



Regional Seminar Series Charlotte, North Carolina



Industrial Scale Demand Response

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Alcoa Power Generation

November 18, 2010

Empowering Business in Real-time.

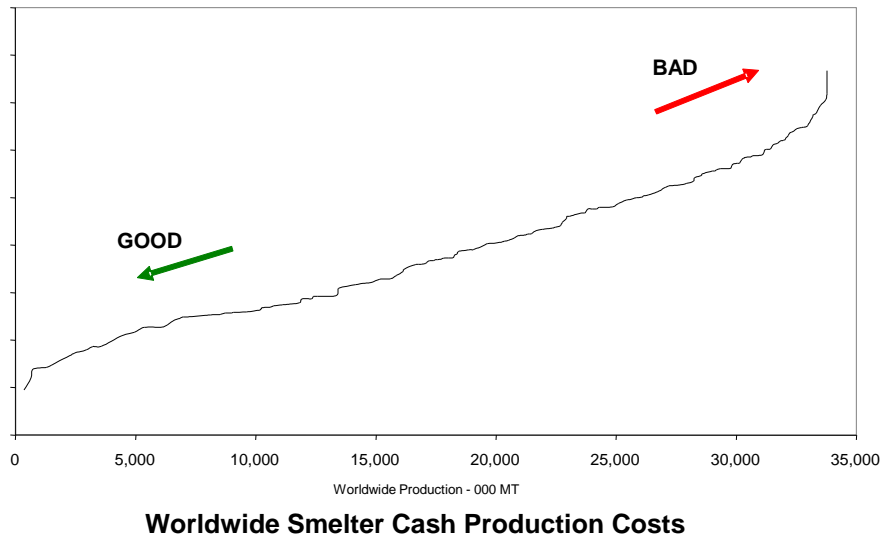
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Generation Assets:

- 780 MW's Coal Generation
- (4) B&W Wall-Fired Boilers
- Vintage 1960's
- 2.8 mm tons coal/annual
- Illinois basin with Low NO_x burners/SCR
- FGD Scrubbers

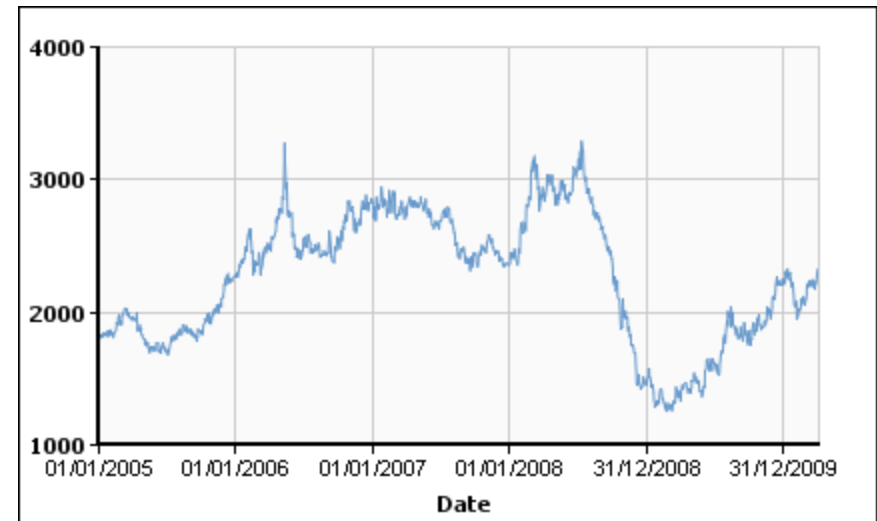
Energy is 30-40% of Aluminum Production Costs....



