



Approaches to Market Oversight

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by

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Approaches to market oversight

- **History and structure**
- Situational awareness and outreach
- Identifying bad behavior
- Monitoring processes
- Market challenges



FERC's current market oversight function traces back to 2001-02



FERC's Market Monitoring Center



At FERC, Market Oversight is part of the Office of Enforcement





The organizational structure of FERC's Division of Energy Market Oversight

Front Office
Jerome Pederson, Director
Steven Reich, Deputy Director
Laura Vallance, Legal Counsel

Branch 1

Forms collection and compliance: financial and market forms

Branch 2

Information management and reporting (outreach and data support)

Branch 3

Assess market behavior, fundamentals, performance under Commission rules—electric markets

Branch 4

Assess market behavior, fundamentals, performance under Commission rules—gas markets

Branch 5

Develop analytic tools to survey markets and identify market anomalies—gas markets

Branch 6

Develop analytic tools to survey markets and identify market anomalies—electric markets

Branch 7

Provide technical analysis and forensic assessments of trading in support of investigations



Approaches to market oversight

- History and structure
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Market Oversight staff reviews market events daily

Energy Markets Oversight Signals

Daily Summary as of COB November 17, 2011

National View

Natural Gas	Last Close	Δ Day
Spot Henry Hub Gas \$/MMBtu	\$3.11	(\$0.00)
Prompt Future Henry Hub Gas	\$3.41	\$0.07
Open Interest / Change (Thousands)	81.66	(11.70)
2nd Month Natural Gas	\$3.55	\$0.06
US Storage BCF [Last Year]	3850 [3840]	n/a
Seasonal Spread (Summer-Winter)	(\$0.16)	\$0.01
UK National Bal Point Spot \$/MMBtu	\$9.26	(\$0.10)
Oil		
Prompt Month WTI Crude \$/bbl	\$98.82	(\$3.77)
Prompt Month Brent Crude \$/bbl	\$108.22	(\$3.66)
Spot NY #6 Low Sulfur \$/MMBtu	\$17.82	(\$0.70)
Prompt Month NY Heating Oil \$/MMBtu	\$22.12	(\$0.40)
Jan12 Future NY Heating Oil \$/MMBtu	\$22.25	(\$0.37)

	Last Close	Δ Day
Coal \$/ton		
Prompt Future Central Appalachian	\$69.73	\$0.51
Spot Powder River Basin 8800	\$13.20	\$0.00
Emissions \$/ton		
Spot SO ₂	\$0.75	\$0.00
NOx SIP Call 2011	\$6.50	\$0.00
Financial		
US Dollar/Euro	\$1.346	(\$0.000)
LIBOR - Treasury Bill (1 Month)	0.25%	0.00%
Gas Equity Index	222.45	(0.22)
Electric Equity Index	144.78	(1.24)
Debt Yield: Gas and Electric Utility	3.569%	0.00

System Constraints / Notable Events

System Constraints/Notable Events are not frequently included. The absence of events in this box does not mean that there are not any.

US Gas Rig Count is 877. Nymex close 3.524

The last trading day for the prompt month NYMEX NATURAL GAS FUTR contract is 11/28/11

	Spot Gas (\$/MMBtu)	Δ Day
Opal	\$3.41	\$0.02
Aeco	\$3.24	(\$0.01)



Market Oversight staff reviews market events daily (cont.)

Energy Markets Oversight Signals

Daily Summary as of COB

November 17, 2011

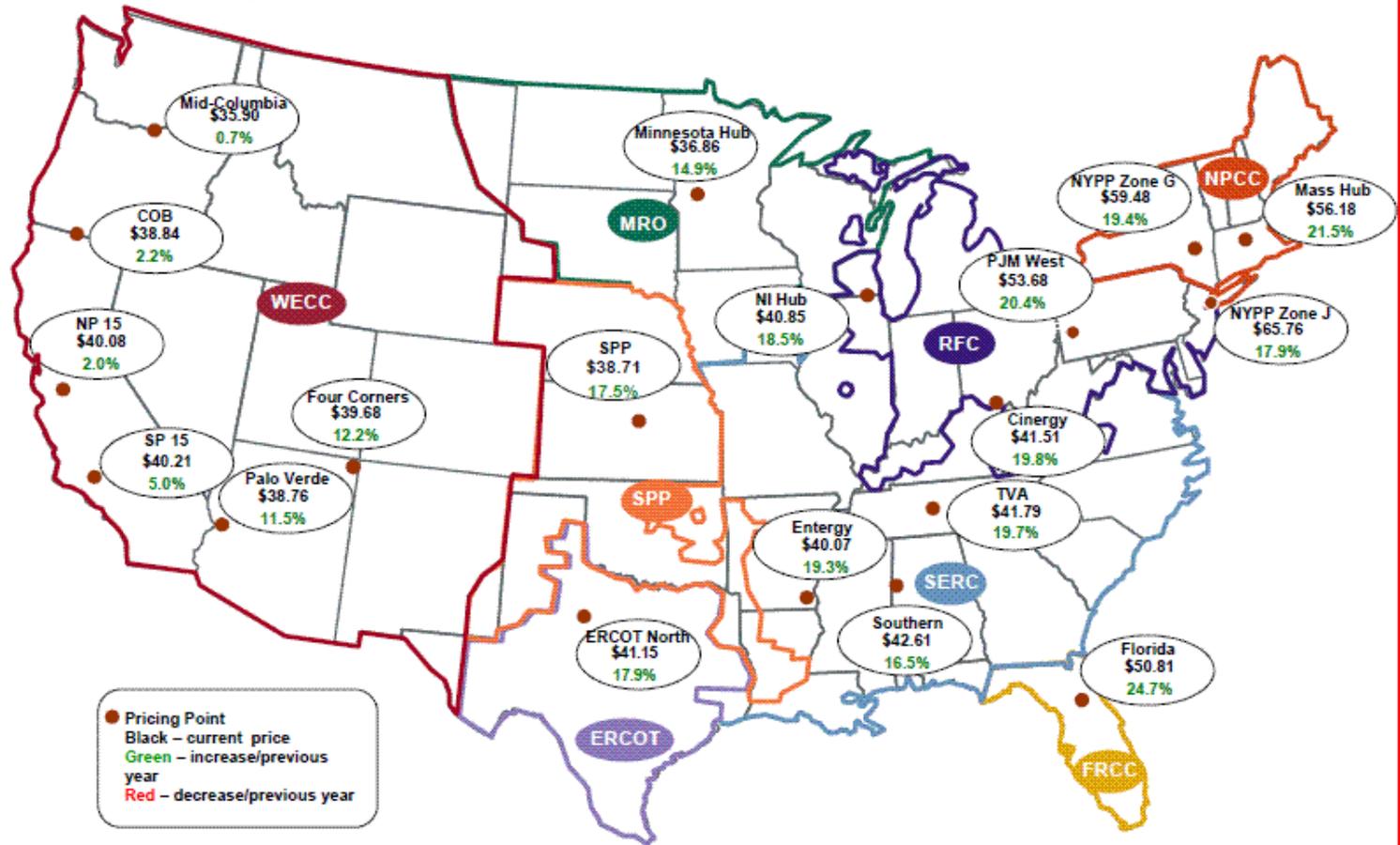
The "Next Season" for Elec/Gas forwards is for the Winter strip (Dec - Feb).

Regional View										
Spot Gas \$/MMBtu		Basis	Spot Elec \$/MWh		Implied	Spark Spread	Fwd Gas \$/MMBtu		Fwd Elec \$/MWh	
Last Close	Δ Day	Last Close	Last Close	Δ Day	Heat Rate	(\$/MWh)	Last Close	Δ Day	Last Close	Δ Day
New England										
\$3.96	\$0.08	0.85	\$41.50	(\$0.25)	10,480	\$13.78	\$7.21	\$0.06	\$62.11	1.06
Boston - Over next 7 days the forecast difference from normal temps ranges from 4° to 15°F. (Average: 9°F)										
New York City										
\$3.59	\$0.10	0.48	\$44.50	(\$6.25)	12,396	\$19.37	\$6.70	\$0.12	\$69.81	1.24
New York City - Over next 7 days the forecast difference from normal temps ranges from 6° to 16°F. (Average: 12°F)										
Mid-Atlantic										
\$3.56	\$0.12	0.45	\$43.50	\$2.25	12,219	\$18.58	\$3.56	\$0.07	\$49.04	0.78
Philadelphia - Over next 7 days the forecast difference from normal temps ranges from 6° to 15°F. (Average: 12°F)										
Southeast										
\$3.19	\$0.06	0.08	\$32.00	(\$1.00)	10,031	\$9.67	\$3.50	\$0.07	no srce	no srce
Atlanta - Over next 7 days the forecast difference from normal temps ranges from 15° to 31°F. (Average: 24°F)										
Midwest										
\$3.39	(\$0.01)	0.28	\$34.50	\$0.25	10,177	\$10.77	\$3.78	0.06	\$36.24	0.23
Chicago - Over next 7 days the forecast difference from normal temps ranges from 3° to 12°F. (Average: 7°F)										
Texas										
\$3.12	\$0.04	0.01	\$28.00	(\$1.91)	8,974	\$6.16	\$3.42	0.06	no srce	no srce
Houston - Over next 7 days the forecast difference from normal temps ranges from 17° to 33°F. (Average: 27°F)										
Northwest										
\$3.50	\$0.02	0.39	\$40.97	\$9.43	11,705	\$16.47	\$3.81	0.04	\$28.50	no srce
Seattle - Over next 7 days the forecast difference from normal temps ranges from -3° to 10°F. (Average: 4°F)										
Southern California										
\$3.54	(\$0.01)	0.43	\$33.50	\$0.50	9,464	\$8.72	\$3.67	0.04	no srce	no srce
Los Angeles - Over next 7 days the forecast difference from normal temps ranges from 0° to 5°F. (Average: 2°F)										
Southwest										
\$3.15	\$0.04	0.04	\$32.65	\$1.16	10,365	\$10.60	\$3.41	0.04	\$30.75	no srce
Phoenix - Over next 7 days the forecast difference from normal temps ranges from 8° to 11°F. (Average: 10°F)										



