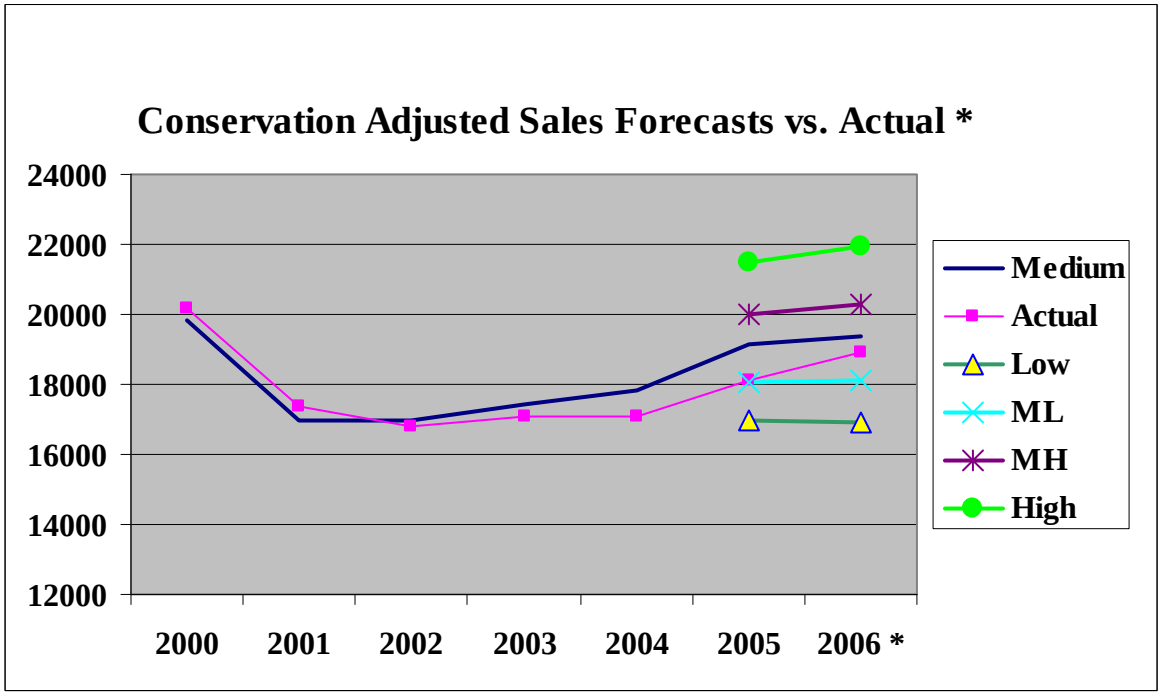
Biennial Review of the Fifth Power Plan

Interim Report on Electricity Demand Forecast

A 20-year forecast of electricity demand is a required component of the Council's Northwest Regional Conservation and Electric Power Plan. In the Fifth Plan, electricity demand was forecast to grow from 20,080 average megawatts in 2000 to 25,423 average megawatts by 2025 in the medium forecast. The average annual rate of growth in this forecast is just less than 1 percent per year. This is slower demand growth than forecast in the Council's Fourth Power Plan, which grew at 1.3 percent per year from 1994 to 2015.

As a result of the 2000-01 energy crisis, regional sales of electricity went down by about 2,800 MW, from 20,082 average megawatts in 2000 to 17,255 aMW by the end of 2001. The bulk of the decline in sales was in the direct service industry (mostly aluminum), which decreased from 2,477 aMW in 2000 to 287 aMW by 2001. Since 2001, regional demand has been recovering. By 2005, most sectors except industrial had recovered to their 2000 sales levels. In aggregate, the actual sales of electricity have been consistent with the medium-low to medium forecasts. Figure 1 shows the comparison between forecast and actual sales (2006 figures are an extrapolation based on growth rates in the first six months of 2006).

