

. 41 Tom Karier
Chair
Washington
Frank L. Cassidy Jr.
"Larry"
Washington
Jim Kempton
Idaho
W. Bill Booth
Idaho



Joan M. Dukes
Vice-Chair
Oregon
Melinda S. Eden
Oregon
Bruce A. Measure
Montana
Rhonda Whiting
Montana

May 30, 2007

MEMORANDUM

TO: Power Committee
FROM: Terry Morlan
SUBJECT: Presentation of Revising Fuel Price Forecasts

One of the findings included in the Biennial Monitoring Report was that the Council's fuel price forecasts are no longer in keeping with recent forecasts by many other organizations. This was not expected to affect the near term actions called for in the plan, but the report recommended that the Council update its fuel price forecasts to provide information about its current views on future natural gas, oil, and coal prices.

I have begun that process by updating price data sources, upgrading the forecasting model, and comparing the 5th Power Plan forecasts with recent forecasts by other organizations. Our oil price forecast range is very low compared to recent prices and forecasts. Natural gas prices are low also, but by a smaller margin. Although coal prices were cyclically high in 2005, the long-term forecast does not seem to be far out of line.

I will show how the 5th Plan forecasts compare to recent short and long-term forecasts. I will propose revised forecasts that will be discussed with the Council's Natural Gas Advisory Committee. Very roughly, the proposed revision of the natural gas price forecast range would move the prices up by one forecast case. That is, for example, the new medium forecast would be similar to the 5th Plan medium-high forecast and so on. Generally, the upper end of the range would shift up more than the lower end of the range. If the oil price forecast range were revised to be more in line with current forecasts by others, the new range would lie nearly completely above the 5th Plan range. The new low forecast would be between the old high and medium-high forecasts. The likely changes in the western mine mouth coal price forecasts would be small. However, I have developed a new approach to forecasting delivered coal prices to the region that links the transportation cost to changes in diesel fuel prices. Diesel fuel for unit trains is a significant component of the delivery cost of coal.

I will show the Power Committee the analysis I have done to date.

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Exploring the Status of the 5th Power Plan Fuel Price Forecasts

Power Committee

May 15, 2007

Walla Walla, WA

Purpose and Process

- Biennial Monitoring Report recommended development of a revised fuel price outlook
- Briefing intended to lead to a Council decision in July to adopt revised fuel price forecasts
- Proposed changes will be discussed with the Natural Gas Advisory Committee on June 27th

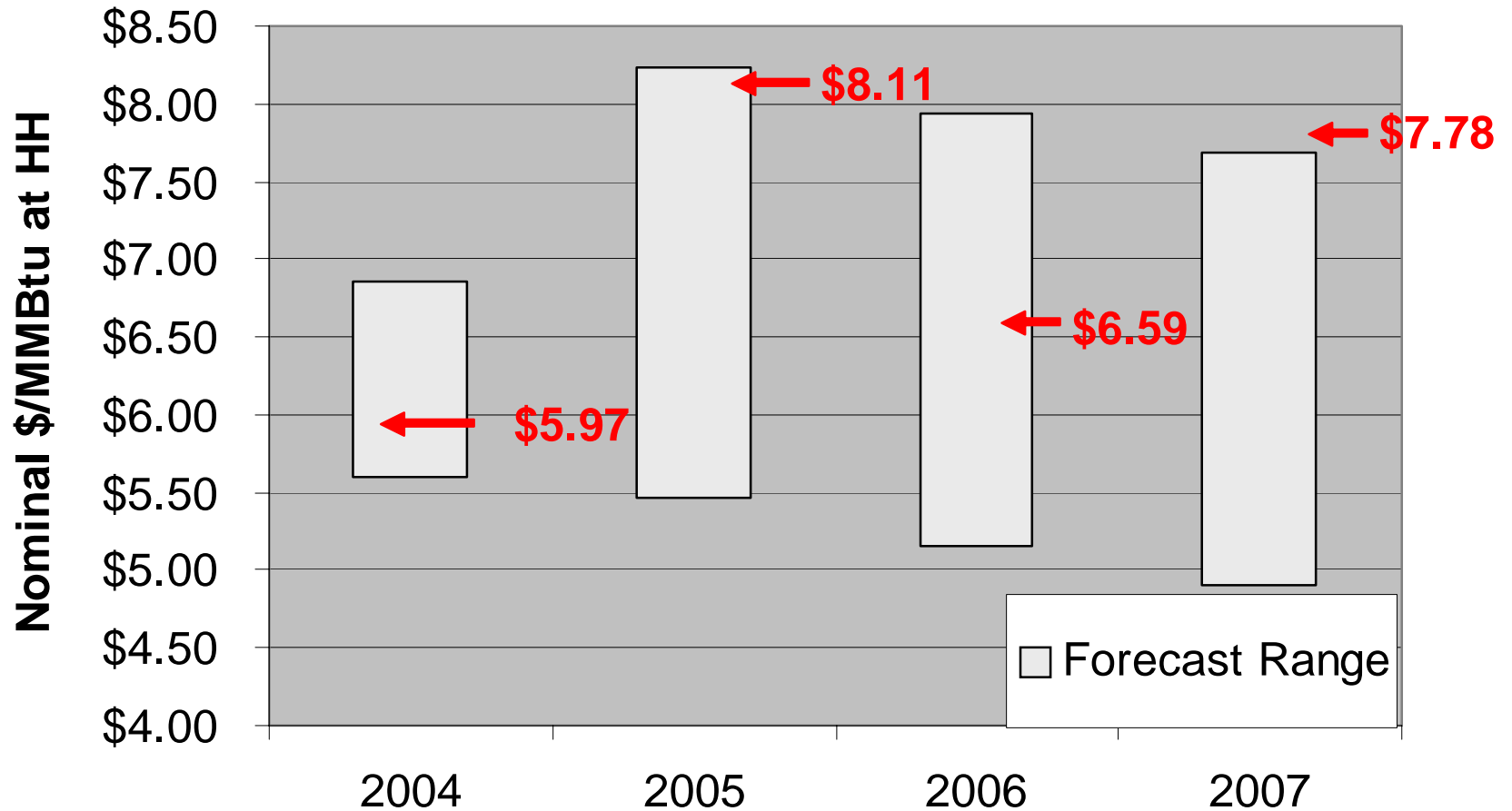
Model Changes

- Updated historical data
- Results can be presented in different year dollars
- New coal price forecasting approach
- General cleanup and documentation
- Different approach to scenarios