There are many electric hubs

Average On-Peak Spot Electric Prices 2010 (\$/MWh)



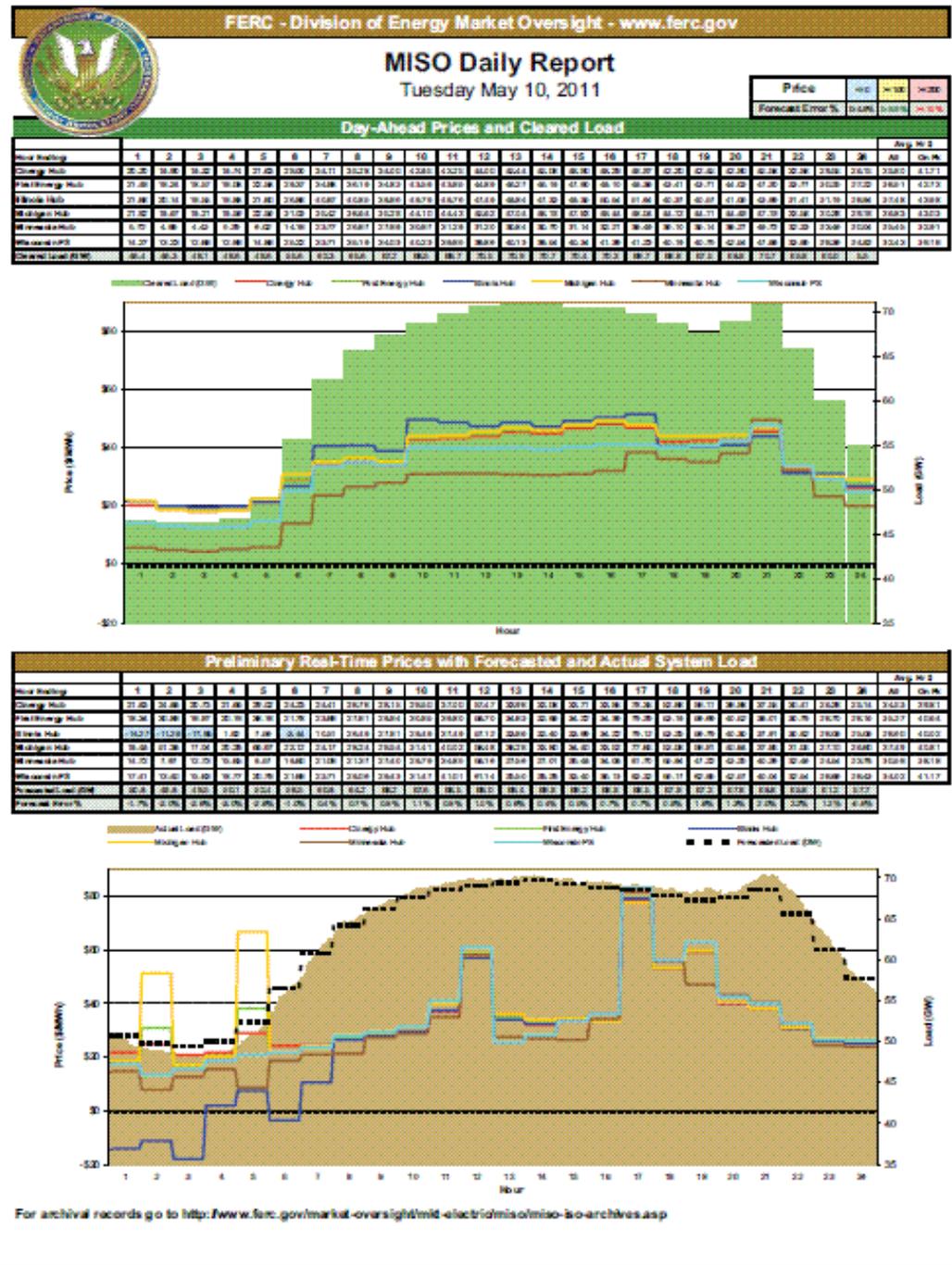
● Pricing Point
 Black – current price
 Green – increase/previous year
 Red – decrease/previous year

Source: Derived from *Platts* data.

Updated January 4, 2011



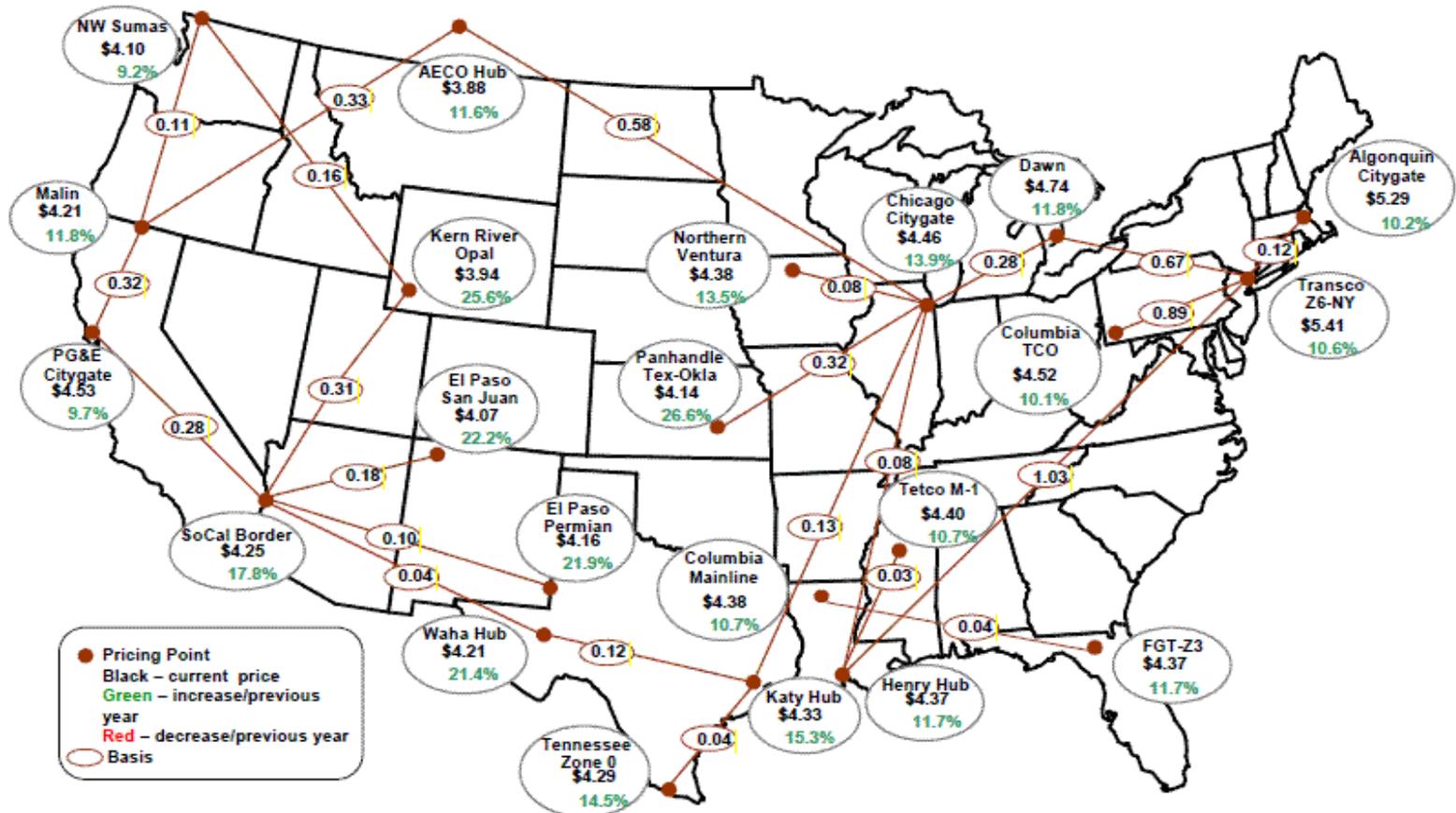
Market Oversight generates daily reports for analysts' review