Figure-1



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Regional Economy

The growth in regional economic parameters has been moderate. After the mild recession of 2001-2002, the region's economy has been growing at a significantly faster rate than the national economy. The data shown in Table 1 present the recent trends in population, regional output, employment and electricity sales. The economic picture of the region indicates a steady recovery over the last few years. During the 2000-2005 period, the Northwest regional economy grew at an annual rate of 3.5 percent compared to a national growth rate of 3 percent.

Table 1- Regional Economy and Electricity Sales

	2001	2002	2003	2004	2005*	Growth Rate 2000-2005
Population (millions)	**11.69**	**11.84**	**11.98**	**12.12**	**12.28**	**1.2%**
Gross State Product (2000$ M)	**388**	**394**	**401**	**423**	**445**	**3.5%**
Employment (thousands)	**7022**	**6994**	**7043**	**7216**	**7438**	**3.5%**
Electricity Sales MWa	**17255**	**16756**	**17294**	**16733**	**18225**	**1.4%**

Compared to the 2000 level of sales, all sectors except industrial have recovered and increased their sales. Table 2, and Figures 2 and 3 show the actual sales for 2000, 2001, and 2005 as well as what the medium forecast for 2005 was. In aggregate, forecasted demand was above the actual by 1,166 MWa, mainly due to slow recovery of the industrial sector.

Table 2- Actual and Forecasted Sales (Average Megawatts) Weather Adjusted

	2000	2001		2005	2005	2005	2000-2005
	Actual*	Actual*		Actual**	5th Plan Medium Forecast	Difference from forecast	Average annual Growth Rate
Commercial	**5,219**	**5,058**		**5,823**	**5,453**	**370**	**2.2%**
Residential	**6,724**	**6,571**		**7,252**	**7,262**	**-10**	**1.5%**
Industrial	**7,315**	**4,688**		**4,205**	**5,862**	**-1,657**	**-10.5%**
DSI	**2,477**	**287**		**311**	**958**	**-647**	**-34.0%**
Non-DSI	**4,838**	**4,401**		**3,894**	**4,904**	**-1,010**	**-4.3%**
Irrigation	**652**	**742**		**756**	**629**	**127**	**3.0%**
Other	**172**	**196**		**189**	**185**	**4**	**1.9%**
Total Sales	**20,082**	**17,255**		**18,225**	**19,391**	**-1,166**	**-1.9%**
Total Non-DSI Sales	**17,605**	**16,968**		**17,914**	**18,433**	**-519**	**0.3%**

