



# Summer Energy Market Assessment 2005



May 4, 2005

***Federal Energy Regulatory Commission • Office of Market Oversight and Investigations***

Disclaimer: This Report contains analyses, presentations and conclusions that may be based on or derived from the data sources cited, but do not necessarily reflect the positions or recommendations of the data providers.

Tom Pinkston:

Good Morning Chairman and Commissioners.

We are pleased to present the Summer Energy Market Assessment for 2005. The presentation will also be made available on the FERC website.

## **2004 Summer Assessment:**

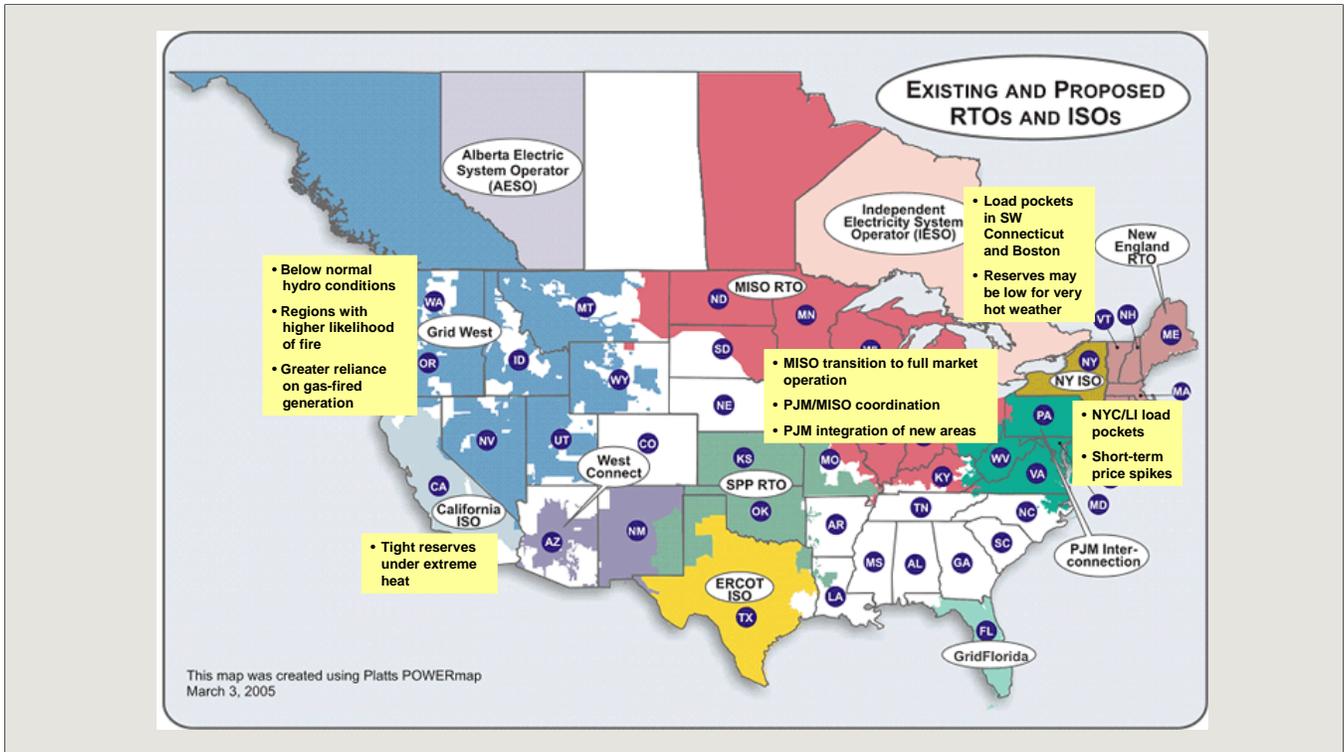
**Regional Markets Could Show Stress Under Certain Conditions this Summer – Most Notably the West.**

- **Load Pockets**
- **High Fuel Costs**
- **Especially Tight Reserves in the West**

Nationally, most regions have adequate or better reserves and are likely to face no problems. However, higher fuel costs than the past few years are likely to result in higher electricity prices in general. Also, certain locations could face market stresses under extreme weather conditions, particularly load pockets in the northeast like southwest Connecticut and areas in the west, like southern California. I will present the first part of the assessment and Steve Harvey will discuss western market issues and summarize the report.