The U.S. natural gas market tends to operate as a single market

Average Spot Gas Prices, 2010 (\$MMBtu)



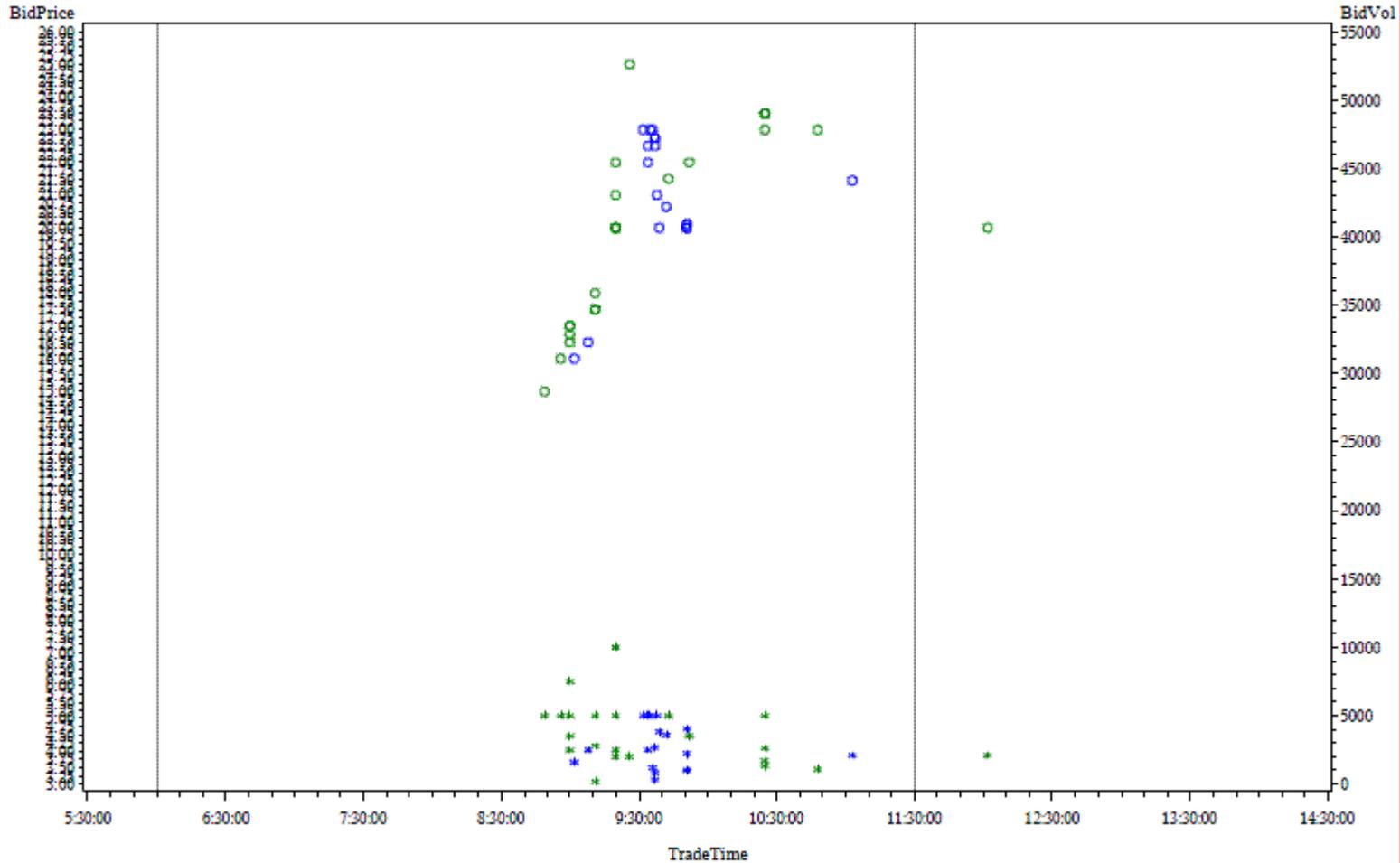
Source: Derived from Platts data.



Daily gas hub report

Spot Gas ICE Deals: Prices (circles) and Volumes (stars)

Bid-posted (blue) and Offer-posted (green)
for trading day 13DEC10, lines mark index base
Hub=Transco-Z6 (NY)



Data Source: ICE EOD
Analysis: OMOI



FERC Market Oversight also performs outreach to the public

The screenshot shows the FERC Market Oversight website in a Windows Internet Explorer browser window. The address bar displays <http://www.ferc.gov/market-oversight/market-oversight.asp>. The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The toolbar shows various icons for navigation and utility. The website header features the FERC logo and the text "FERC FEDERAL ENERGY REGULATORY COMMISSION". A search bar is located to the right of the logo. Below the header is a navigation menu with links for ABOUT, MEDIA, DOCUMENTS & FILINGS, INDUSTRIES, LEGAL RESOURCES, MARKET OVERSIGHT, ENFORCEMENT, CAREERS, CONTACT US, and FOR CITIZENS. The main content area is divided into several sections. On the left, there is a vertical menu with links for State of the Markets, Reports & Analyses, Market Snapshots, Market Views, Electric Power Markets, Natural Gas Markets, Other Markets, Questions/Feedback, Data Sources, and Guide to Market Oversight. The central section is titled "Market Oversight" and includes a "Download Desktop Icon" link and an "RSS News Feed" link. Below this, there are two main interactive maps: "Electric Power Markets" and "Natural Gas Markets". Each map has a "National Overview" link and a "Click on a Regional Market" instruction. The Electric Power Markets map includes a legend with regions: California, Midwest, New England, New York, Northwest, PJM, Southeast, Southwest, SPP, and Texas. The Natural Gas Markets map includes a legend with regions: Midwest, Northeast, Gulf, Southeast, and Western. Below the maps, there is a "Gas Trading Summary" link. At the bottom of the page, there is an "Other Markets" section with four sub-sections: "OTHER FUELS Prices", "WEATHER Forecasts, Heating & Cooling Degree Days", "RENEWABLES AND ENERGY EFFICIENCY Generation & Efficiency Standards", and "EMISSIONS GHG, SOx, & NOx". The "LNG Imports, Sendouts, & World Prices" section is also visible. The footer of the browser window shows "Local intranet | Protected Mode: On" and a zoom level of "100%".



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FERC's Market Manipulation Regulation: 18 C.F.R. §1c

- For wholesale electric and natural gas markets, it is unlawful for any entity, directly or indirectly, in connection with the purchase or sale of electric energy or natural gas or the purchase or sale of transmission or transportation services subject to the Commission's jurisdiction:
 - To defraud using any device, scheme or artifice (i.e. intentional or reckless conduct);
 - To make any untrue statement of material fact or omit a material fact; or
 - To engage in any act, practice or course of business that operates or would operate as a fraud or deceit.
- To be market manipulation, an action would also have to be done with the requisite ***scienter*** (intention or recklessness)