*- Weather adjusted ** Preliminary

Figure- 2

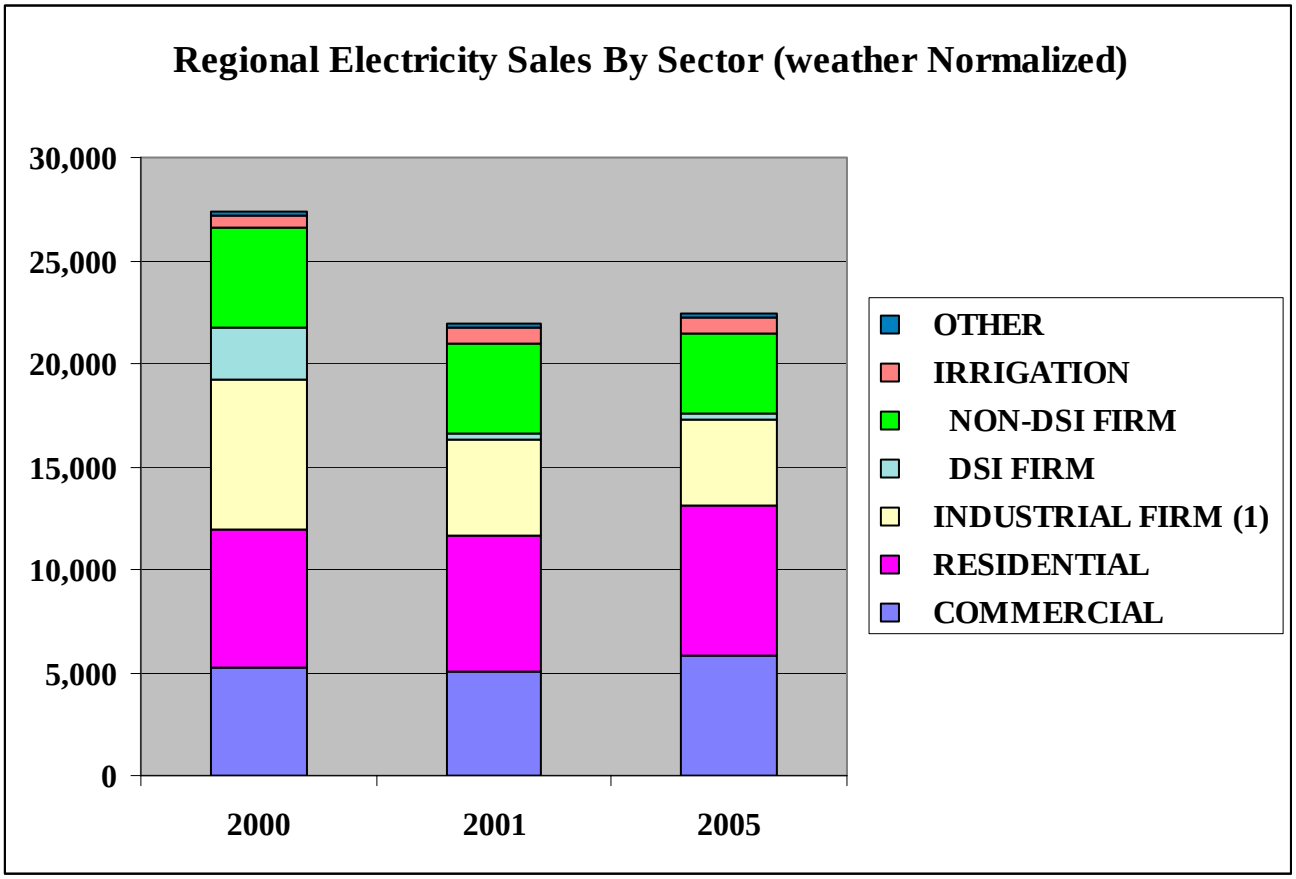
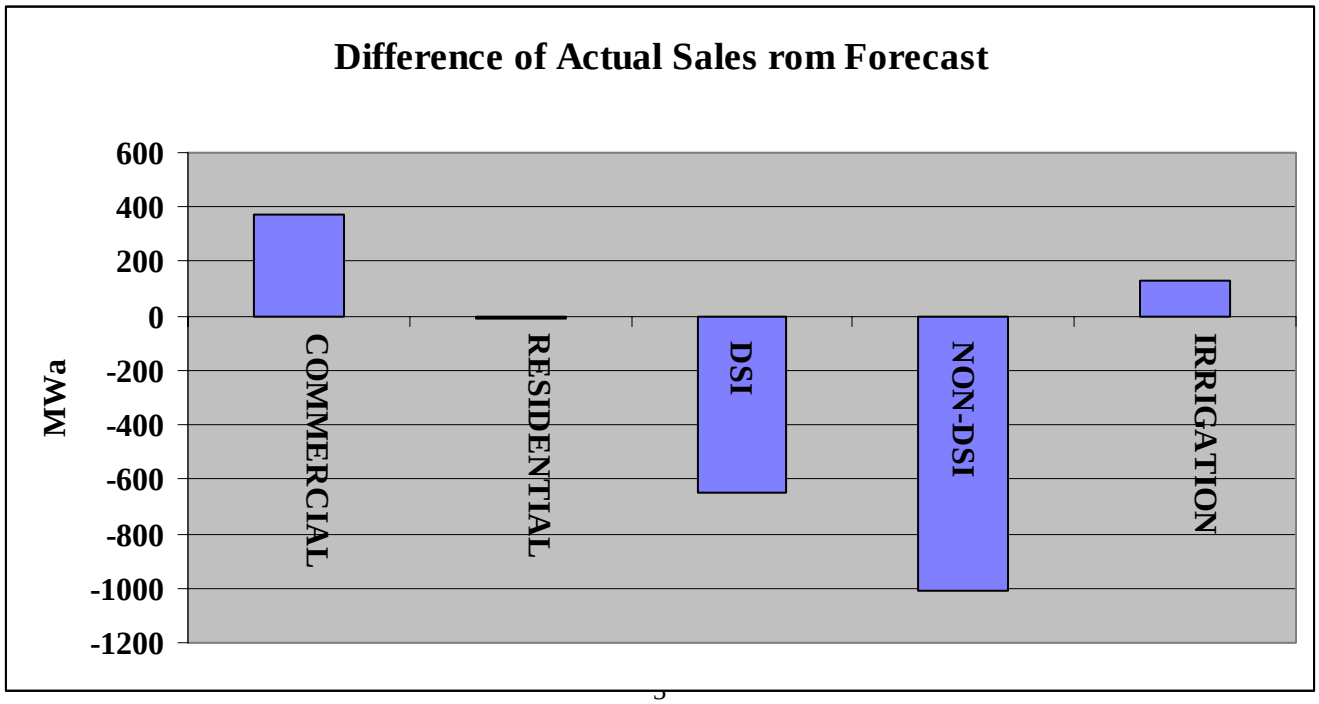


