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May 5<sup>th</sup> 2011

## MEMORANDUM

**TO:** The Power Committee

**FROM:** Massoud Jourabchi

**SUBJECT:** 2010 in Review: Economy, Sales, and Prices

Staff has prepared a review of the economy, fuel prices, and electricity consumption levels in 2010. Although the 2010 regional economic picture shows overall improvement suggesting growth in sales, the warmer than normal winter temperatures and cooler than normal summer temperatures helped keep electricity sales down. The preliminary sales figures indicate a decline of about 150 average megawatts (MWA) in 2010 when compared to 2009. If the regional temperatures were "Normal" loads would have increased by 284 MWA. The weather normalized sales reflect the greater role weather condition is playing in determining the regional sales.

Review of fossil fuel prices indicate that gas prices in 2010 were in the low range of forecasted prices, \$3.78 per million Btu, compared to the medium base forecast of \$4.30 per million Btu. Oil prices, on the other hand, were higher than anticipated, falling in the medium-high to high range of the forecast for 2010 at \$70.53 per barrel compared to \$65 per barrel in the medium forecast. Powder River Basin Coal prices were also near the high end of the forecast range for 2010. Powder River Basin coal averaged about \$12.50 per short ton in 2010, compared to the high forecast of \$12.00 per short ton.

Review of the wholesale and retail prices of electricity indicate that the wholesale price at Mid-C was close to the medium price forecast. The retail price of electricity was very close to the forecast of average revenue requirement per megawatt-hours. In constant 2006 prices, the average regional retail rate was \$66.51 per megawatt-hour compared to the forecast figure of \$66.92.

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# 2010 IN REVIEW: ECONOMY, SALES & PRICES

Massoud Jourabchi

May 2011

# IN THIS PRESENTATION

- 2010 in review:
  - Economy
  - Weather
  - Fuel Prices
  - Sales

# SUMMARIZING ECONOMIC CONDITIONS (COINCIDENT INDEXES)

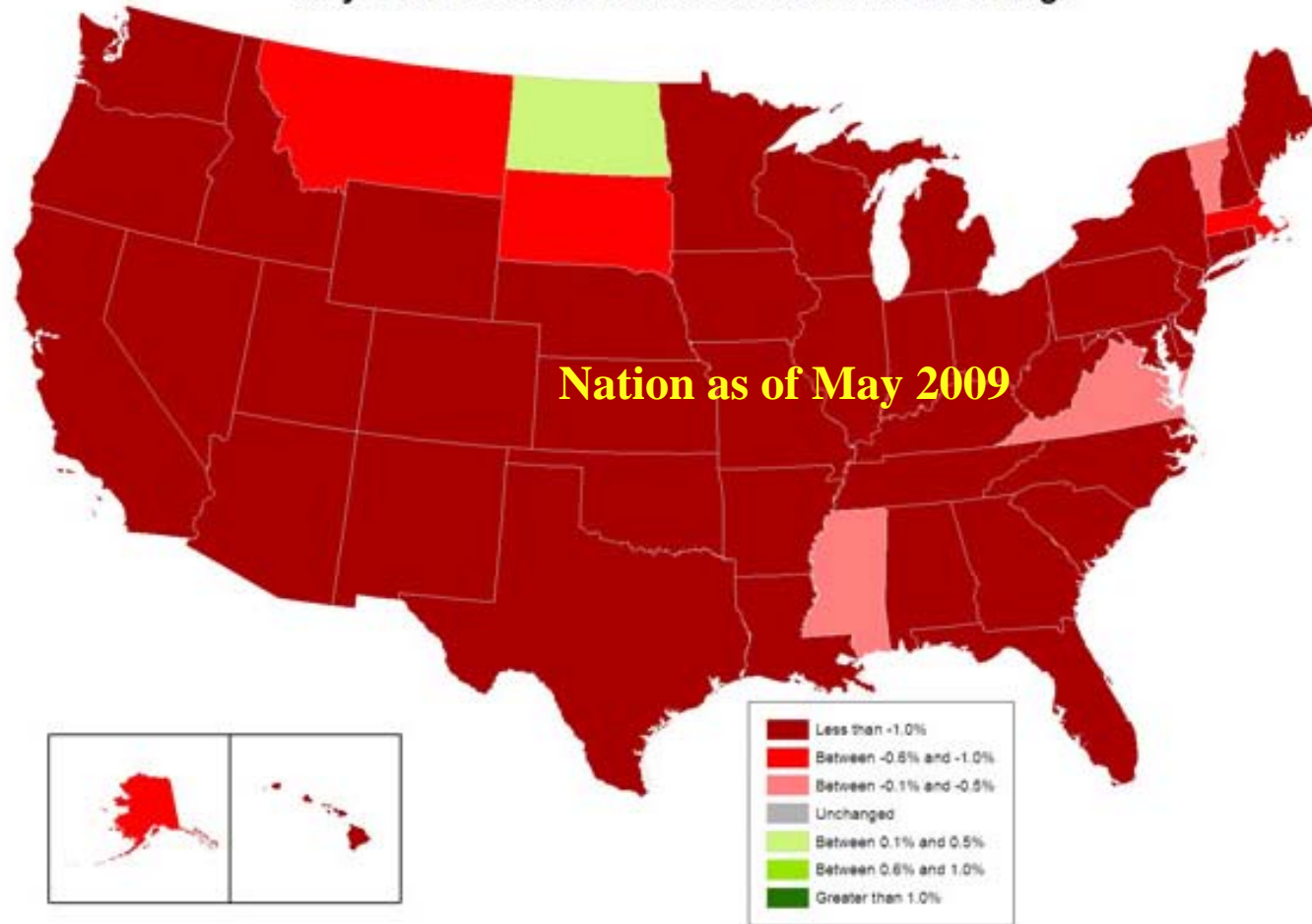
The Federal Reserve Bank of Philadelphia produces statistics that track the current state of the economy using four state-level indicators:

- ◉ Non-farm payroll employment,
- ◉ Average hours worked in manufacturing,
- ◉ The unemployment rate,
- ◉ Wage and salary disbursements deflated by the consumer price index (U.S. city average).

# ECONOMY:

## TWO YEARS AGO LAGGING INDICATORS WERE SEEING ALL RED

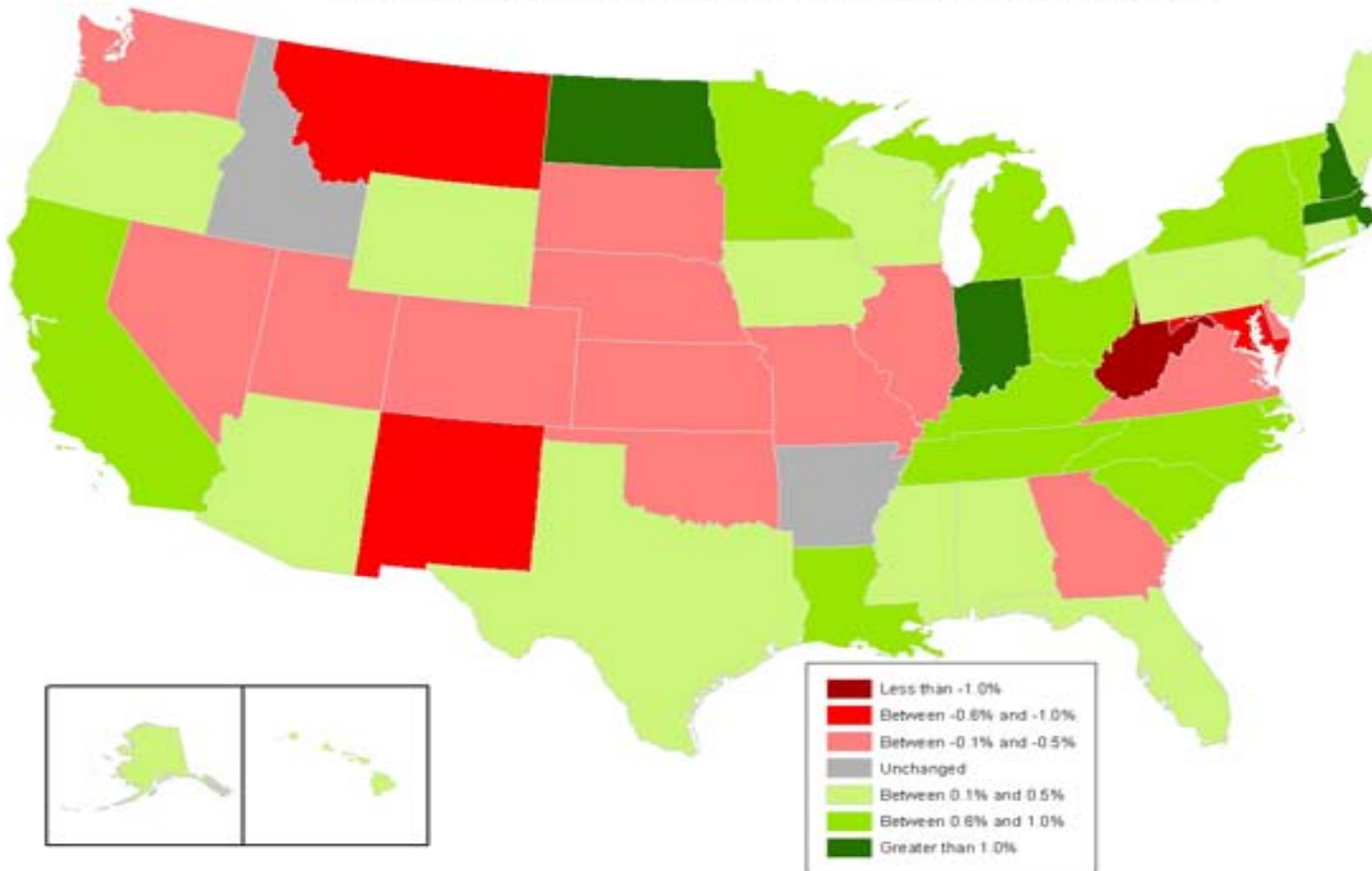
May State Coincident Indexes: Three-Month Change