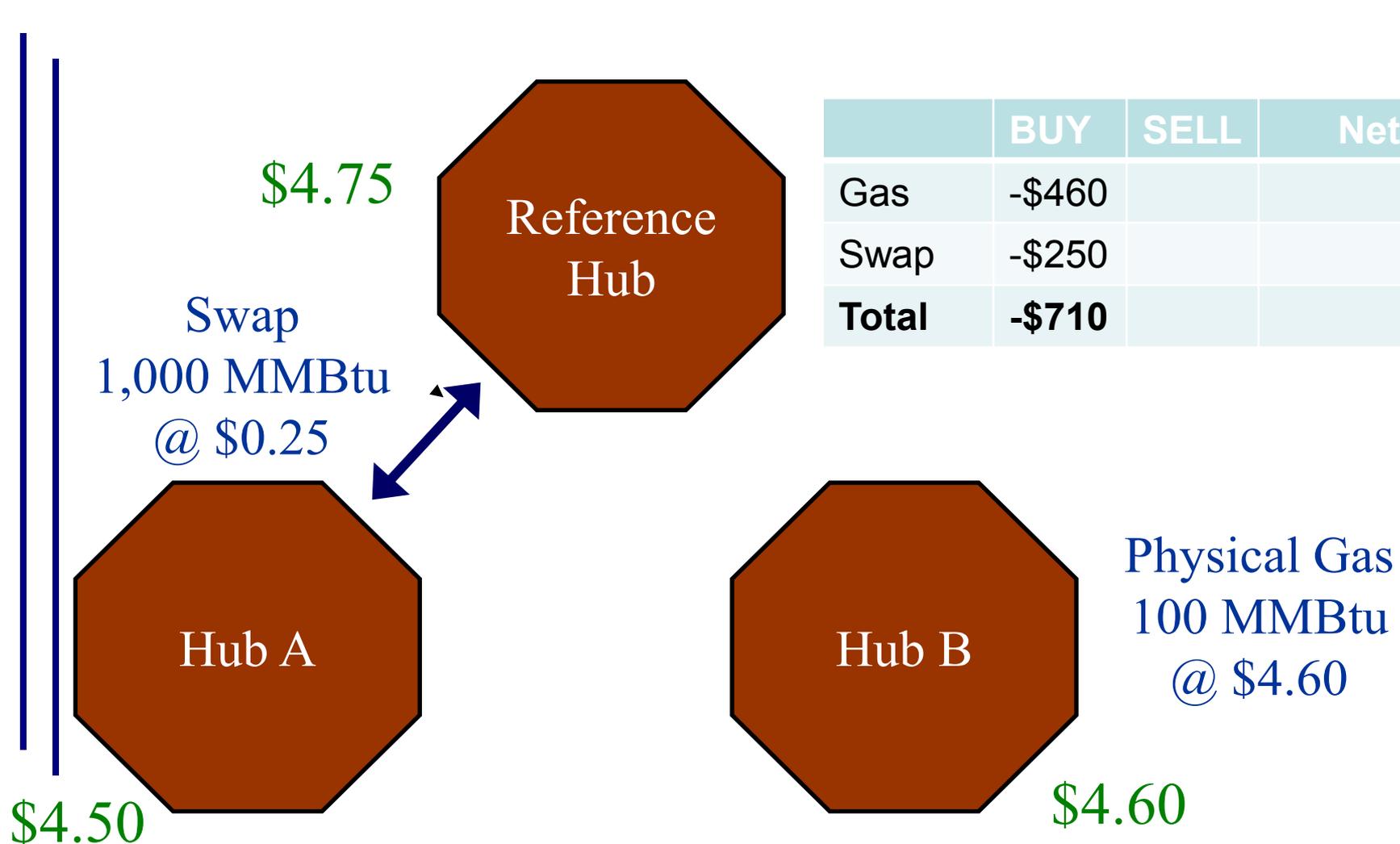


Areas of interest

- Failure to consider the actual economics of transactions
 - Acting out the perverse incentive to buy as high as possible and sell as low as possible
 - Ignoring the feedback of a competitive market
 - Sustained, seemingly irrational losses
- Trading in the underlying of a derivative
 - Classic Leverage - Financial to Physical
 - Leverage 2.0 - Fixed price setting an index
- Market outcomes
 - Heavy trading (for the given market) that causes uneconomic results