Figure- 3



Residential Sector

Population and the number of households in the region increased at an average annual rate of 1.3 percent between 2000 and 2005. Preliminary estimates for 2005 show that electricity sales to the residential sector kept up with population growth, at about 1.5 percent per year, while the electricity consumption per household was consistent with the long-term trends. The Plan's forecast of residential electricity sales for 2005 was 7,262 MWa, preliminary estimates put the actual sales in 2005 at 7,252 MWa. This suggests that the residential forecast is on track with the actual.

Commercial Sector

The key drivers for energy demand in the commercial sector are employment, output produced in the service sector, and the building square footage engaged in various activities in the sector. Commercial employment in the region represented about 80 percent of total employment and about 77 percent of regional output. Between 2000 and 2005, commercial sector employment grew at a rate of 3.1 percent per year, while, on a constant 2000-dollar basis, the output from this sector grew at 2.3 percent per year, and demand for electricity in this sector has grown at 3.6 percent per year. Increases in commercial sector employment and output have translated into 219 million square feet of new commercial floor space between 2001and 2004. The preliminary estimate for commercial sector electricity consumption in 2005 is 5,823 MWa; the medium forecast for electricity sales to this sector is 5,453 MWa by 2005.

Non-DSI Industrial Sector

Between 2000 and 2005, manufacturing employment decreased at the rate of 4.2 percent per year. In the first four years of this period, the real value added from the manufacturing sector grew at 4 percent per annum. During the same period, sales of electricity to the non-DSI manufacturing sector decreased by 4.3 percent per year, dropping from 4,838 MWa in 2000 to about 3,900 MWa in 2005. The increase in manufacturing output, combined with reduced levels of employment and a decline in electricity sales reflect the continued trend toward fewer electricity intensive industries in the region and higher labor productivity. The Plan's forecast for electrical use by non-DSI Industrial sector for 2005 was 4,900 MWa compared to the actual level of 3,900 MWa.

