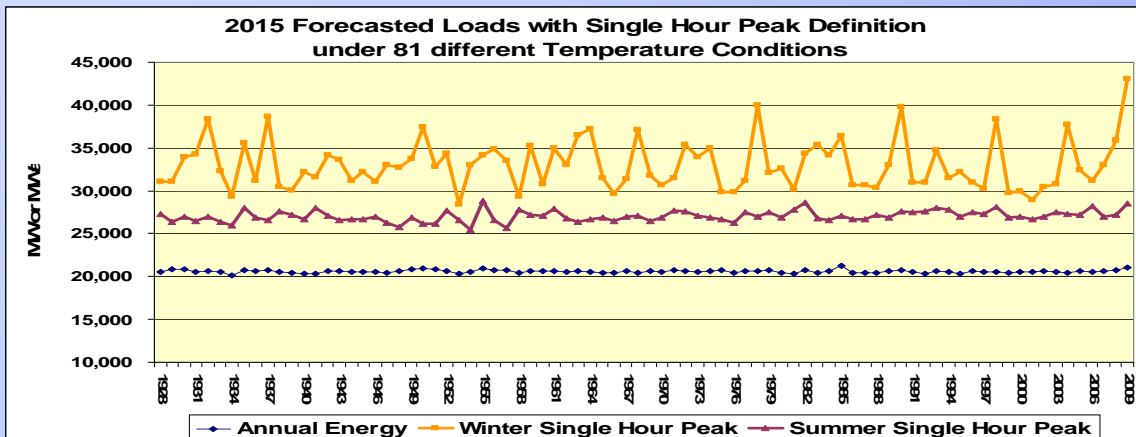
Forecasts are very close in the next three years  
In longer terms departing slightly due to difference in data vintage  
and conservation target assumption.



## Comparison of NRF and the 6<sup>th</sup> plan shows levels of conservation acquisitions are close in the next three years.

Comparison of Cumulative Conservation Levels  
2010-2015





## In summary

- Over the 2010-2015 period, the short-term forecast for weather-normalized, non-DSI loads net of conservation targets is:
  - Energy to grow by about 2.9% or about 500 MWa
  - Winter peak to grow by about 2.9% or about 1,000 MW
  - Summer peak to grow by about 3.6% or about 1,000 MW.
- The Council's load forecasts is close to the NRF 2010, however treatment of conservation merits further review.