Using physical capacity to manipulate a financial spread

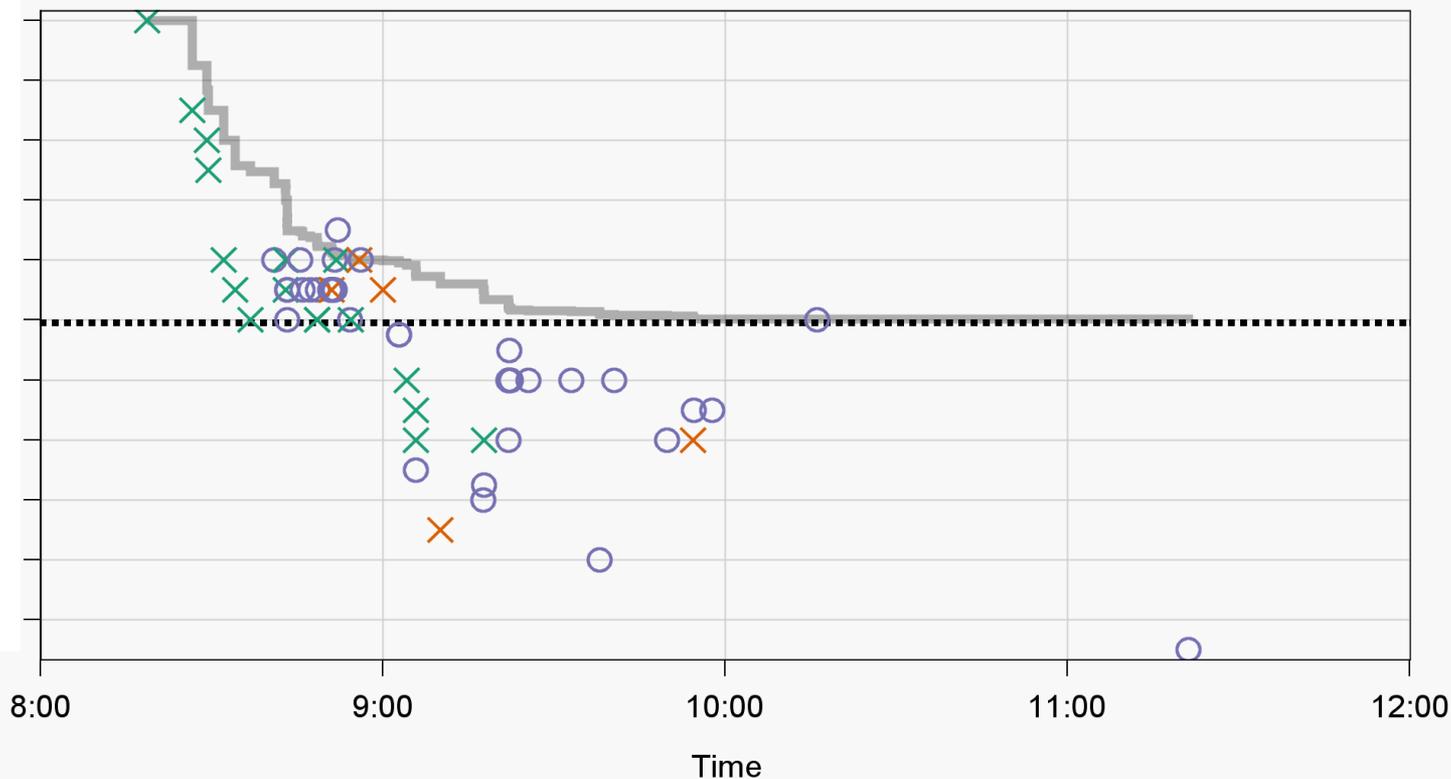




Banging the open/framing

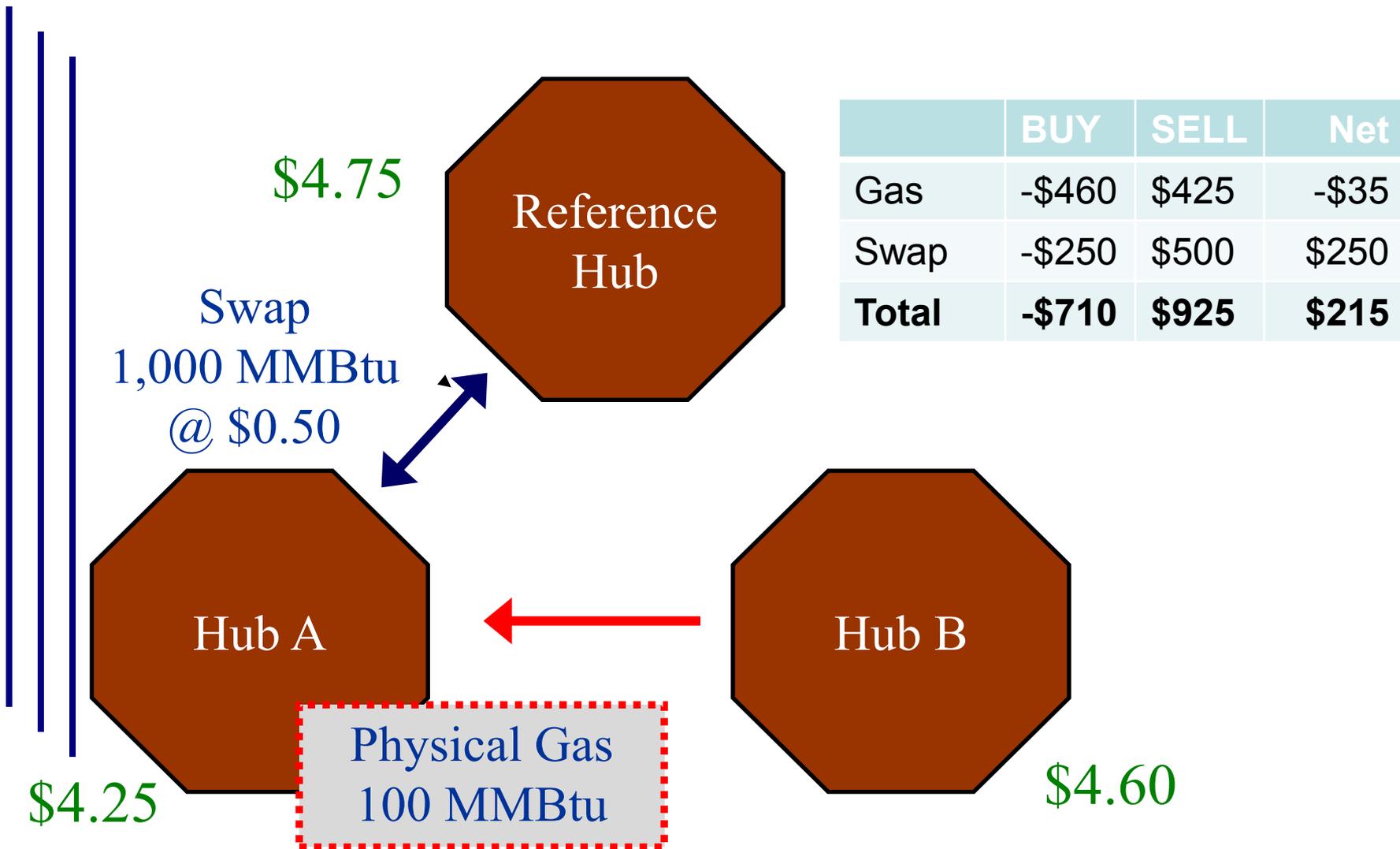
Next Day Gas, Phys. Fixed-Price on ICE

× Comp. X Sell ○ Market Deal × Comp. X Buy
..... ICE Indx. Settl. — ICE VWAP



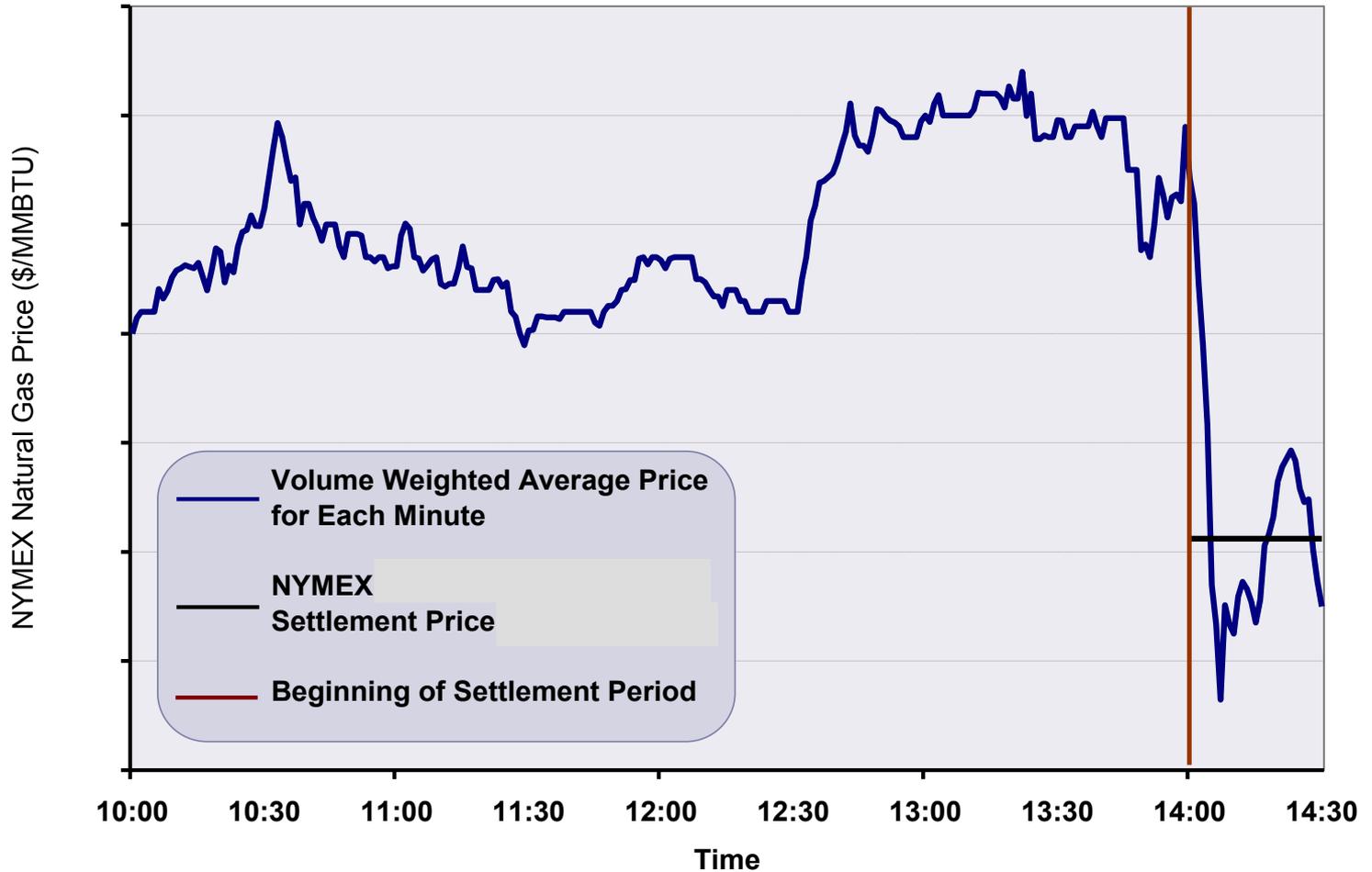


Using physical capacity to manipulate a financial spread (cont.)