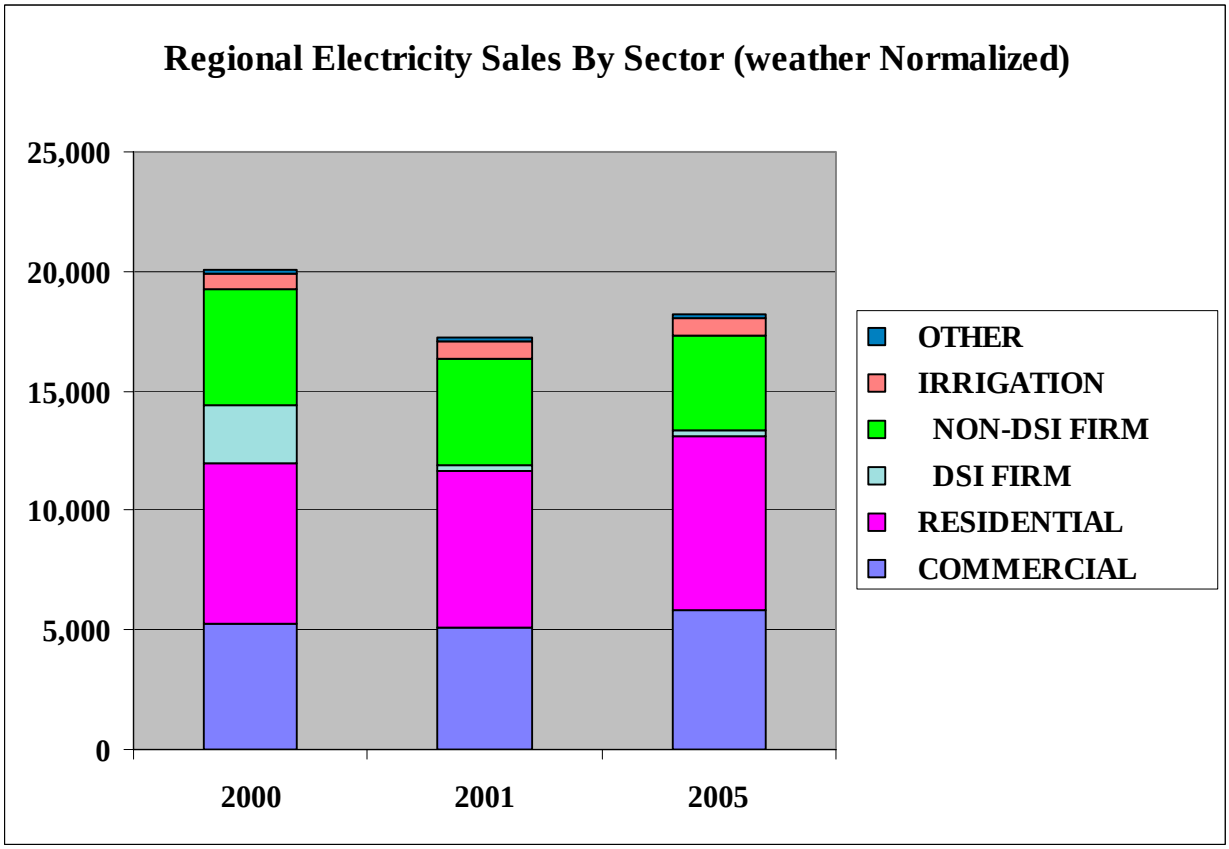
Direct Service Industries: Aluminum smelters account for most of the industrial load served directly by Bonneville. Aluminum smelters have not recovered from the 2000-2001 energy crisis. By 2005 only three smelters, Wenatchee, Alcoa Ferndale (Intalco), and Columbia Falls operated a total of four potlines. The combined load of smelters operating in 2005 was about 300 MWa compared to over 2,400 MWa in 2001. The medium forecast expectation was for a higher level of DSI operation at 900 MW by 2005.

Northwest Power and Conservation Council

Correction to Figure 2 in the Demand Forecast Report

The following figure is the correction to "Figure 2" in the "Biennial Update to Electricity Demand Forecast" report. The incorrect figure had included Industrial Firm sales as well as its components, DSI and Non-DSI, double counting the industrial sales in the graph.

Figure 2



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Biennial Review of Demand Forecast