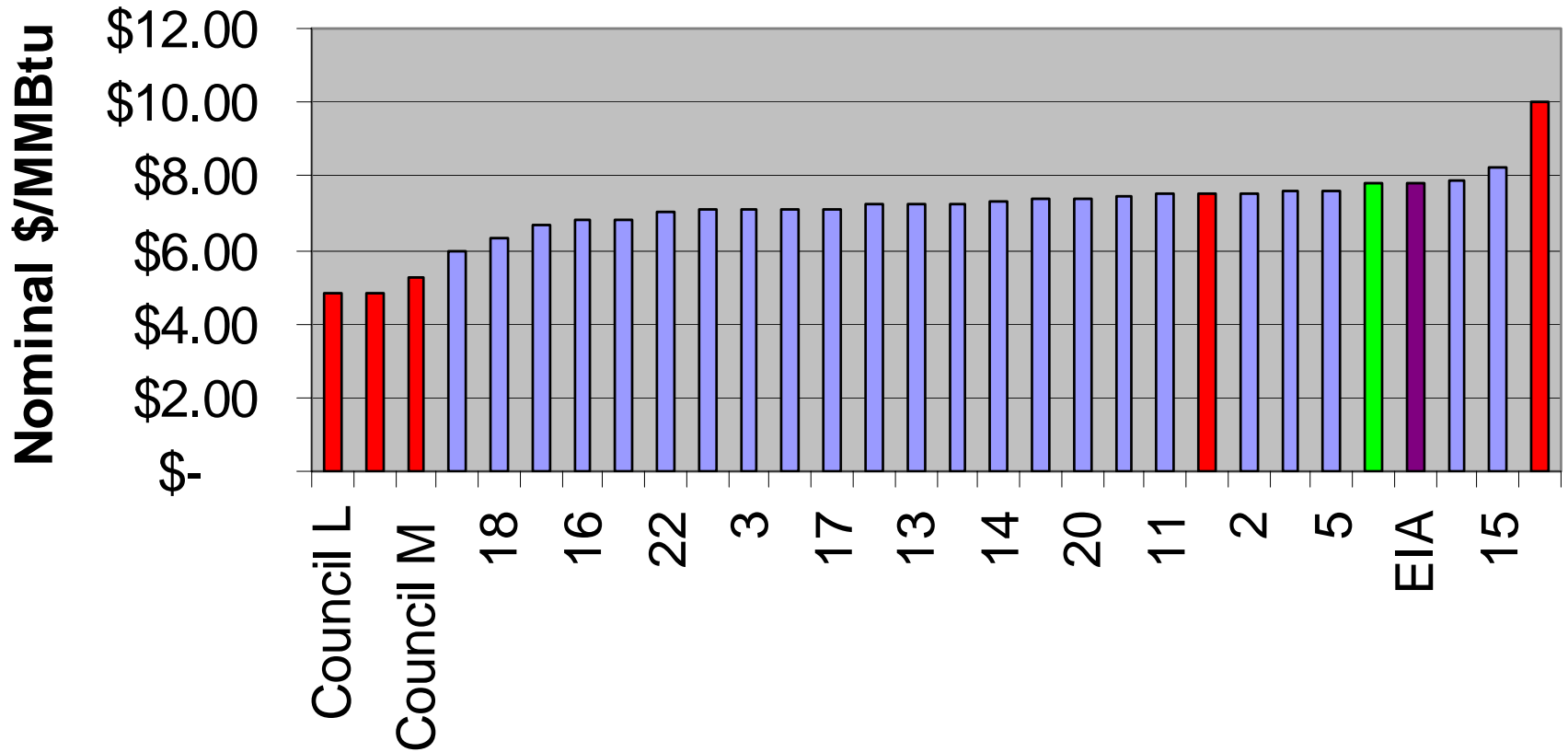
Natural Gas

- Compare to recent prices
- Compare to short-term forecasts and futures prices
- Compare to long-term forecasts by EIA and others