Regional Electric Market  
Issues will Depend  
On Local Resources,  
Demand and Operations.

Regional issues vary depending on demand, resources and operations.

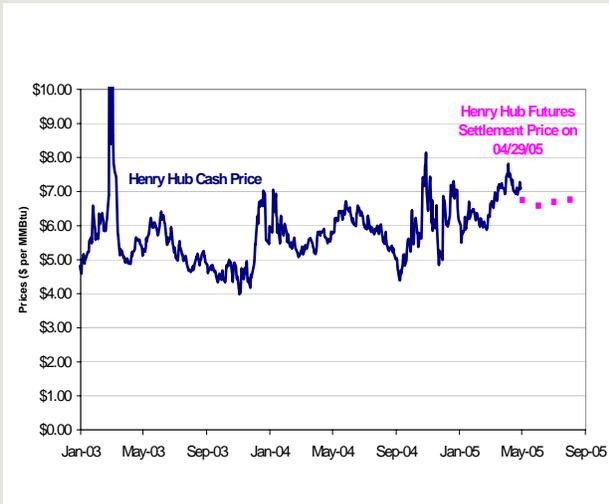


This annotated map of the United States highlights specific regional issues identified as important for the summer. I will focus on New England in a minute and Steve will discuss the west after I'm finished.

Otherwise, in the Midwest, the primary issues are the operation and execution of MISO's transition to fully functioning RTO markets, the coordination between PJM and MISO and PJM's integration of new areas, most recently of Dominion last weekend.

In New York, we continue to focus on the load pockets of New York City and Long Island. We also are monitoring occasional short-term price spikes in the New York ISO. These spikes appear to be related to recent software changes, and are often reserved and corrected. Nevertheless, we are watching their behavior.

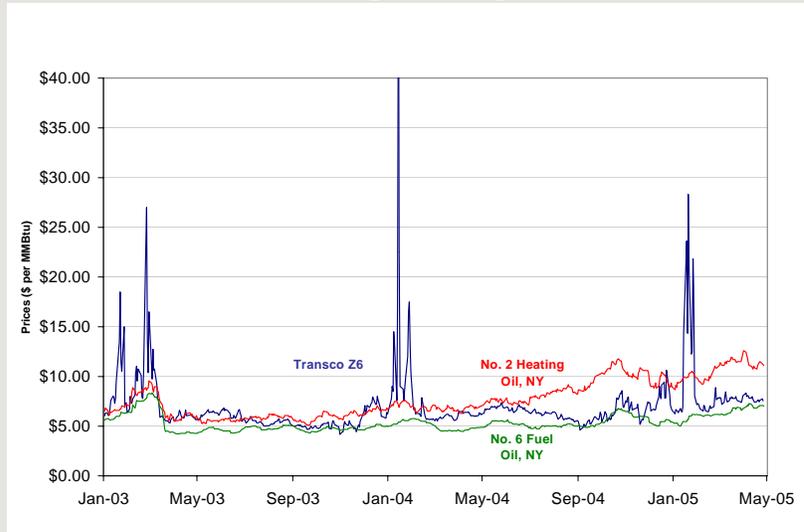
# Key Electric Fuel Prices Remain High



Sources: Natural Gas Intelligence, Bloomberg, L.P. and New York Mercantile Exchange (NYMEX).