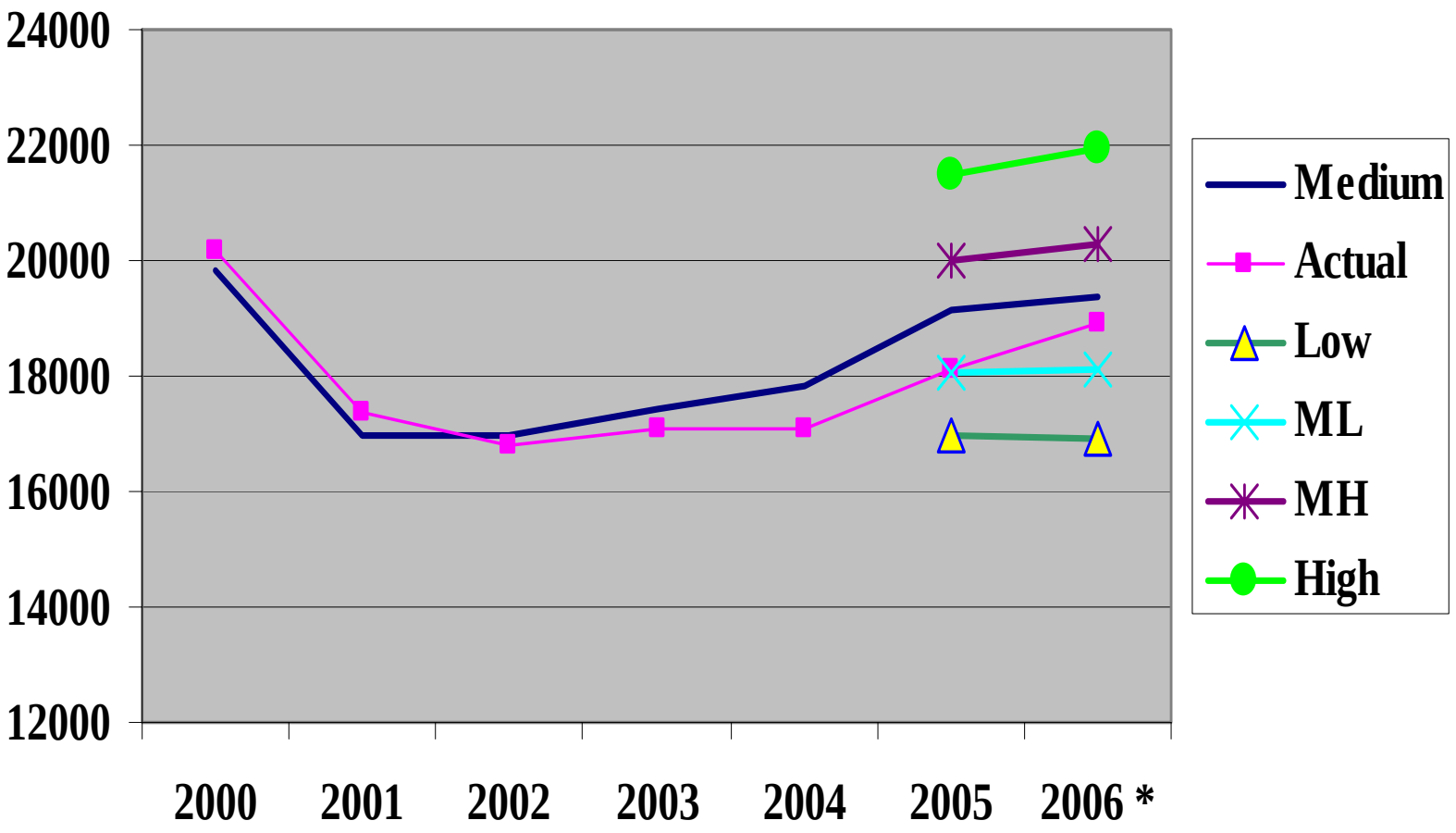
October 17th 2006

Northwest Power and Conservation Council

Review of NW Sales

- Sales
  - ~20082 MWa in 2000
  - ~18123 MWa in 2005
  - ~18892 MWa in 2006
- 5th Plan Medium Forecast
  - ~19400 MWa in 2005
  - ~19600 MWa in 2006
  - ~19900 MWa in 2007
- Sales recovering, slower than forecast
- Sectoral recovery is different than anticipated
- Actual (preliminary) estimates for 2006 puts them within Med-Low and Medium Forecast