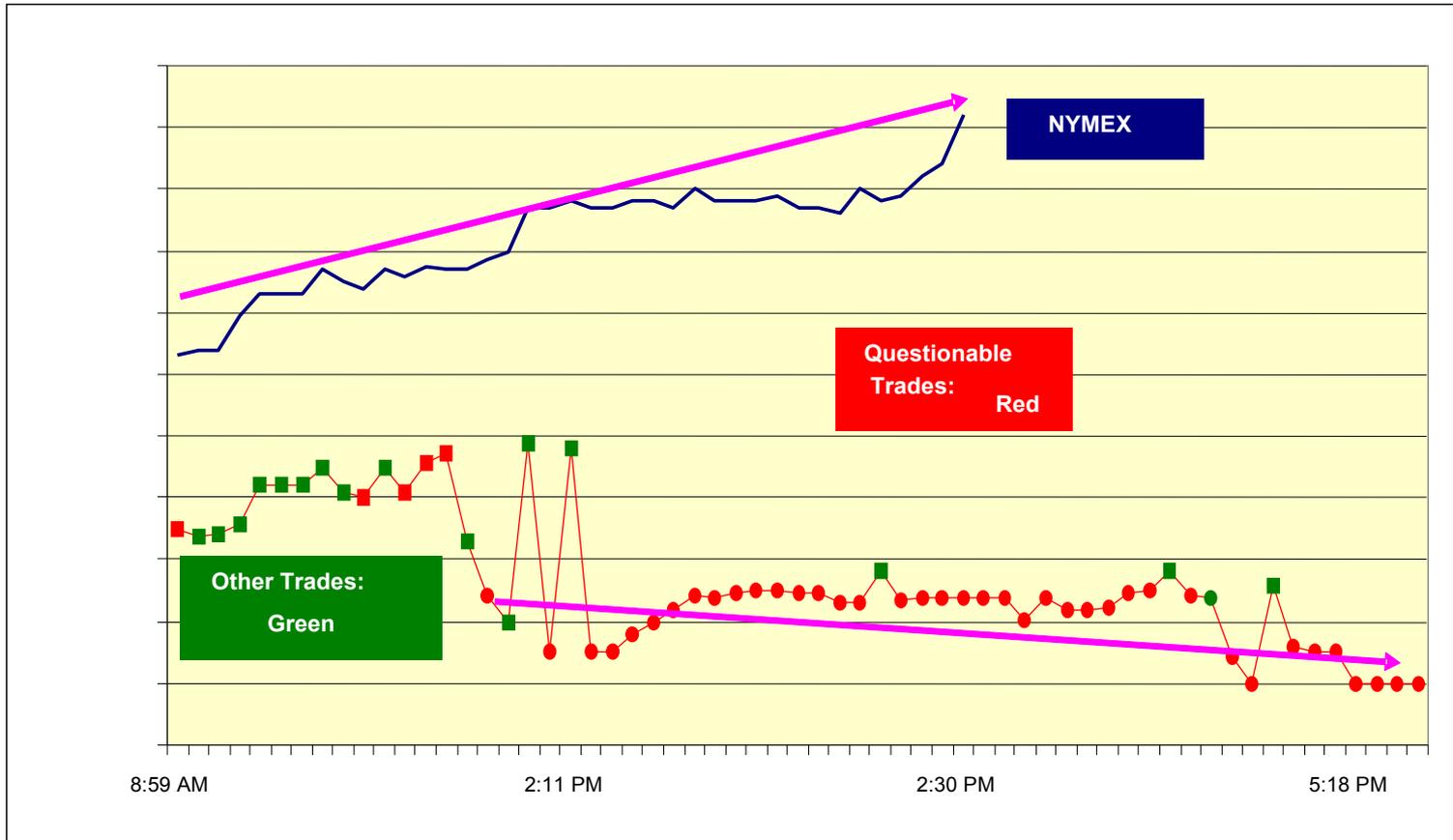


Dramatic changes during key market periods



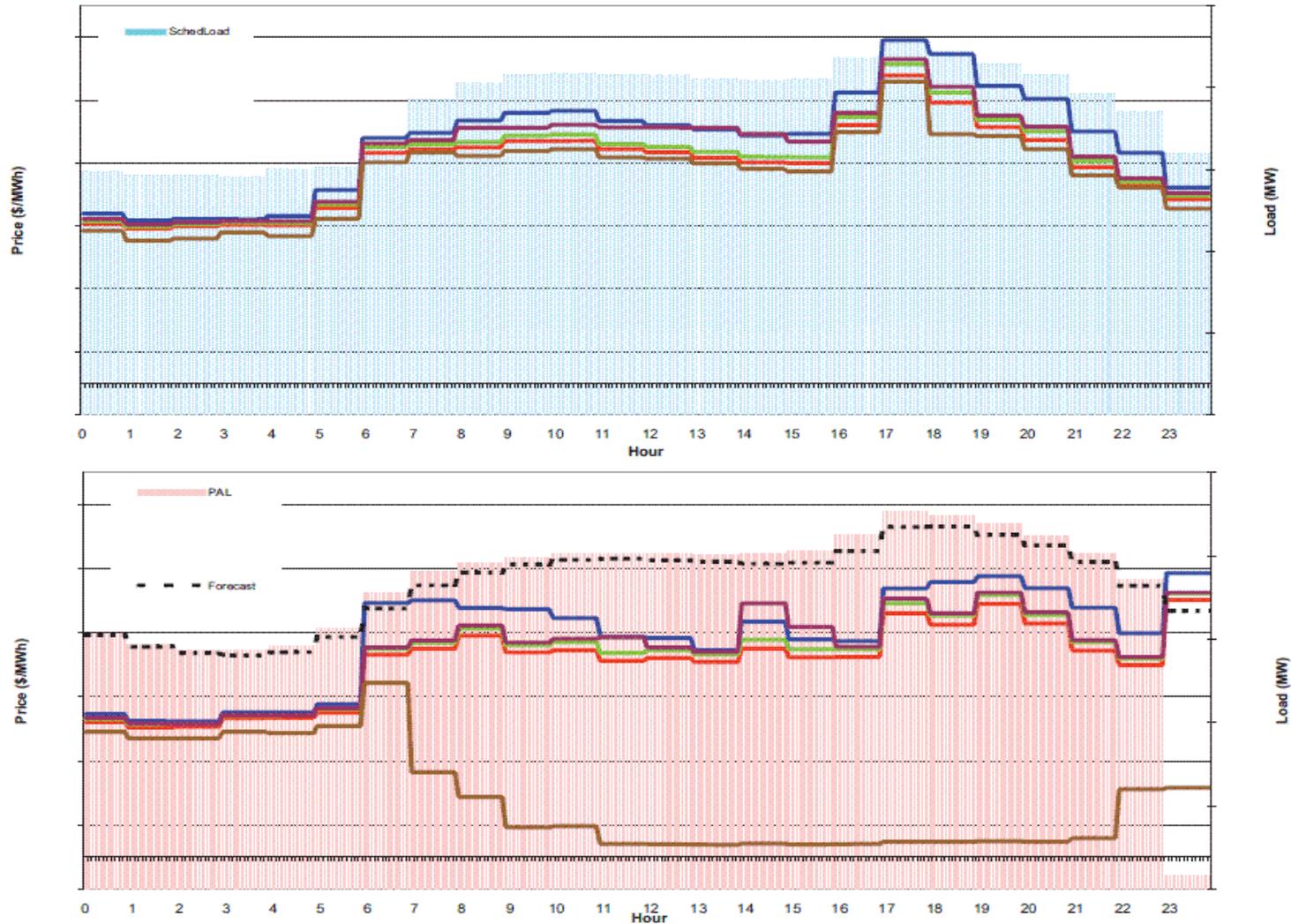


Changing price relationships during key market periods





Consistent divergence between real-time and day-ahead





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Sources of allegations

- FERC Hotline (1-888-889-8030)
 - Anonymous tips
- Market monitor referrals
- Observation
- Screens (expanding)
 - Algorithms based on previous observations



Public sources of data

- Market prices
 - Trading tick data, indexes, RTO data feeds
- Volumes
 - RTO data feeds, pipeline schedule postings
- Market participant transactional data
 - Electric Quarterly Report (1-4 month lag)



Other sources of data

- Data requests
 - To the financial market regulator (CFTC)
 - To the trading market regulator (CFTC)
 - To the RTOs and their market monitors
- Other sources
 - New rulemakings
 - Improve EQR (<http://www.ferc.gov/whats-new/comm-meet/2011/042111/E-5.pdf>)
 - Organize interchange reservations (<http://www.ferc.gov/whats-new/comm-meet/2011/042111/E-5.pdf>)
 - Set up routine confidential data feeds with RTOs (<http://www.ferc.gov/whats-new/comm-meet/2011/102011/E-1.pdf>)
 - Dodd Frank
 - Market participants (limited)