Let's start with fuel prices. These charts of natural gas and coal prices starting in 2003 combined with futures prices for this summer show that higher prices than last year will continue to put upward pressure on power prices nationally. These effects will tend to be most significant in regions highly dependent on gas-fired generation.

# With Healthy Gas Storage Inventories, Oil is Driving Higher Prices



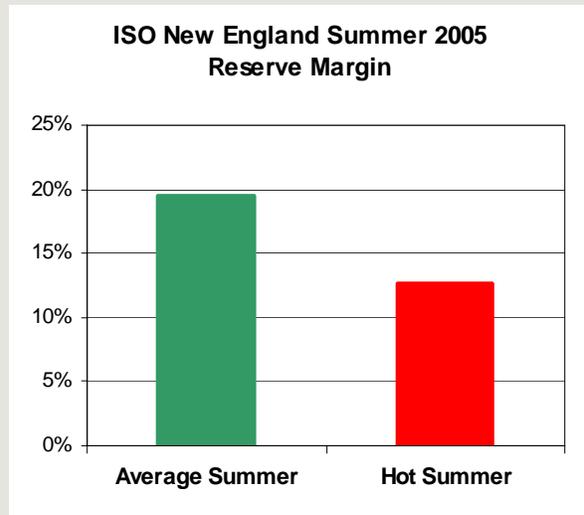
Sources: *Natural Gas Intelligence*, Bloomberg, L.P. and New York Mercantile Exchange (NYMEX).

Why are gas prices so high despite currently healthy gas storage inventories? Inventories are comfortably above the 5-year average. We've found that gas prices have followed oil prices. For example, gas prices, as shown in this graph delivered to New York City, have traded between No. 2 Heating oil and No. 6 Fuel oil for several years, with occasional forays higher due to locational scarcity. Most recently, gas prices have remained near the lower end of that price range indicating reduced gas supply stress. Recent weakness in oil prices – if dropping below \$50 per barrel can be considered “weak” – has been closely followed by gas prices. Altogether, stronger fuel costs are likely keep average electricity prices higher than those experienced in the past few years.

# New England Expects Record Peak Demand With Adequate Reserves

<b>ISO New England Peak Forecast and Load</b>	
Probability	Load
Average (50%)	26,355 MW
Hot (10%)	27,985 MW
<b>Previous Peak: 25,343 MW</b>	

Sources: NEPOOL 2004 – 2013 Forecast Report of Capacity, Energy, Loads and Transmission (2004 CELT Report) and discussion with ISO New England. Annual net generation from ISO New England.



Recent New England ISO forecasts have indicated the potential, under extreme conditions, for some problems in New England this summer. ISO-NE's expected 2005 peak load will reach 26,355 MW at least one day during the summer and could go as high as 27,985 MW during an extended heat spell. The previous record peak load of 25,348 MW was set on August 14, 2002. Nevertheless New England should have a slim surplus of capacity provided the summer is not exceptionally hot and loads remain within the expected range.

## Load Pockets in New England may Face Continued Tightness

- Generation and transmission capacity in SW Connecticut remains inadequate
- Secured 218 MW of emergency summer resources

Specific load pockets in New England could be tighter. Currently, Connecticut's capacity is inadequate to serve demand and meet reliability requirements. In Southwest Connecticut, the ISO uses emergency resources and operating procedures to keep the lights on. This year, as in previous years, the ISO has secured 218 MW of emergency resources (portable generators) to help maintain reliability in Connecticut.