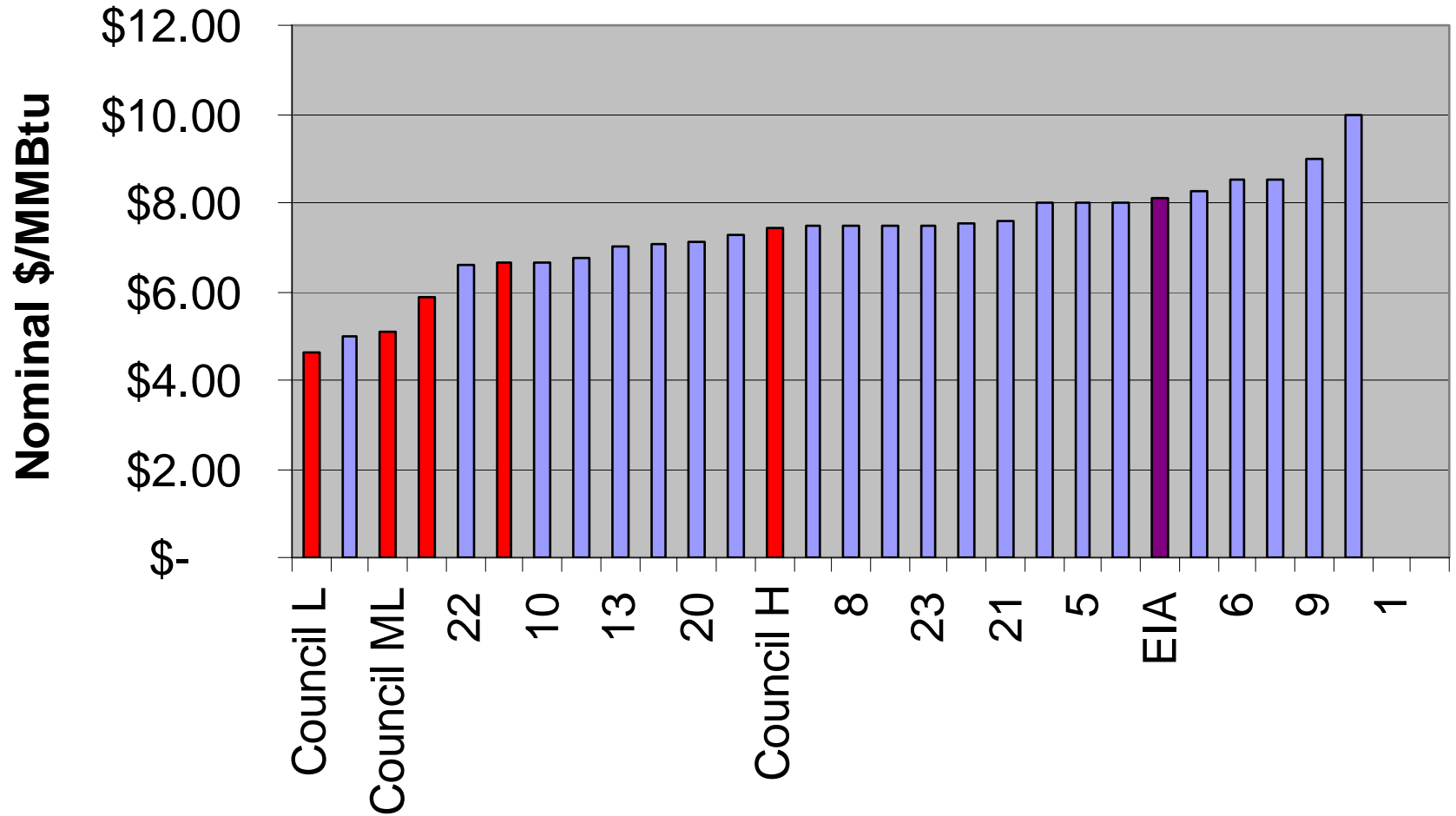
Forecast Natural Gas Price Range Vs. Actual



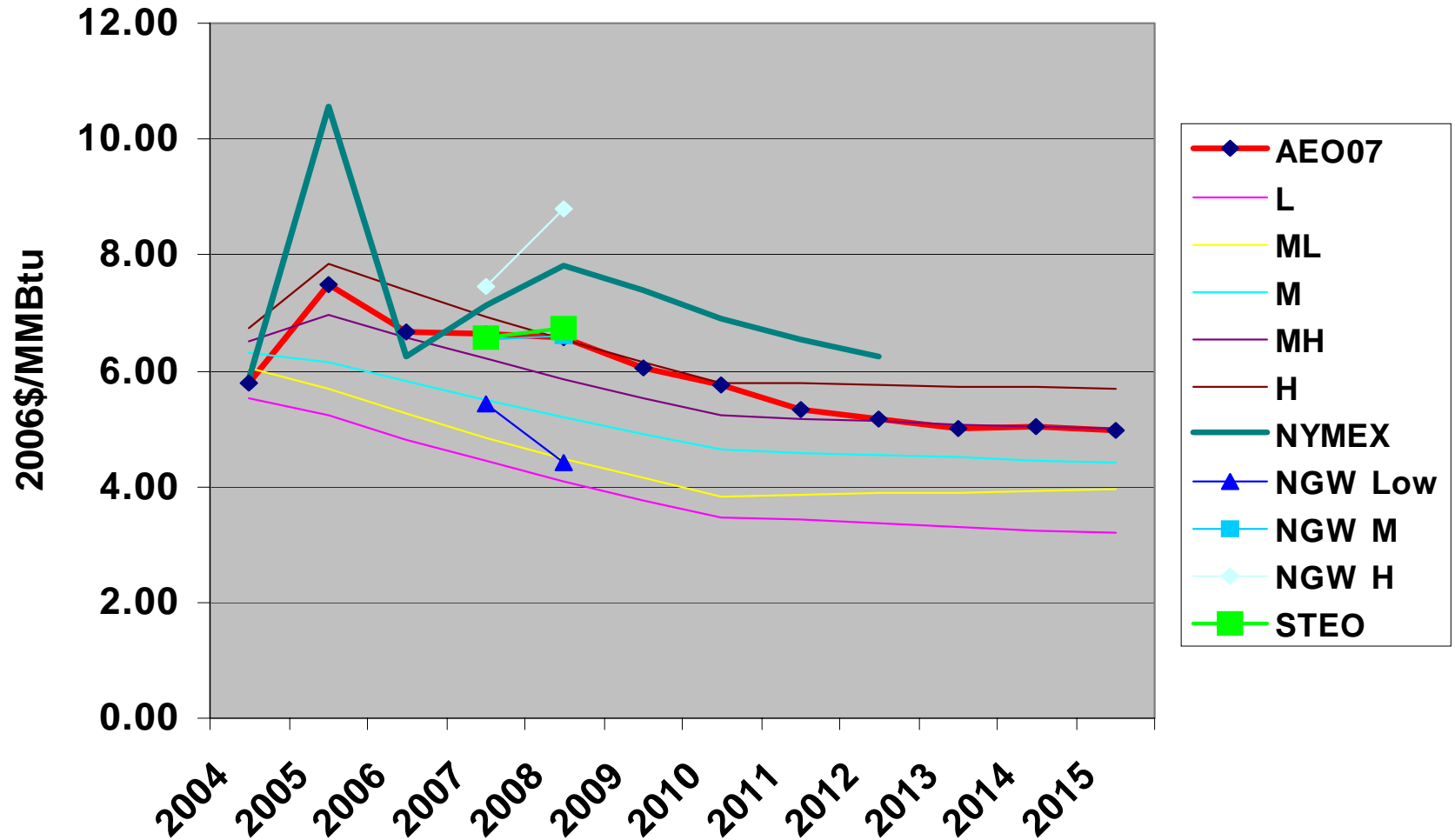
5th Plan 2007 Forecast Compared Other Short Term Forecasts