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The “Flamingo” Problem



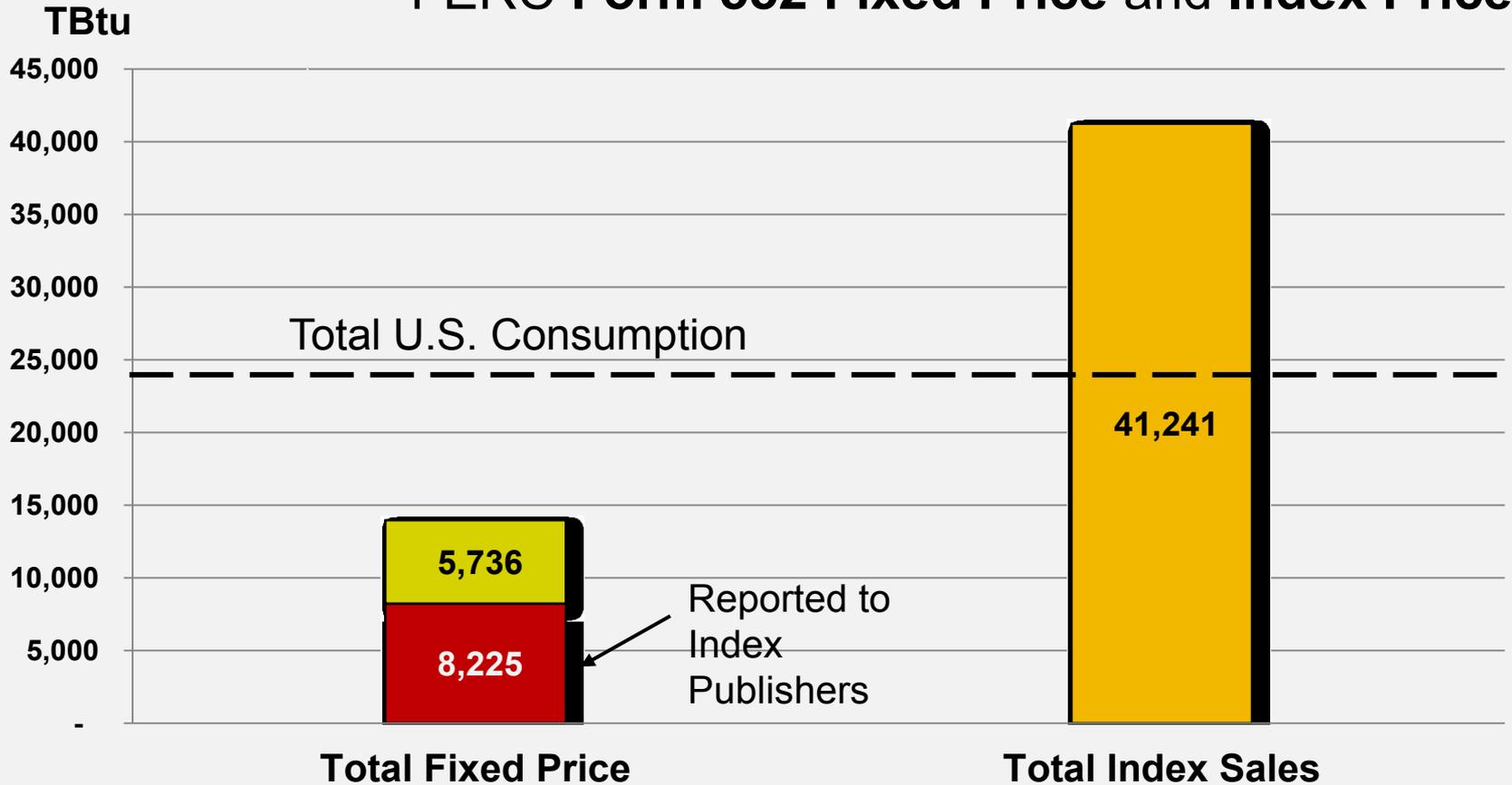


Physical index prices rely on relatively few fixed-price deals

Source: FERC Form

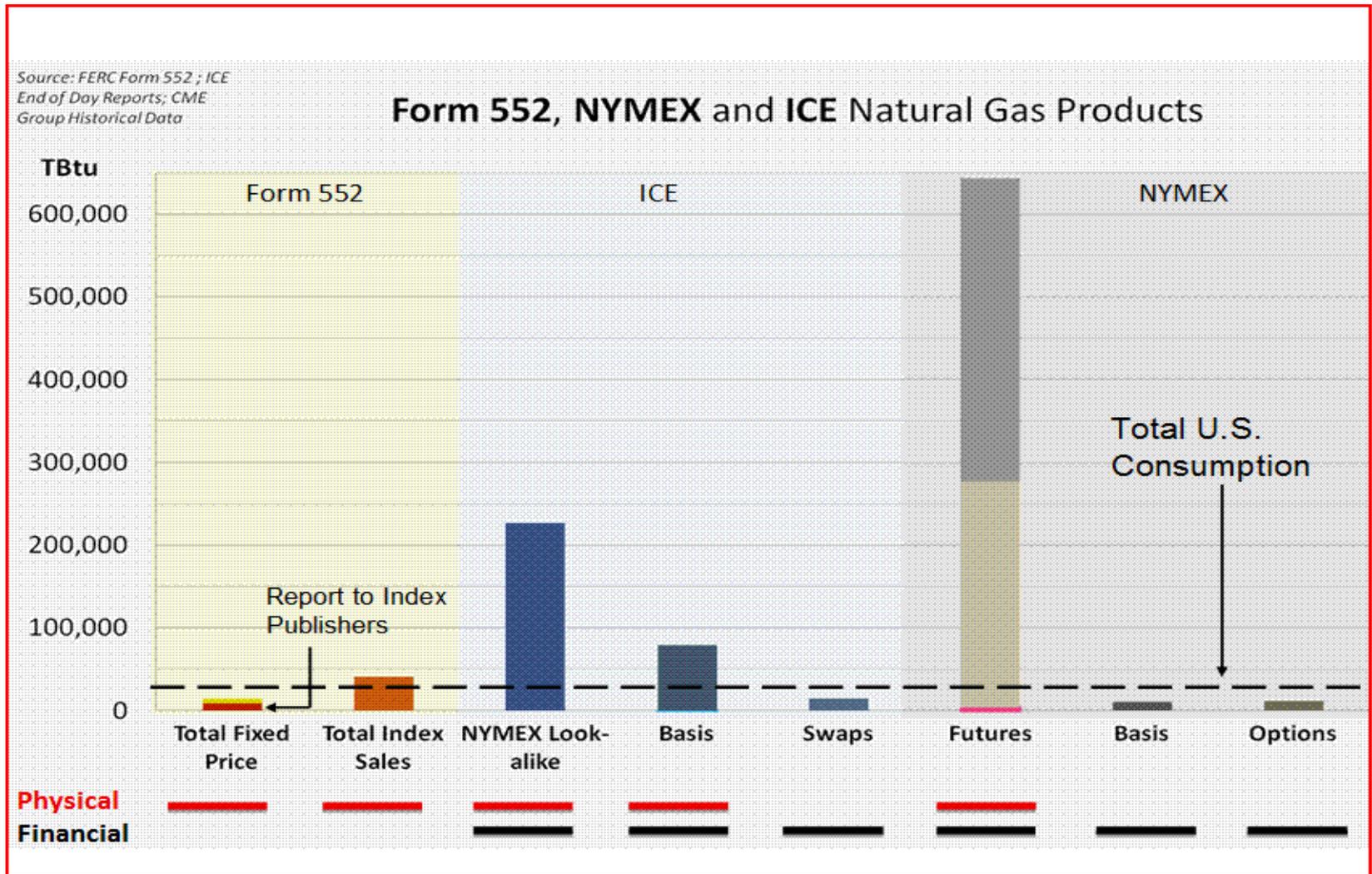
552

FERC Form 552 Fixed Price and Index Price





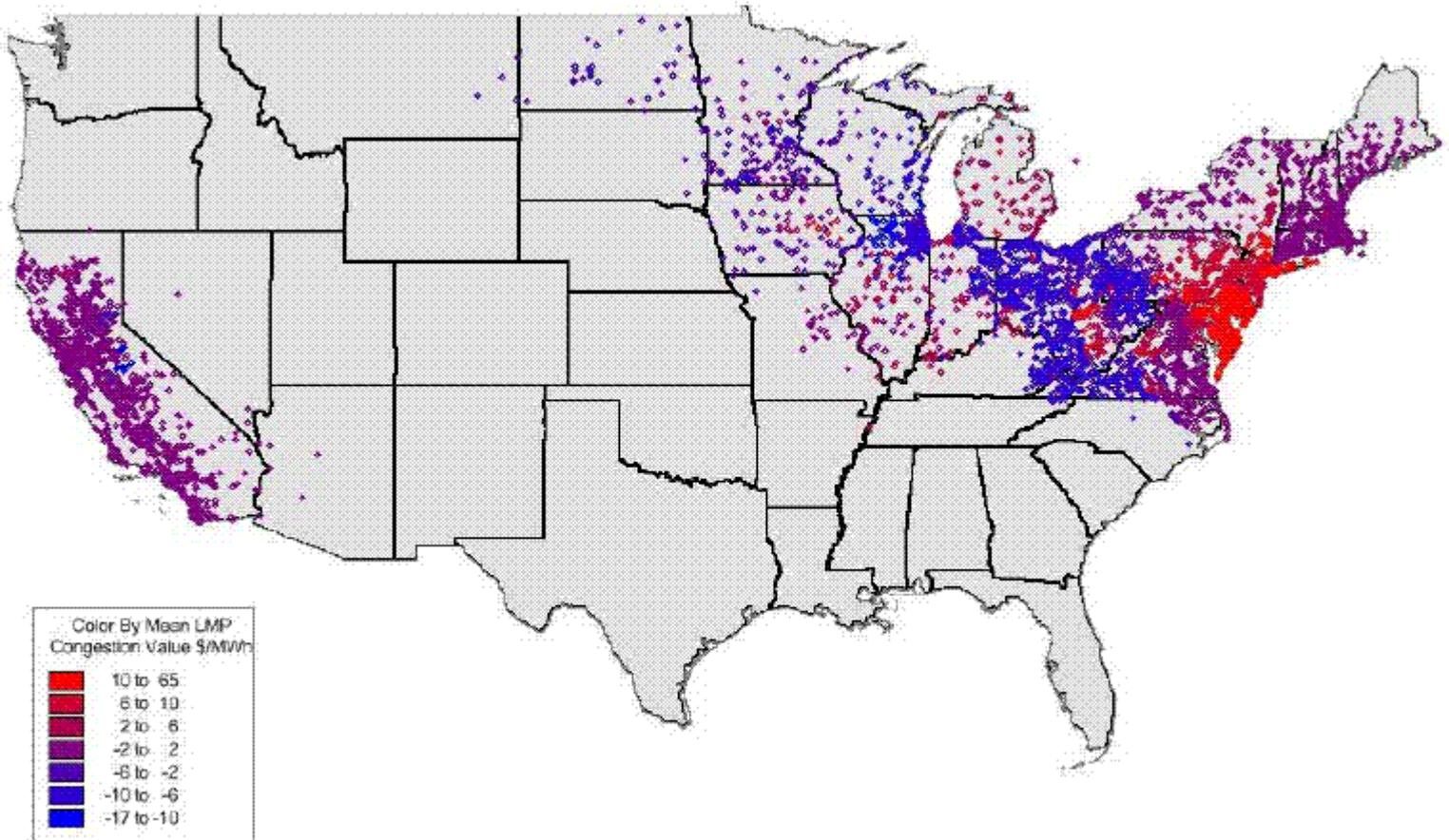
Financial products also derive their value from the same base