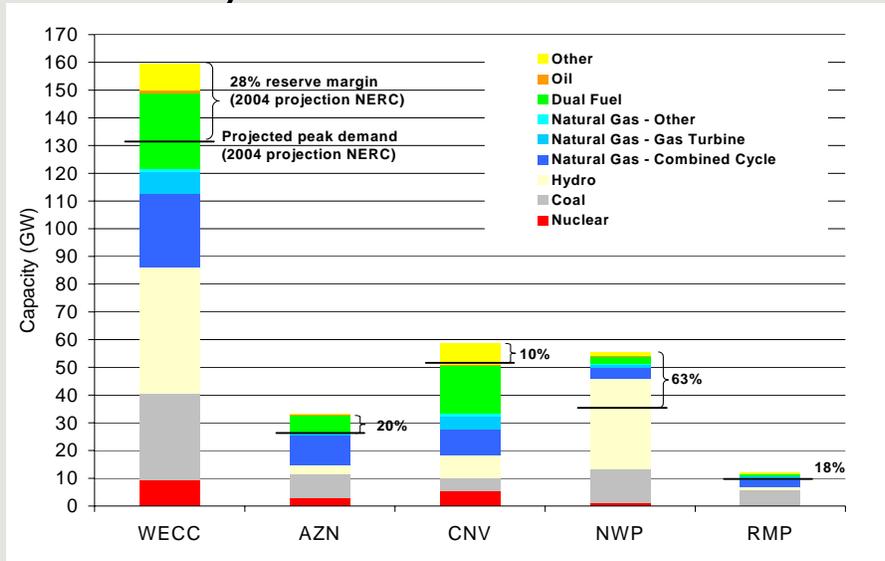
# Supply and Demand Conditions in the U.S. West this Summer may Result in Periods of Market Tightness – Higher Prices and Even Interruptions.

Steven Harvey:

Thanks Tom.

Our review of supply and demand conditions in the west this summer indicates that there may be periods of market tightness most likely expressed as price spikes and possible interruptions. I want to be clear about this – spikes and interruptions are not the most likely result. We believe that the most likely situation is no serious disruption. However, the possibility remains and we need to take it seriously as we plan our Oversight activities for the summer. Let me describe the conditions that might result in disruptions in more detail.

# Western Generation Is Heavily Dependent on Hydro and Natural Gas



Source: OMOI Analysis of NERC 2004 ES&D database.

We graphed the generation mix for the Western Electricity Coordinating Council to get a general idea of the capacity mix for electricity in the west. As you can see, a large portion of the capacity is hydroelectric – close to 30%. Much of that is in the Pacific Northwest. Gas is important too, with a little more than 20% from combined cycle, turbine or other gas-fired generation; and more dual-fueled. Like the rest of the US, much of the gas-fired generation is fairly new, most of it developed since 2000.

Given Tom's comments before about the price of oil and natural gas, gas-fired generation is likely to be higher-priced than in the past few years. This consideration is even more important given the story in the next slide.

## Hydro and Snow Pack are Below Average

	Hydro Generation		Snow Water Equivalent	
	In-State Capacity (MW)	Additional Capacity Created Downstream (MW)	One Year Ago (% of average)	4/27/05 (% of average)
California	10,400	0	78%	147%
British Columbia	10,000	16,200	80%	89%
Idaho	2,700	19,700	60%	75%
Washington	21,500	0	74%	32%
Montana	2,700	16,200	70%	59%
Oregon	9,100	0	71%	53%

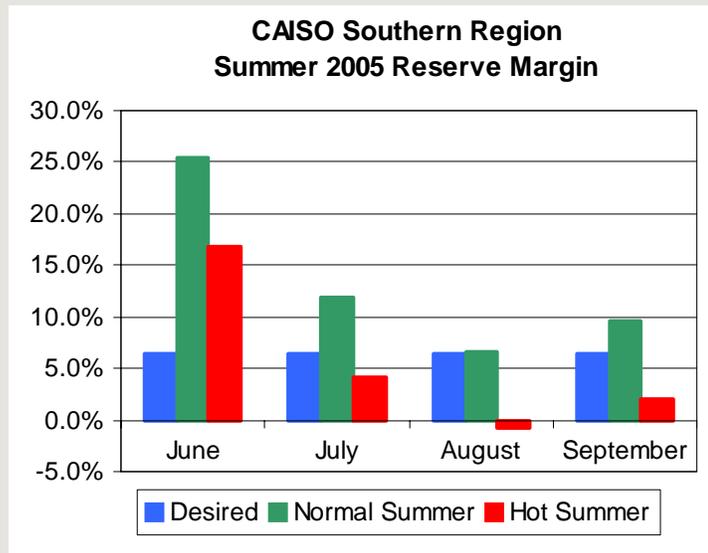
Sources: OMOI analysis; derived from data from EIA, BPA, Natural Resources Conservation Services, and Bloomberg, L.P.