|             | Percent Change |
|-------------|----------------|
| Deep Red    | Less than -1.0 |
| Red         | -0.8 to -1.0   |
| Pink        | -0.1 to -0.5   |
| Gray        | No change      |
| Light Green | 0.1 to 0.5     |
| Green       | 0.8 to 1.0     |
| Deep Green  | Greater than 1 |

# BY MARCH 2010 INDICATORS SHOWED SOME IMPROVEMENT

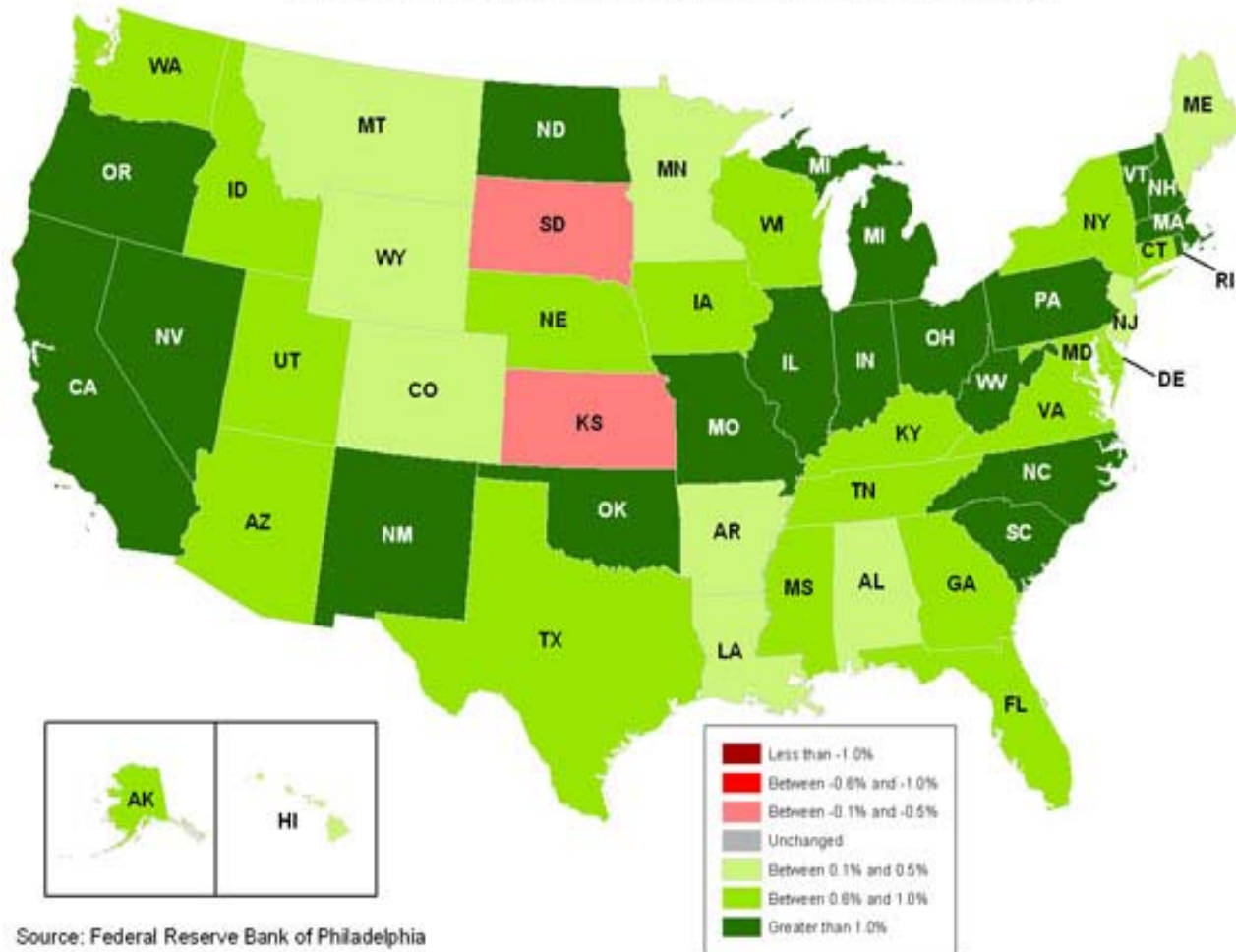
March State Coincident Indexes: Three-Month Change



|             | Percent Change |
|-------------|----------------|
| Deep Red    | Less than -1.0 |
| Red         | -0.8 to -1.0   |
| Pink        | -0.1 to -0.5   |
| Gray        | No change      |
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| Green       | 0.6 to 1.0     |
| Deep Green  | Greater than 1 |