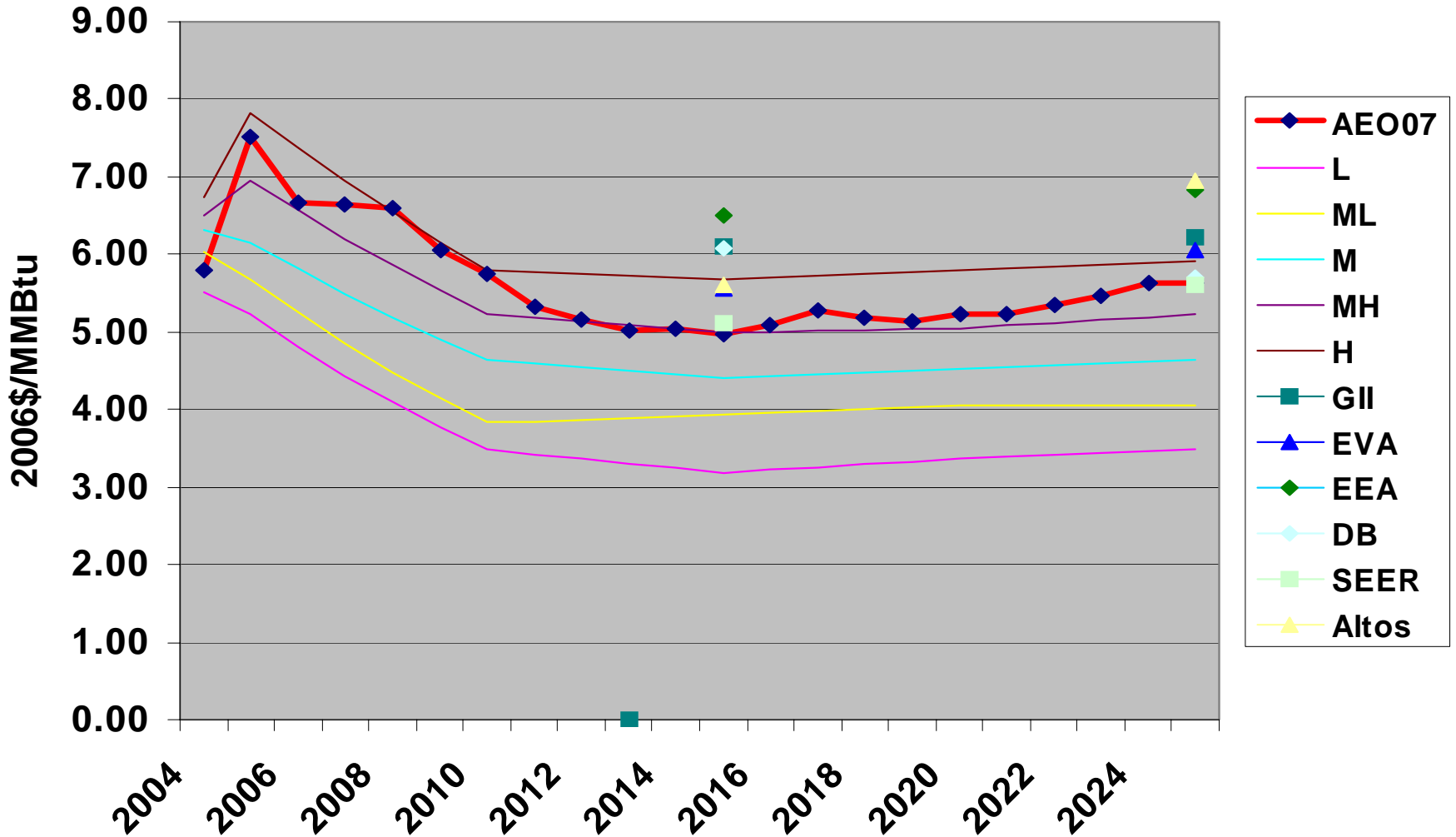
5th Plan 2008 Forecast Compared Other Short Term Forecasts