The outlook for hydroelectric generation is not good for this summer. With the exception of California, that faced extraordinary levels of precipitation over the past winter, the west broadly has much less water available for hydro generation than in an average year. Late precipitation in improved the situation somewhat, and British Columbia and Idaho now are in better shape than one year ago. Still, Washington, Montana and Oregon now face very low levels of “snow water equivalent.”

With hydro at low levels, natural gas is clearly the most significant potential contributor to capacity and energy needs in the west this summer. Consequently, we expect electricity prices in the west this summer to be higher on average than over the past few years, driven solely by the use of gas-fired generation to make up for hydroelectric generation

In effect, gas-fired generation will be competing with storage fill through the summer in the west, possibly effecting prices as well. We will be watching storage fill to see if there are any potential longer-term effects on gas supply. The western pipeline system appears adequate to handle the load at this point.

# Southern California's Summer 2005 Resource Margins are Inadequate for an Extremely Hot Summer



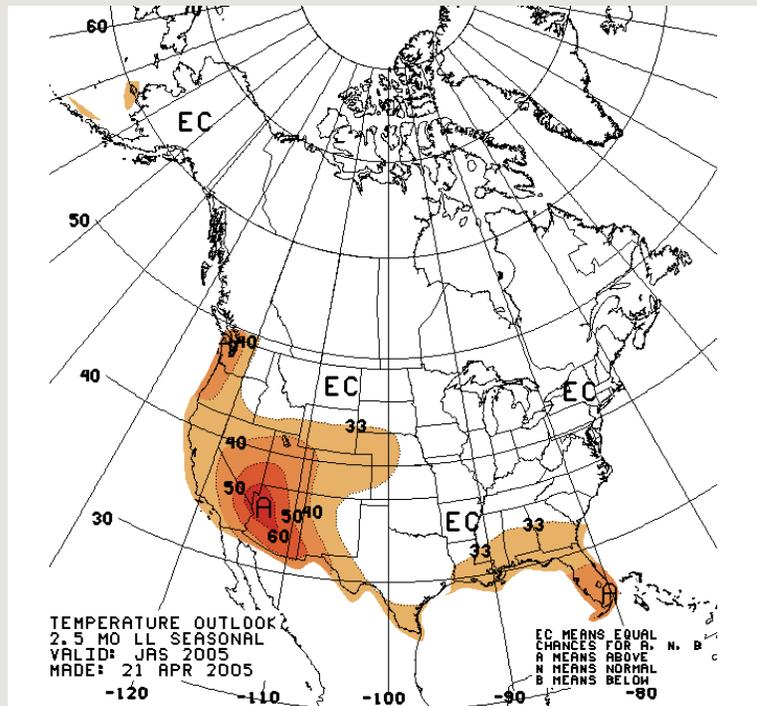
Sources: OMOI Analysis of the California Energy Commission Summer 2005 Electricity Supply and Demand Outlook Draft Staff Report, March 2005 and CAISO 2005 Summer Operations Assessment, March 23, 2005.

Now let's consider effects of demand. Extensive economic growth in southern California has created conditions where, under extreme temperatures, capacity may not be adequate to cover all load. The California ISO and the California Energy Commission have been actively documenting these conditions, and the graph shows the most recent results for southern California as calculated by the ISO. Under projected hot summer conditions, it appears that reserve margins are inadequate in southern California in August, and very tight in September.