Electric markets are complex

Day Ahead On-Peak Avg. Monthly Congestion - July 2011



Source: Velocity Suite

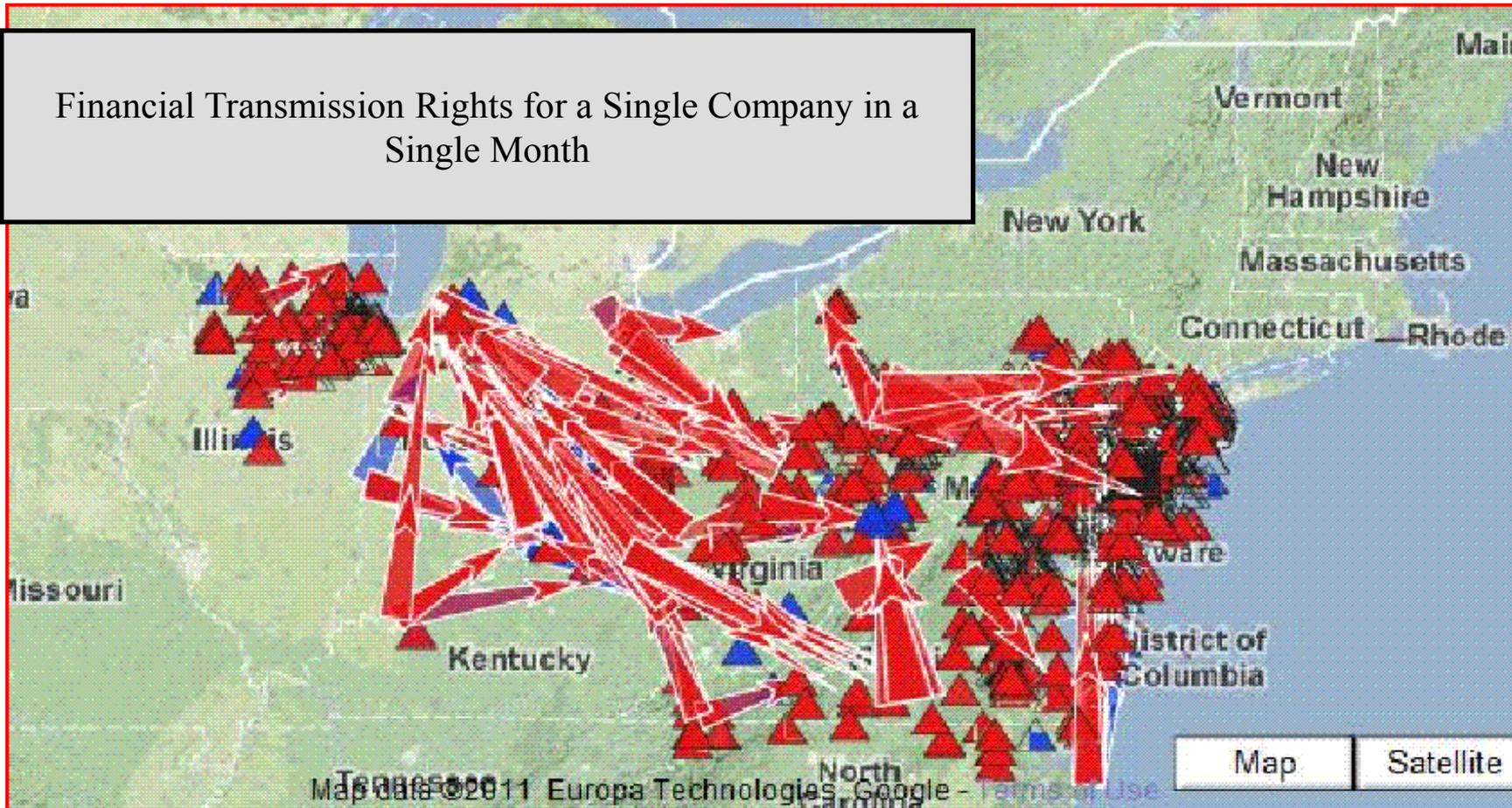
Updated August 12, 2011

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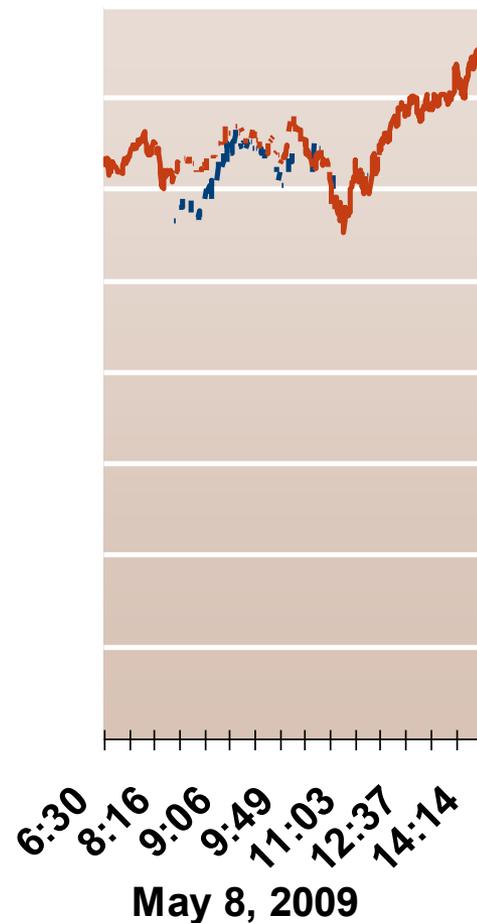
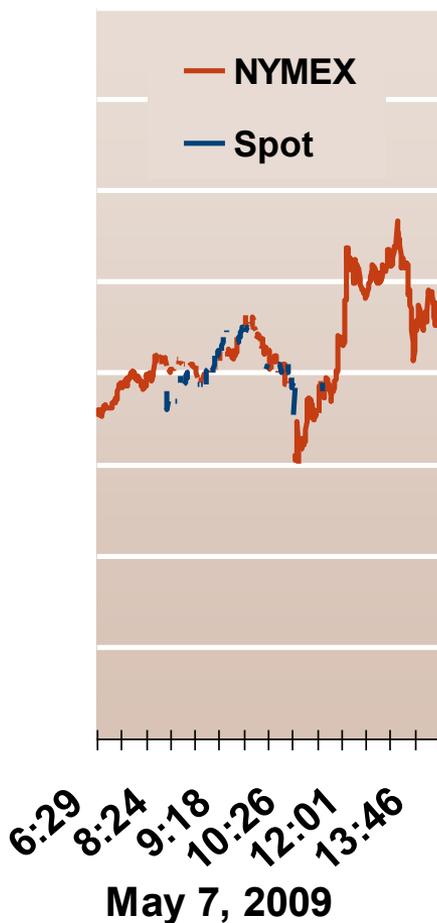
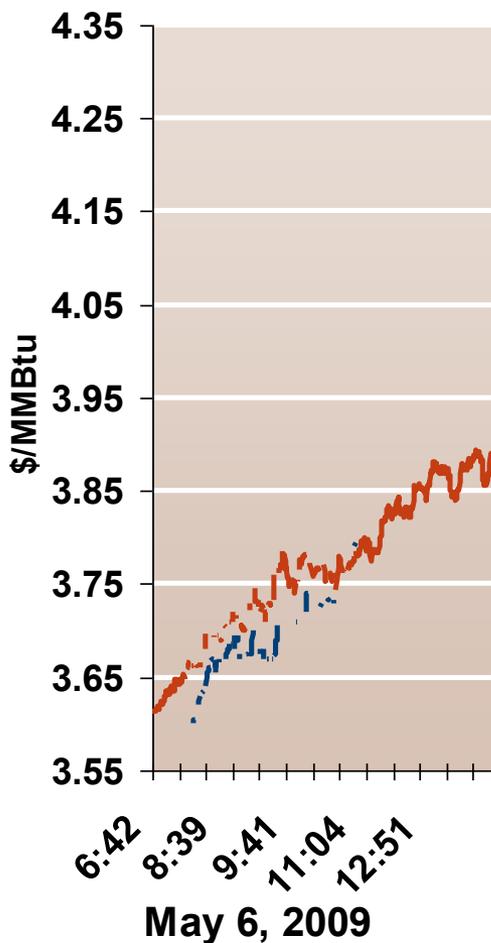
Sophisticated market participants depend on the markets' complexity

Financial Transmission Rights for a Single Company in a Single Month





Physical markets can follow financial markets





Summary

- Market oversight at FERC entails:
 - Market monitoring: serving as a resource for market information
 - Surveillance: identifying market anomalies
 - Transaction analysis: assessing their causes
- The physical natural gas and electric markets can be targets of manipulation
 - One role of market oversight is to distinguish between benign occurrences and evidence of wrongdoing
 - Certain characteristics help determine which is which
 - The Division is moving toward increasing automation and is pursuing additional data to do so