# BY MARCH 2011 REGION SHOWS IMPROVEMENT

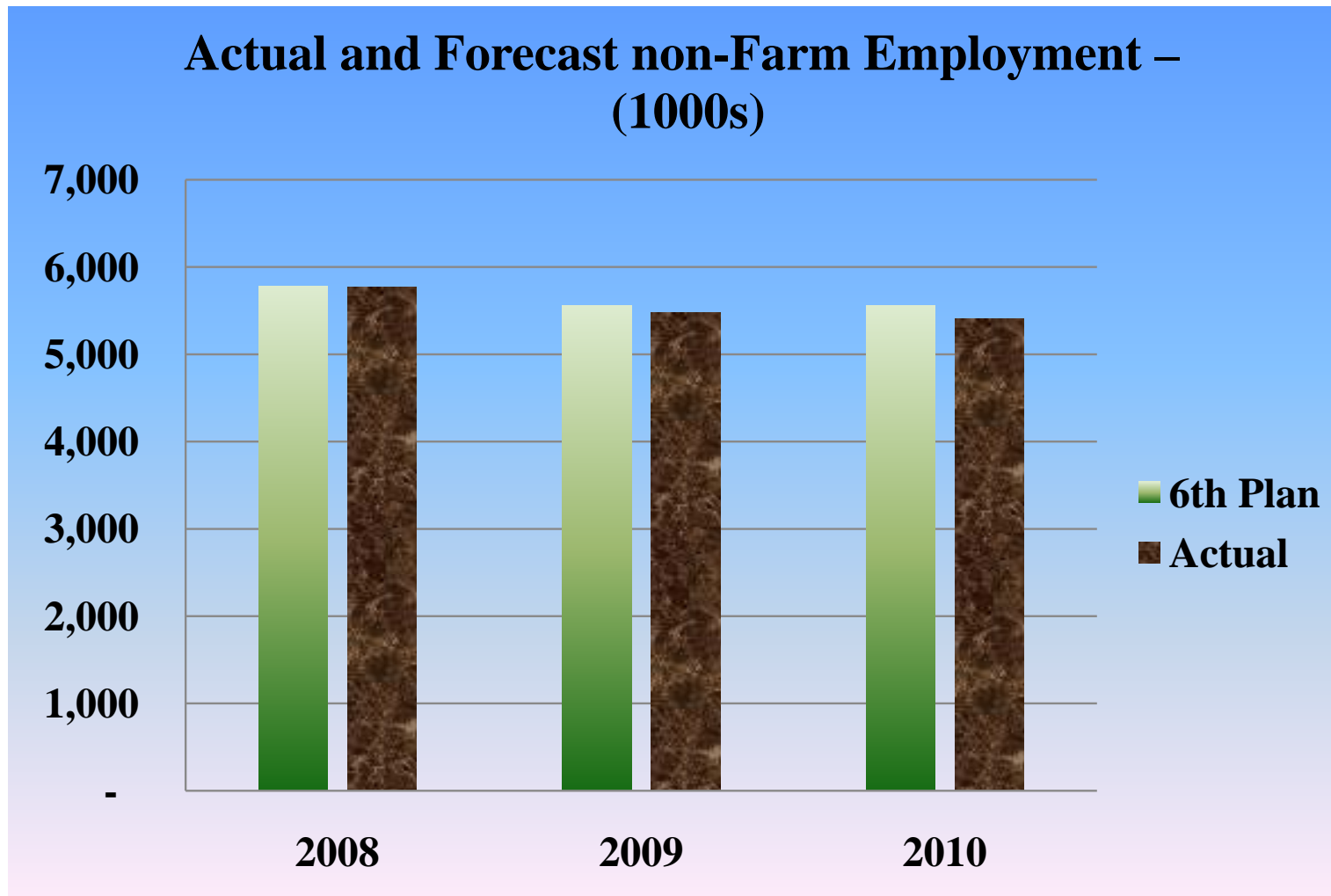
March State Coincident Indexes: Three-Month Change



Source: Federal Reserve Bank of Philadelphia

|             | Percent Change |
|-------------|----------------|
| Deep Red    | Less than -1.0 |
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# OUR FORECAST FOR EMPLOYMENT WAS 2-3% ABOVE ACTUAL





# MAJOR FACTORS INFLUENCING SALES

- ◎ Economy
- ◎ Temperature conditions
- ◎ Fuel Prices
- ◎ Sales

COMMERCIAL AND RESIDENTIAL SECTOR SALES ARE SENSITIVE TO WEATHER (TEMPERATURE) CONDITIONS, SO TO UNCOVER TRENDS, WE NEED TO ADJUST FOR THE IMPACT OF WEATHER CONDITIONS

in 2010:

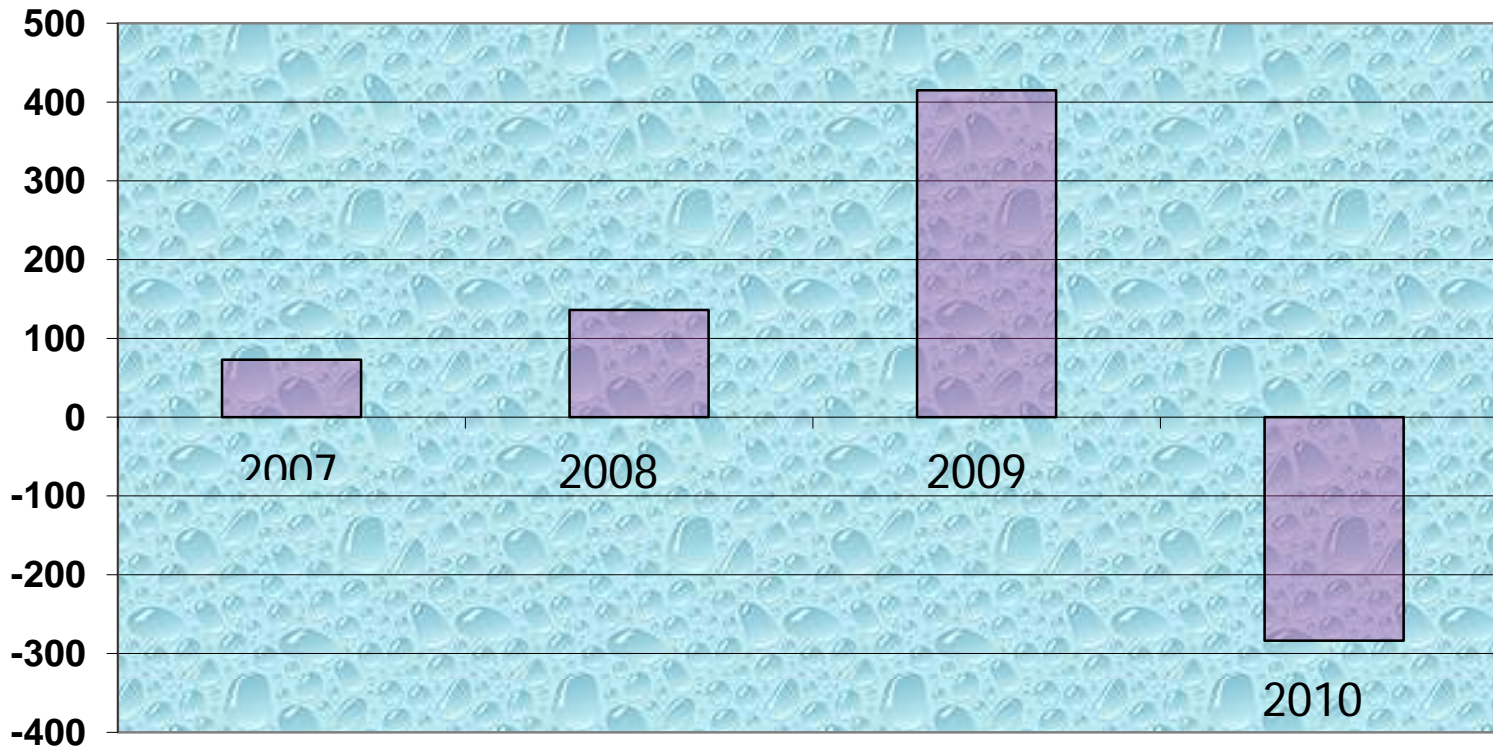
- Cooling requirements were 15% below normal
- Heating requirements were 2% below normal
- Observed sales suggest a decline, but adjusted sales shows growth.

|             | Comparing 2009 to 2010 Sales (MWA) |                         |
|-------------|------------------------------------|-------------------------|
|             | With Actual Temperature            | with Normal Temperature |
| COMMERCIAL  | -259                               | 162                     |
| RESIDENTIAL | -276                               | 2                       |

Residential sector sales would have been 2 MWA higher with normal temp. Commercial sector would have been about 162 MWA or 3% higher.