Conservation Adjusted Sales Forecasts vs. Actual *



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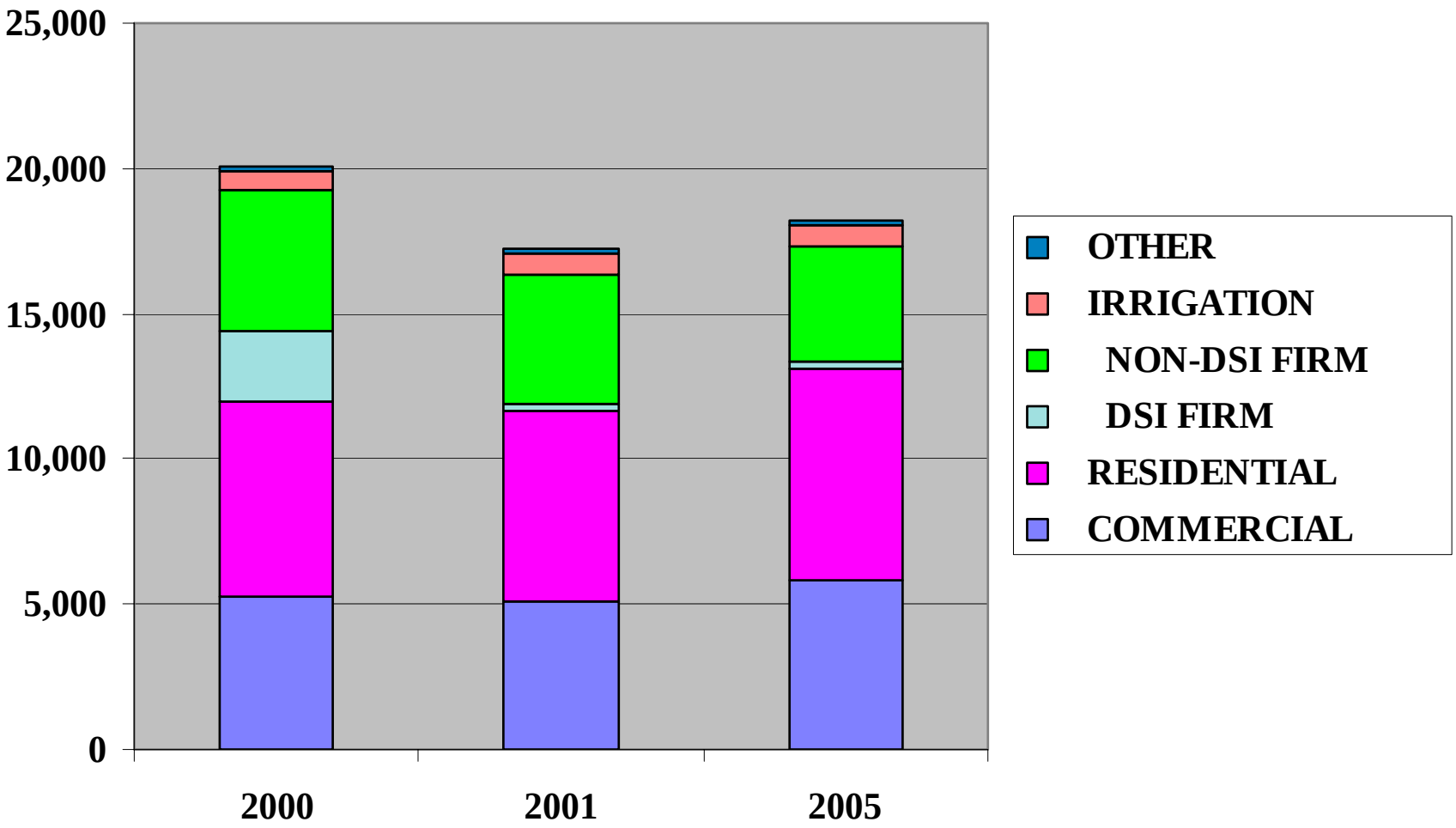
Regional Electricity Sales By Sector (weather Normalized)