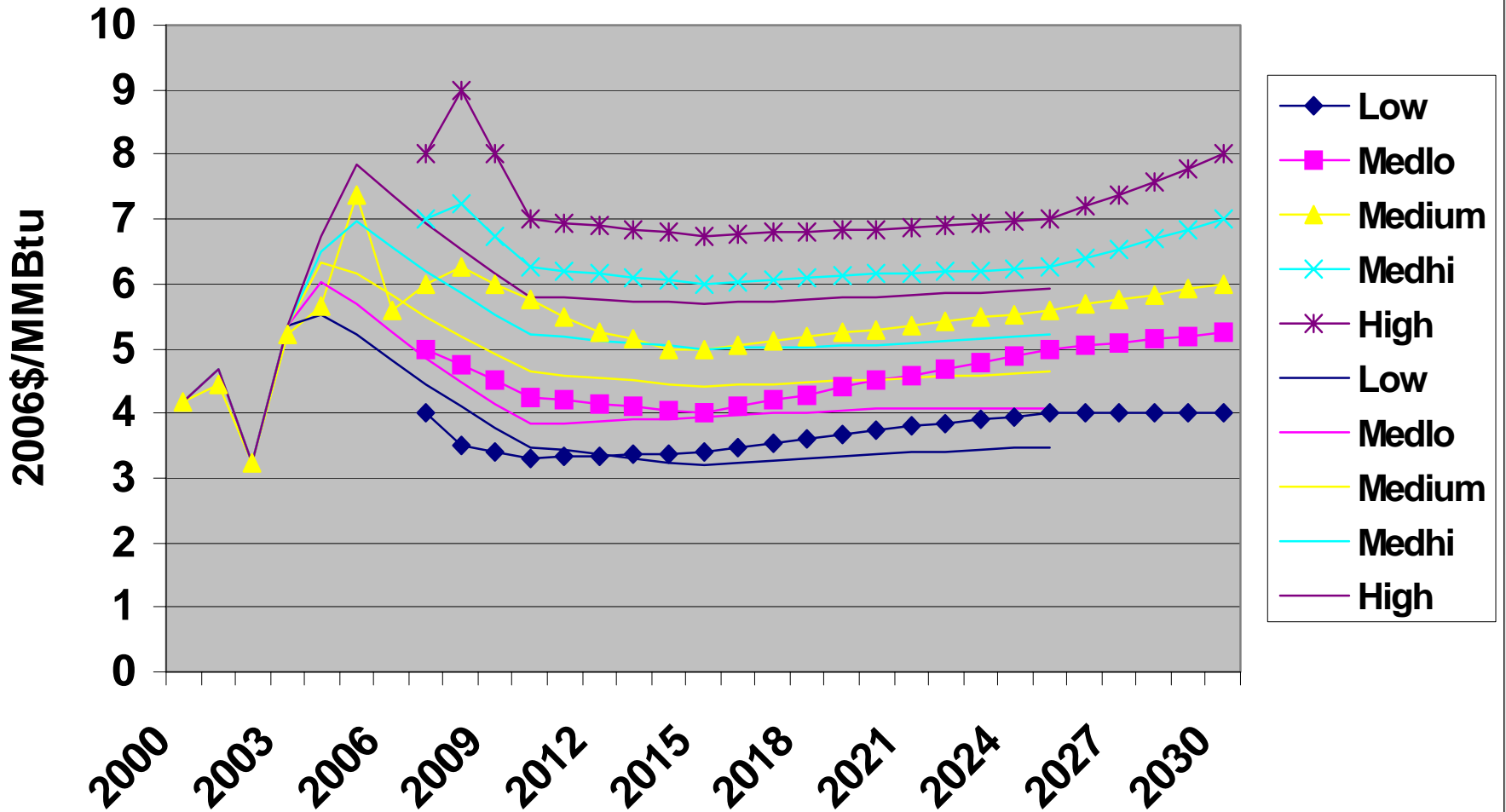
Comparison to Futures Market and Range of Short-Term Forecasts