# SWINGS IN TEMPERATURE IMPACT SALES

**Change in SALES due to weather 2007-2010  
MWa**



Negative values show by how much sales were lowered due to temperature

# MAJOR FACTORS INFLUENCING SALES

- ⦿ Economy
- ⦿ Temperature conditions
- ⦿ Fuel Prices
- ⦿ Sales

# NOW LET'S COMPARE ACTUAL AND THE 6<sup>TH</sup> POWER PLAN ASSUMPTIONS :

- ◉ Natural gas prices - Lower
- ◉ Crude Oil prices - Higher
- ◉ Powder River Basin Coal prices - Higher
- ◉ Electricity wholesale and retail prices- Lower

Note: All prices shown are in 2006 dollars

# WELLHEAD NATURAL GAS

## 6<sup>th</sup> Plan's forecast for 2010 (2006\$)

- Low \$3.75
- Medium Low \$4.00
- Medium \$4.30
- Medium High \$4.60
- High \$5.00

Actual \$3.78



# CRUDE OIL

## 2010 Forecast (2006\$/bbl)

- Low \$55
- Medium Low \$60
- Medium \$65
- Medium High \$70
- High \$75

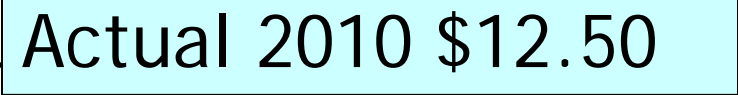
← Actual 2010 \$70.53

# POWDER RIVER BASIN COAL

## ○ 2010 Forecast (2006\$ per ton)

- Low \$7.60
- Medium Low \$8.50
- Medium \$9.40
- Medium High \$10.30
- High \$12.0

Actual 2010 \$12.50





# WHOLESALE PRICE OF ELECTRICITY AT MID C 2006\$/MWH

## ○ 6<sup>th</sup> Plan's forecast for 2010 (2006\$)

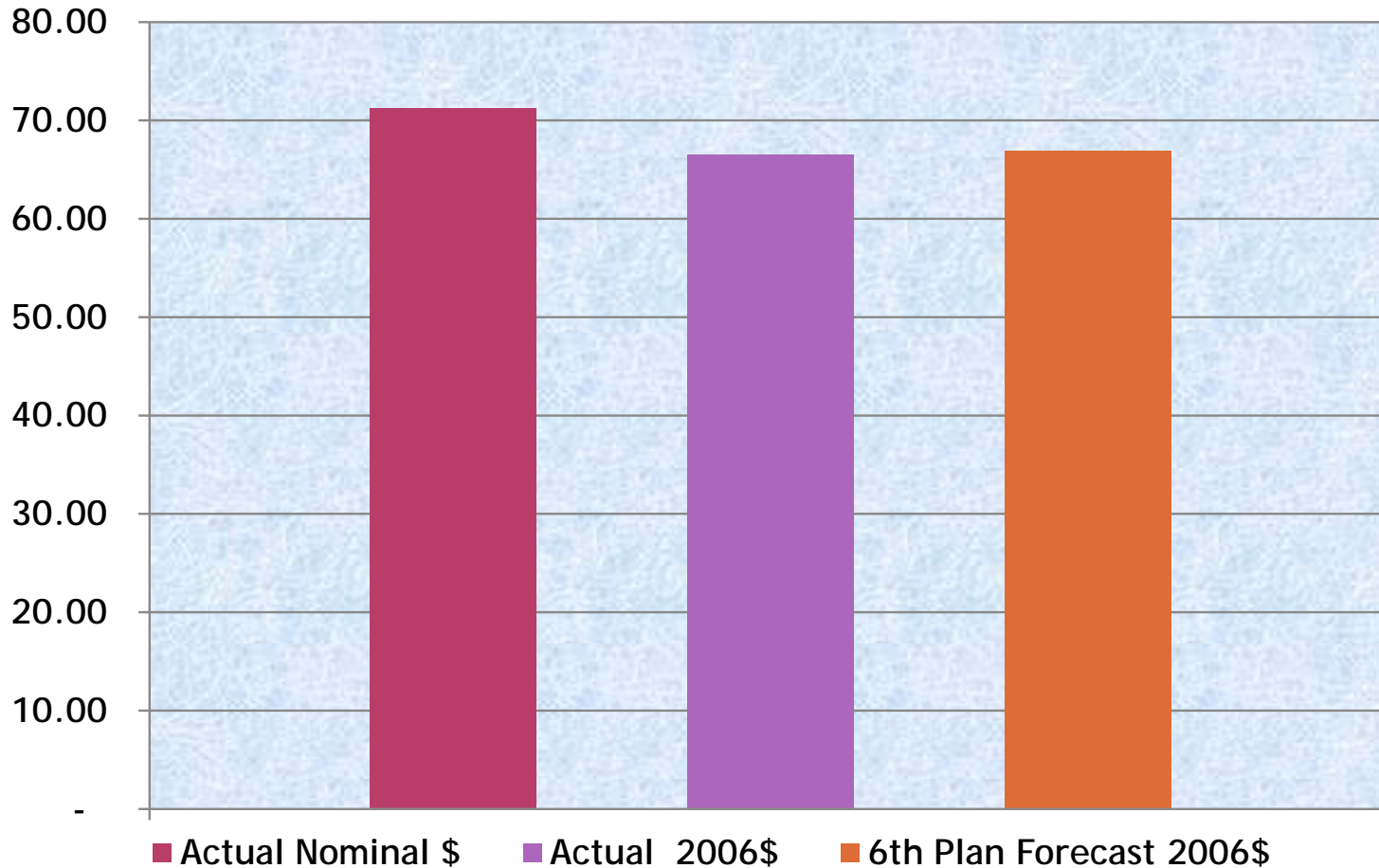
- Low \$27.96
- Medium \$29.73
- High \$31.03