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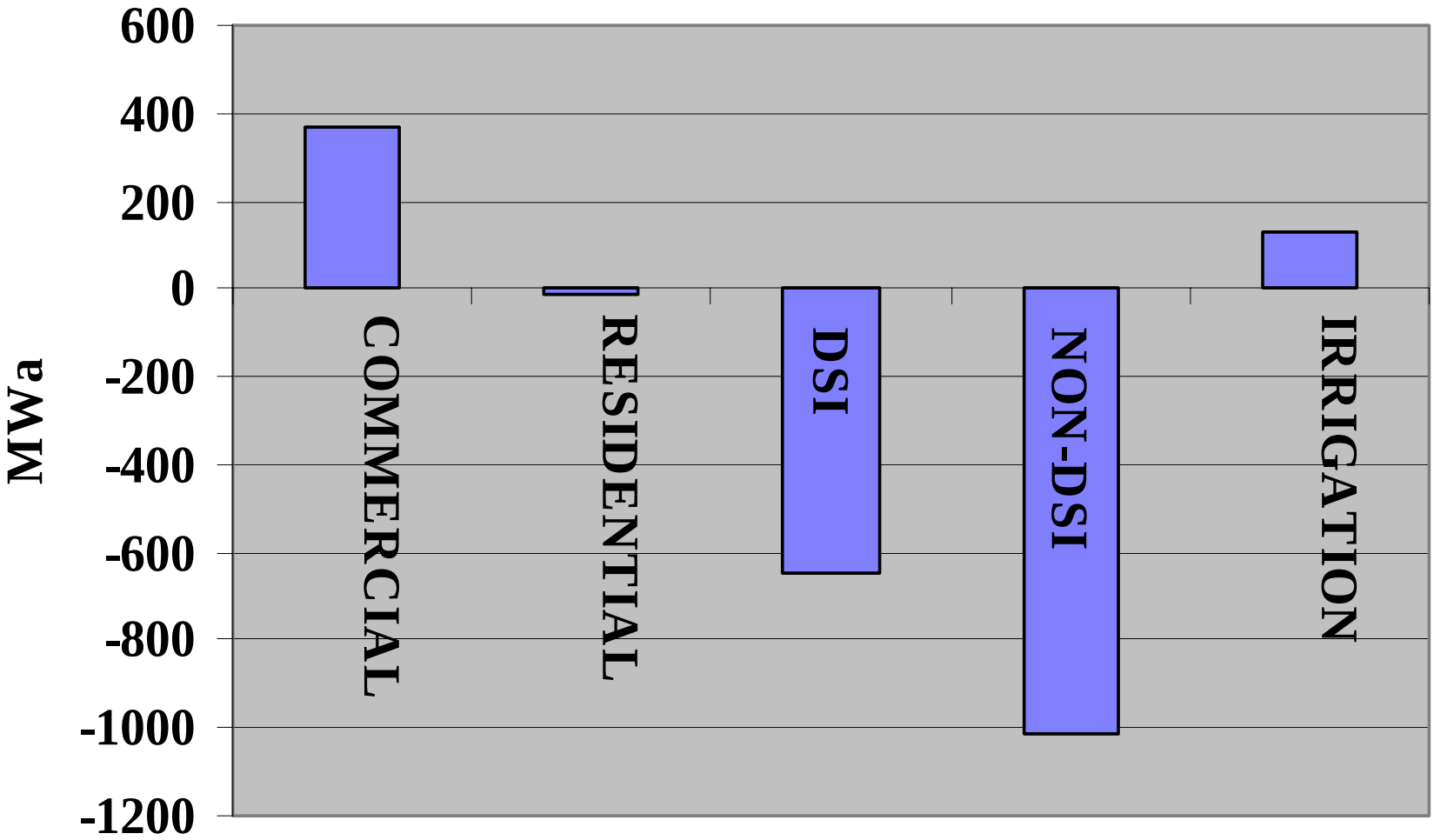
Difference of Actual Sales from Forecast (2005)



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Actual within MedLow to Medium Range of Forecast

	2006	% Difference
Medium Low Forecast	**18,140**	**4%**
Actual Sales (Preliminary)	**18,892**	
Medium Forecast	**19,346**	**-2%**
Medium High Forecast	**20,285**	**-7%**

- Differences in part due to- Actual sales being preliminary and not weather adjusted

- No material change in the long-term forecast.
- Implications for short-term assessments (regional resource adequacy) needs to be evaluated.