Comparison to Other Long-Term Forecasts



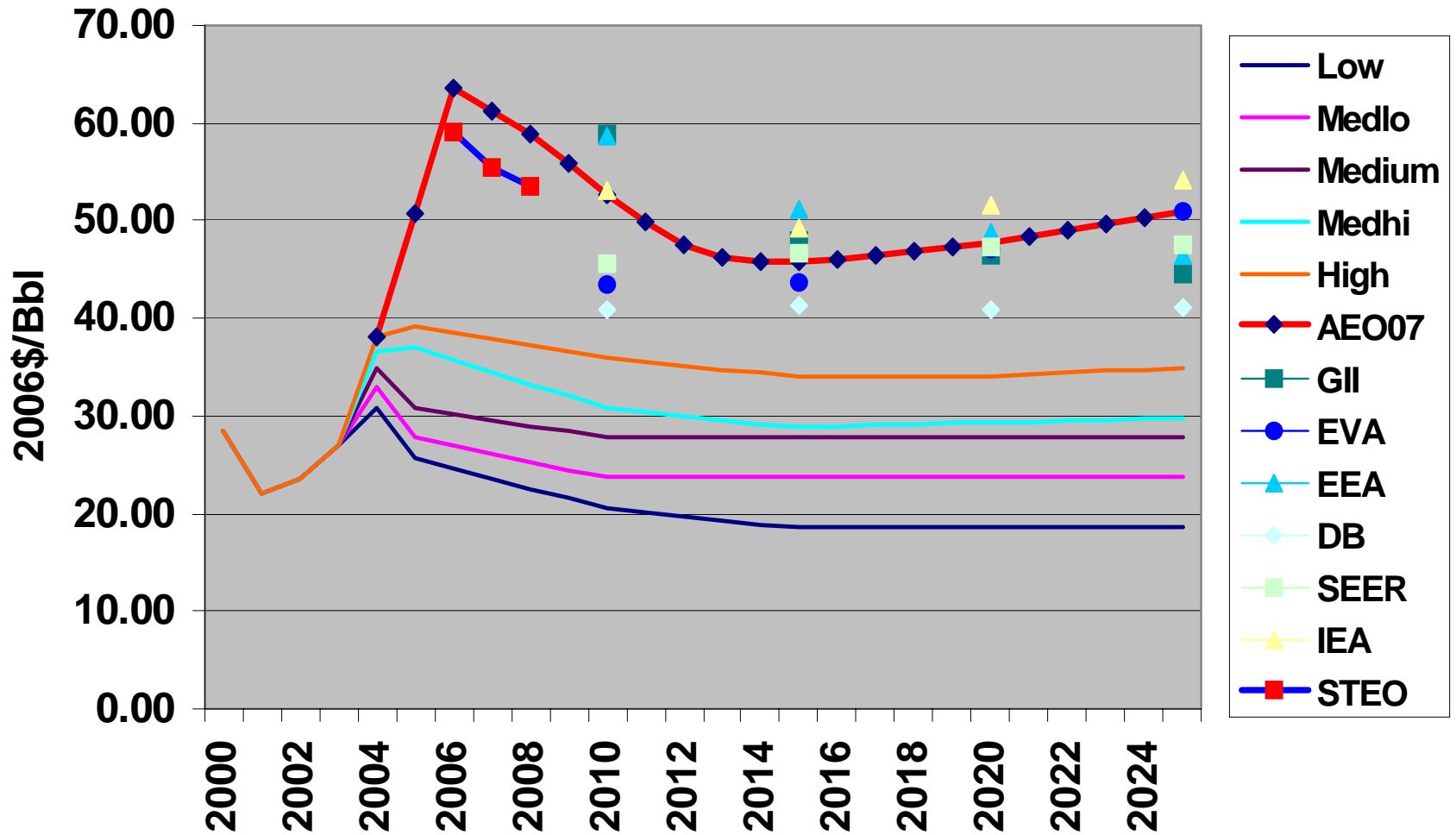
Possible Forecast Range Revision



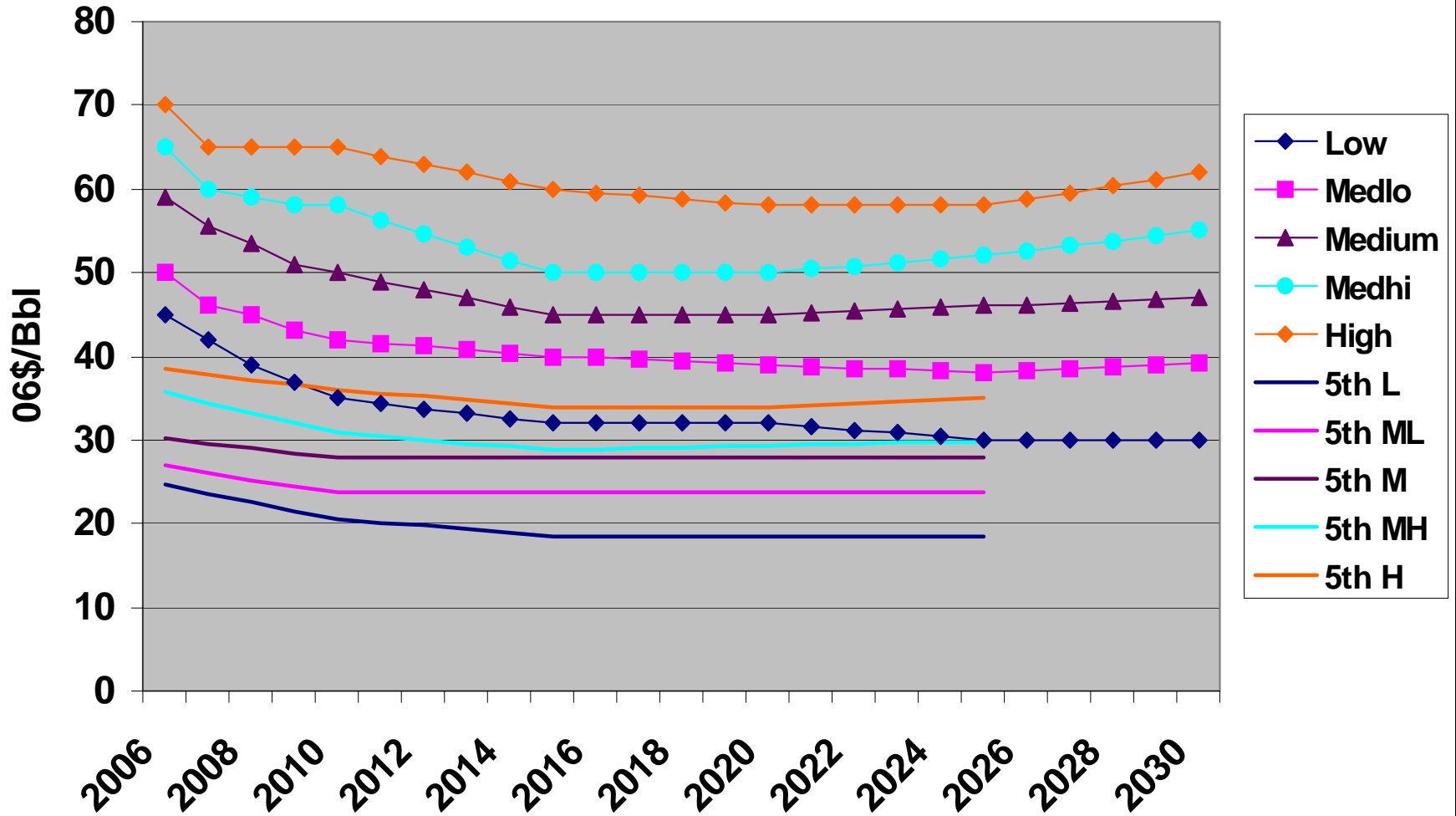
Oil Prices

- Oil prices have doubled since 5th Plan and most forecasts assume they will stay higher
- Dollar devaluation alone would increase OPEC oil price target from \$22-\$28 to \$30-\$40
- Added a forecast of transportation diesel prices to other sector forecasts