Again, I should stress that this problem only appears under fairly extreme conditions, and may not appear at all. Nevertheless, we understand that the CAISO, the California Energy Commission and the California Public Utility Commission have been working closely with the Governor's Office to understand the situation and look for potential solutions.

I should note that the graph does not take into account certain possible demand actions, for example the effects of interrupting interruptible load. I should also note that the graph assumes very high levels of imports into California – including imports from the Pacific Northwest. We have been told that on a peaking basis, capacity of Northwestern hydroelectric generation should be available for California.

Most Recent  
NOAA  
Forecast is for  
Above Average  
Western  
Summer  
Temperatures



Summer demand conditions are further complicated by recent weather forecasting. The most recent summer temperature forecast from the National Oceanic and Atmospheric Administration is for above-normal heat in the west. This NOAA-published map is for July, August and September, and shows widespread forecasted above-average temperatures across the west, with much-above average temperatures in the desert southwest. If the weather plays out as projected by NOAA, there will be a lot of stress on the western grid.

## What Could Trigger Periods Of Electric Scarcity in the West?

- Hotter-than-average weather
- Transmission disruptions
- Generation disruptions

That kind of stress can result in problems beyond simply high demand. Heavily used equipment is more vulnerable to outages. Outages of generation or of transmission lines could result in localized problems in a stressed western grid. These kinds of outages are not really predictable, but dry weather in the northwest, for example, could increase the likelihood of wildfires that could, in turn , threaten transmission.

## What Effects Would Scarcity Have on Western Markets?

- Price levels are likely to be higher all summer due to more expensive gas.
- Spikes possible due to extraordinary heat or system failures.
- Forward contracting, Commission rules and oversight make spot price manipulation less likely.

What would periods of stress look like in western markets in the summer of 2005? First of all, prices are likely to start higher than in the past few summers due to the greater reliance on natural gas instead of hydroelectric generation. With periods – probably short periods – of extreme heat, there could be price spikes to fairly high levels, or interruptions of service in extreme cases.

I would note that this possibility is entirely related to market fundamentals. In our view, the likelihood of spot price manipulation is lower than in cases of stress in the past for three reasons. The first is the extent of forward contracting. Many utilities in the west have contracted to cover most of their needs under longer-term contracts. They will tend to go to spot markets only under more extreme circumstances. Second, the Commission has added rules – most significantly the Behavior Rules – designed to clarify the most significant areas of concern regarding buyer and seller behavior. Finally, we will continue to oversee market activity through the summer.

## Focus of Oversight Attention This Summer

- Western market behavior and prices
- New England prices in load pockets
- MISO implementation
- Price spikes in New York
- Natural gas storage fill

I'd like to summarize our report today, as we always have, by pointing out the areas of oversight we plan to focus on this summer. They include the western market behavior and activity I've just described as well as activity in the northeastern load pockets Tom identified earlier, progress in the ongoing MISO market implementation, the price spikes we've noticed in New York since the implementation of their new software and the status of storage fill, particularly in the west, as the summer goes on.

Please note once again, nationally, most regions have adequate or better reserves and are likely to face few market problems. Even in tighter areas such as the west and the northeast load pockets like southwest Connecticut, severe problems are unlikely unless hot weather is severe.

## Contributors

- Stacy Angel
- William Booth
- Judy Eastwood
- Robert Flanders
- Alan Haymes
- Matthew Hunter
- Steven Michals
- Colin Mount
- Thomas Pinkston
- Clint Ramdath
- Jamie Simler
- Harry Singh
- Jennifer Tremper
- Julia Tuzun
- Dean Wight

Finally, I'd like to quickly thank the many contributors listed in the presentation – though in the interest of time I won't read all their names. I would like to say that the development particularly of our views on the west this summer have been formed by very close coordination across Commission Staff including active representation by OMTR and OEP along with OMOI.

Tom, Harry Colin and I would be happy to take any of your questions.