Actual \$29.58



# 2010 AVERAGE RETAIL PRICE OF ELECTRICITY

(NOMINAL OR CONSTANT 2006 DOLLARS PER MWH)



# MAJOR FACTORS INFLUENCING SALES


- ⦿ Economy
- ⦿ Temperature conditions
- ⦿ Fuel Prices
- ⦿ Sales

# ELECTRICITY SALES WITH NORMAL WEATHER

## 6<sup>th</sup> Plan's forecast for 2010 (in average Megawatts)

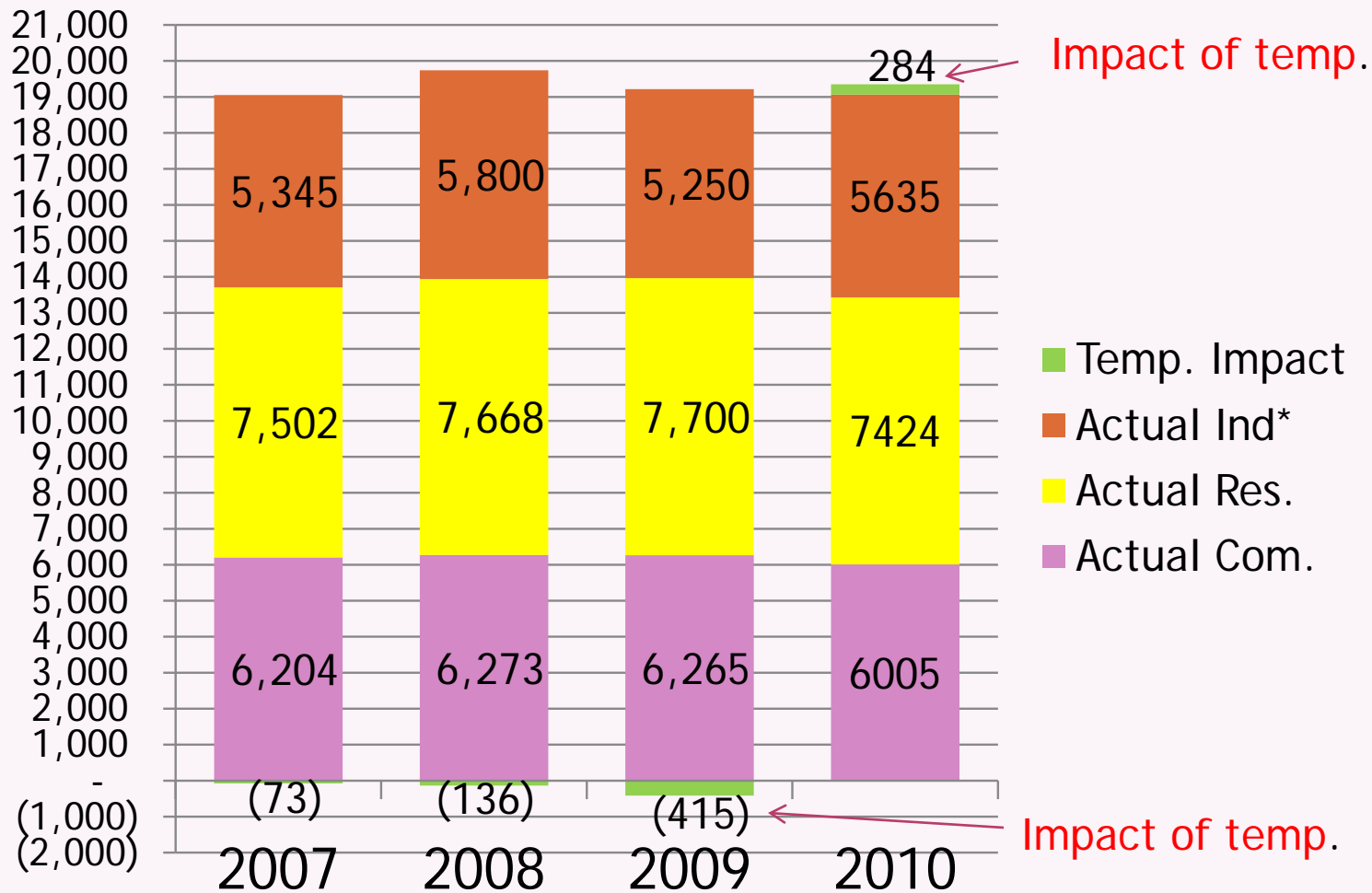
- Low 18,860
- Medium 19,224
- High 19,591