5th Plan Oil Price Compared to Other Forecasts



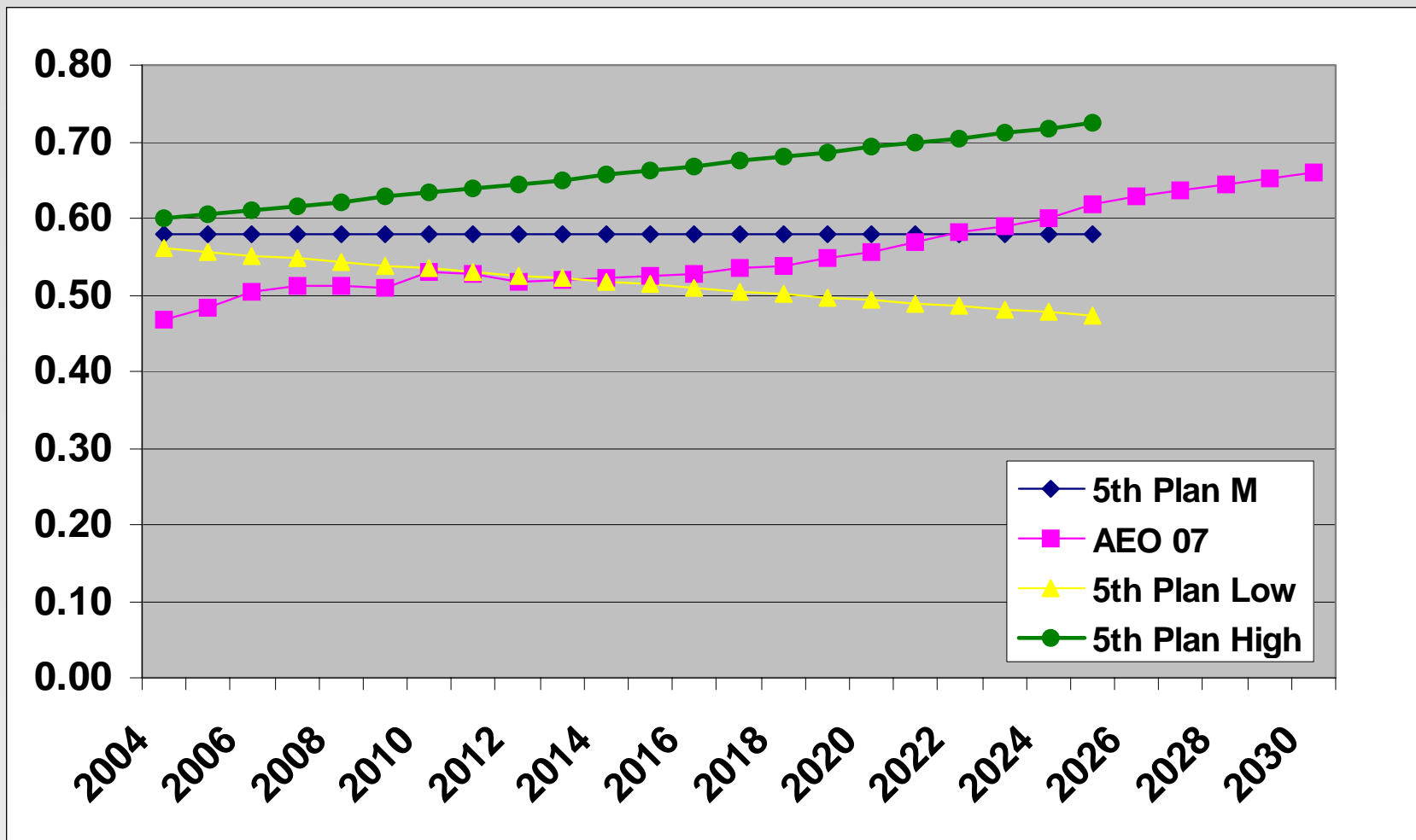
Proposed Revision of Oil Price Forecast



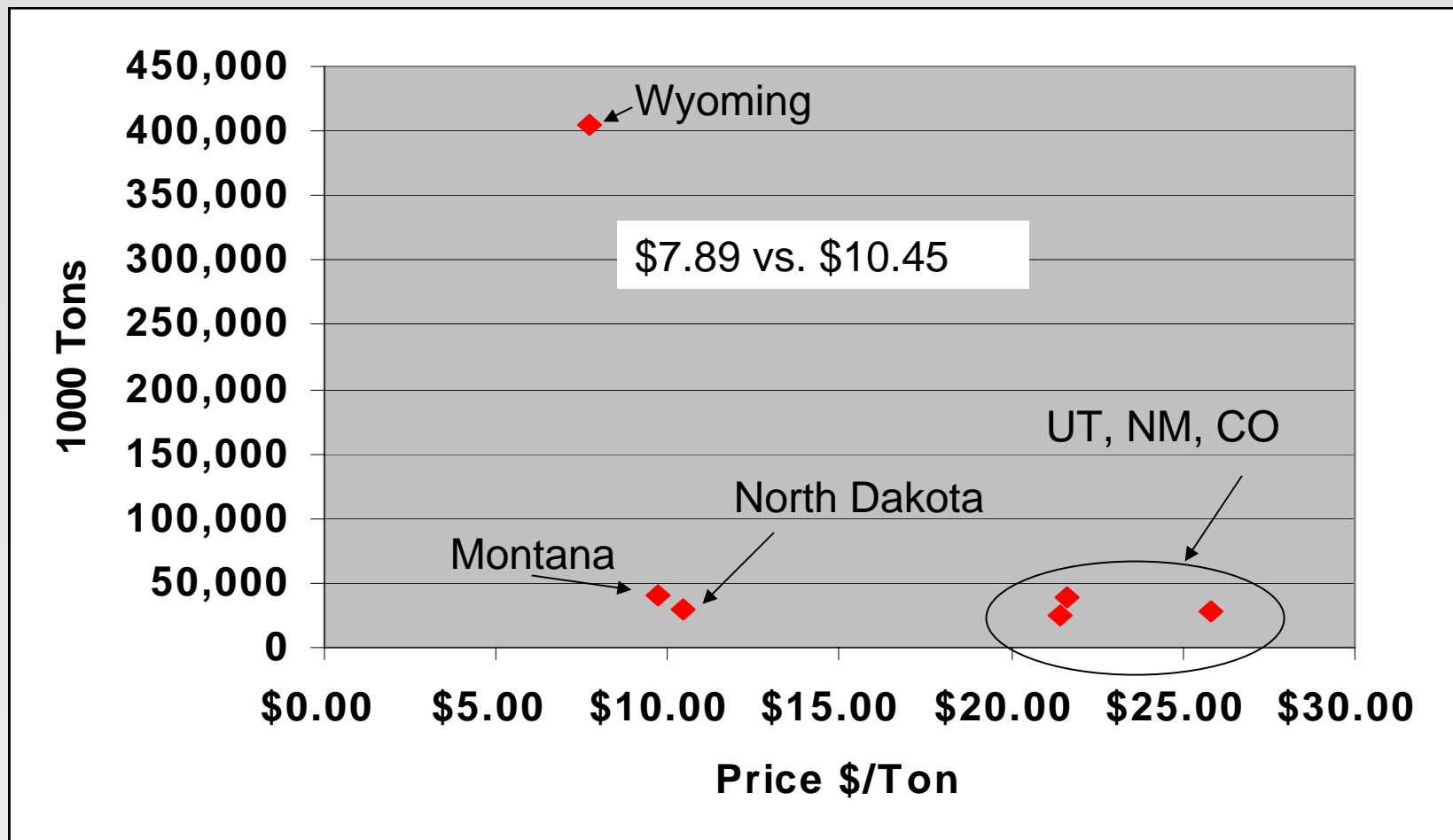
Coal

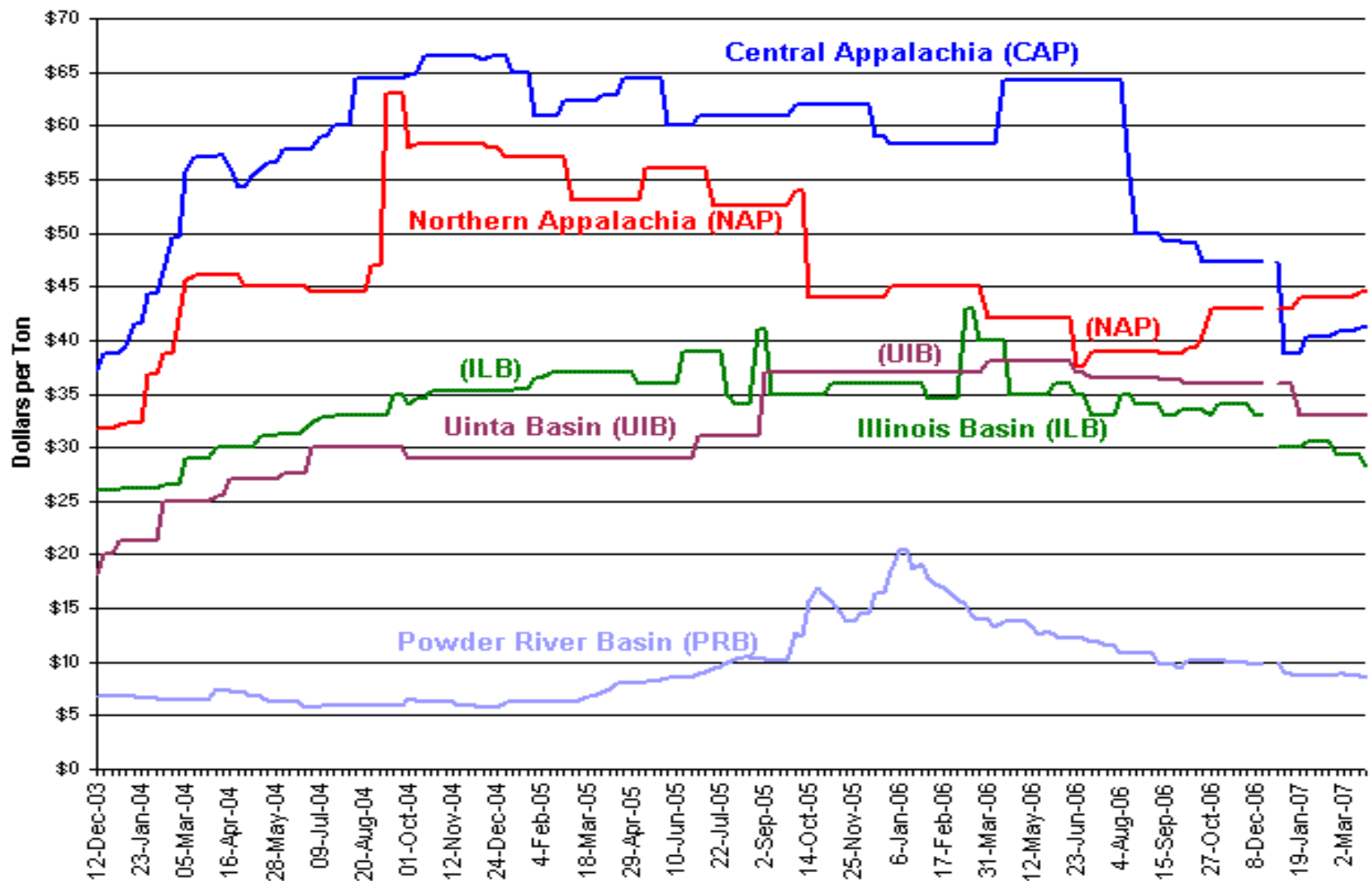
- New regional regional forecasting approach that includes effect of diesel fuel prices
- Consider limiting the number of Western states included on our mine mouth coal price estimate

Council's Coal Price Range Vs. AEO 07



Western Coal Production and Prices





Key to Coal Commodities by Region¹

Central Appalachia: Big Sandy/Kanawha 12,500 Btu, 1.2 lbSO₂/mmBtu
Northern Appalachia: Pittsburgh Seam 13,000 Btu, <3.0 lbSO₂/mmBtu
Illinois Basin: 11,800 Btu, 5.0 lb SO₂/mmBtu

Powder River Basin: 8,800 Btu, 0.8 lb SO₂/mmBtu
Uinta Basin in Colo.: 11,700 Btu, 0.8 lb SO₂/mmBtu