Actual 19,350



# SALES WITH AND WITHOUT IMPACT OF TEMPERATURES

M  
W  
a

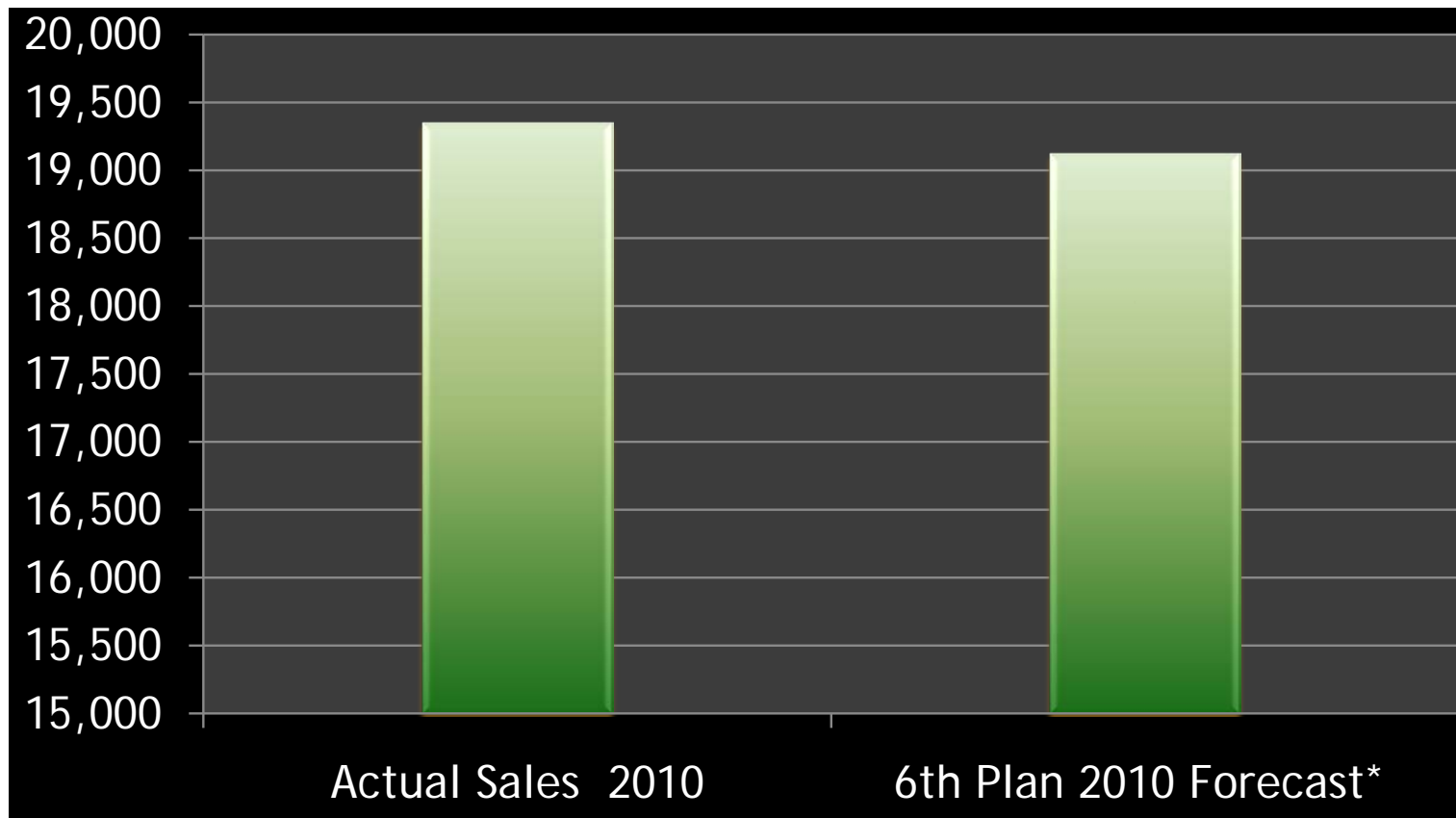


\*- includes irrigation load and DSI

# COMPARISON OF FORECAST WITH ACTUAL SALES

## WEATHER NORMALIZED REGIONAL SALES WITH CONSERVATION TARGETS AVERAGE MW

2010 Forecast and actual were different by ~1%



\*- subject to change- conservation acquired in 2010

# SUMMARY

- ⦿ Employment forecast has been 2-3% above actual.
- ⦿ Electricity sales forecast have been close to the actual values, after adjustments for weather and conservation.
- ⦿ For 2010 weather played a major role in keeping down sales of electricity.
- ⦿ Wholesale electricity prices are in the medium range of the forecast.
- ⦿ Natural gas prices are in the low to medium-low trajectory.
- ⦿ Although oil and coal prices are in the medium-high end of the range, these prices are not expected to influence the Plan outcomes.

○ Questions?