**Competition in a
Worldwide Commodities
Market....**

**Warrick Operations is
Alcoa's Largest Operating U.S. Smelter**

- **330,000 MT capacity/year**



Midwest ISO Interface

Warrick Power Plant



Energy
Supplied



Aluminum Smelter



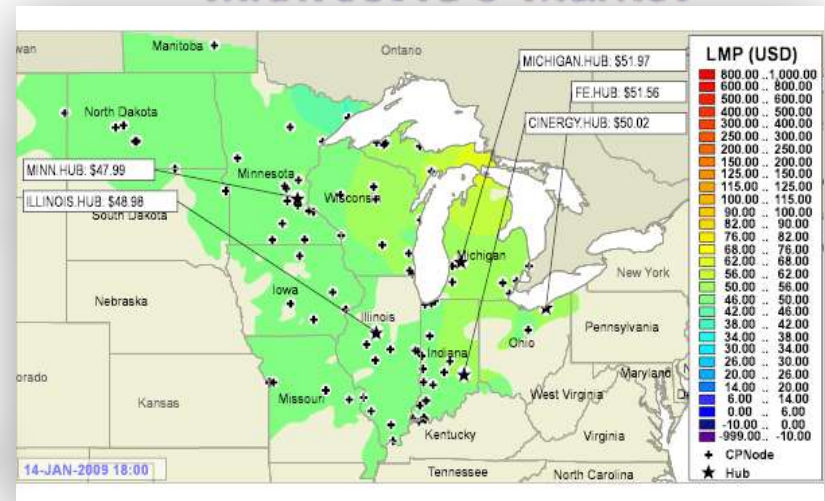
Rigid Packaging

Energy
Sales

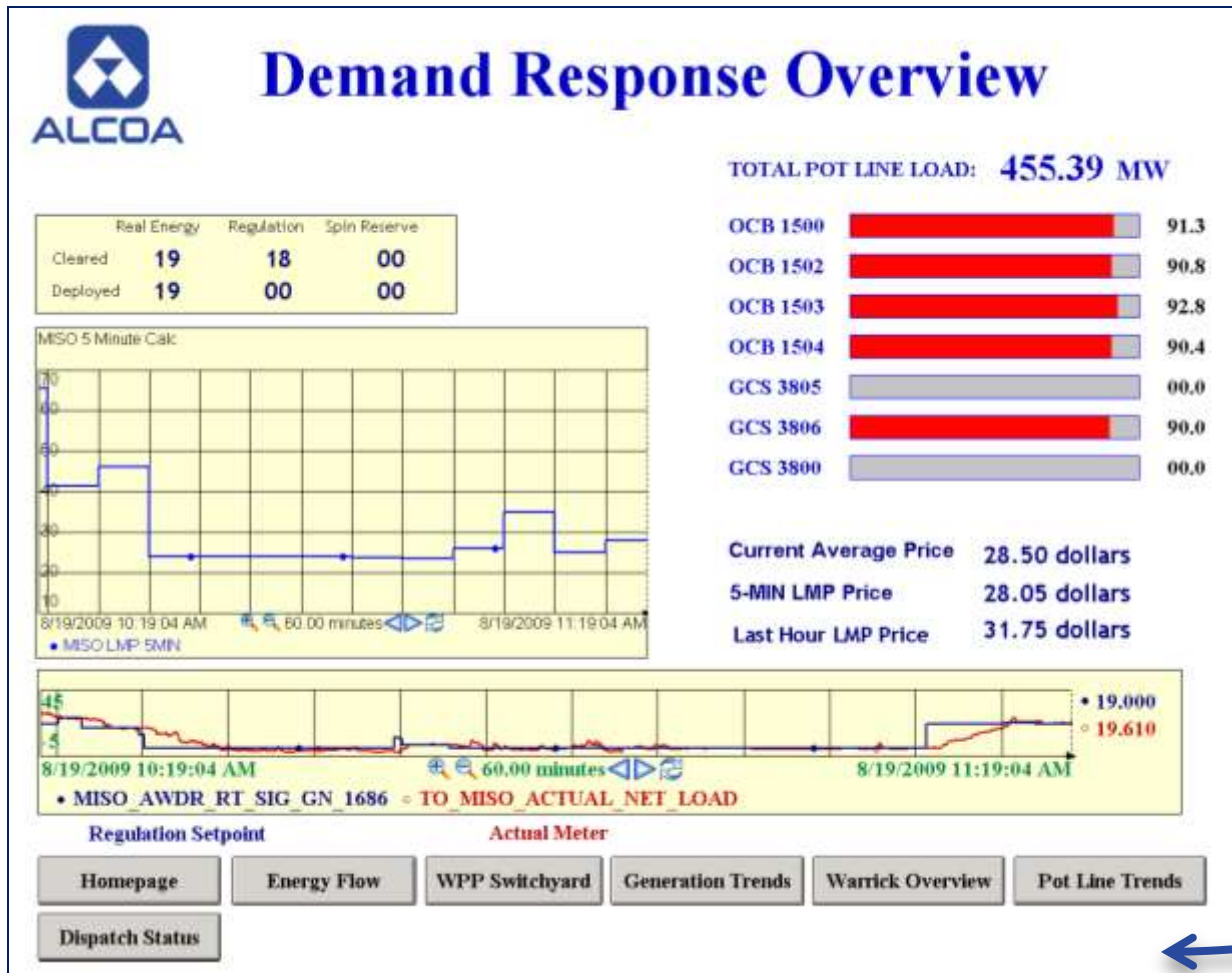
Energy
Purchases

Demand
Response

Midwest ISO Market



Warrick Demand Response

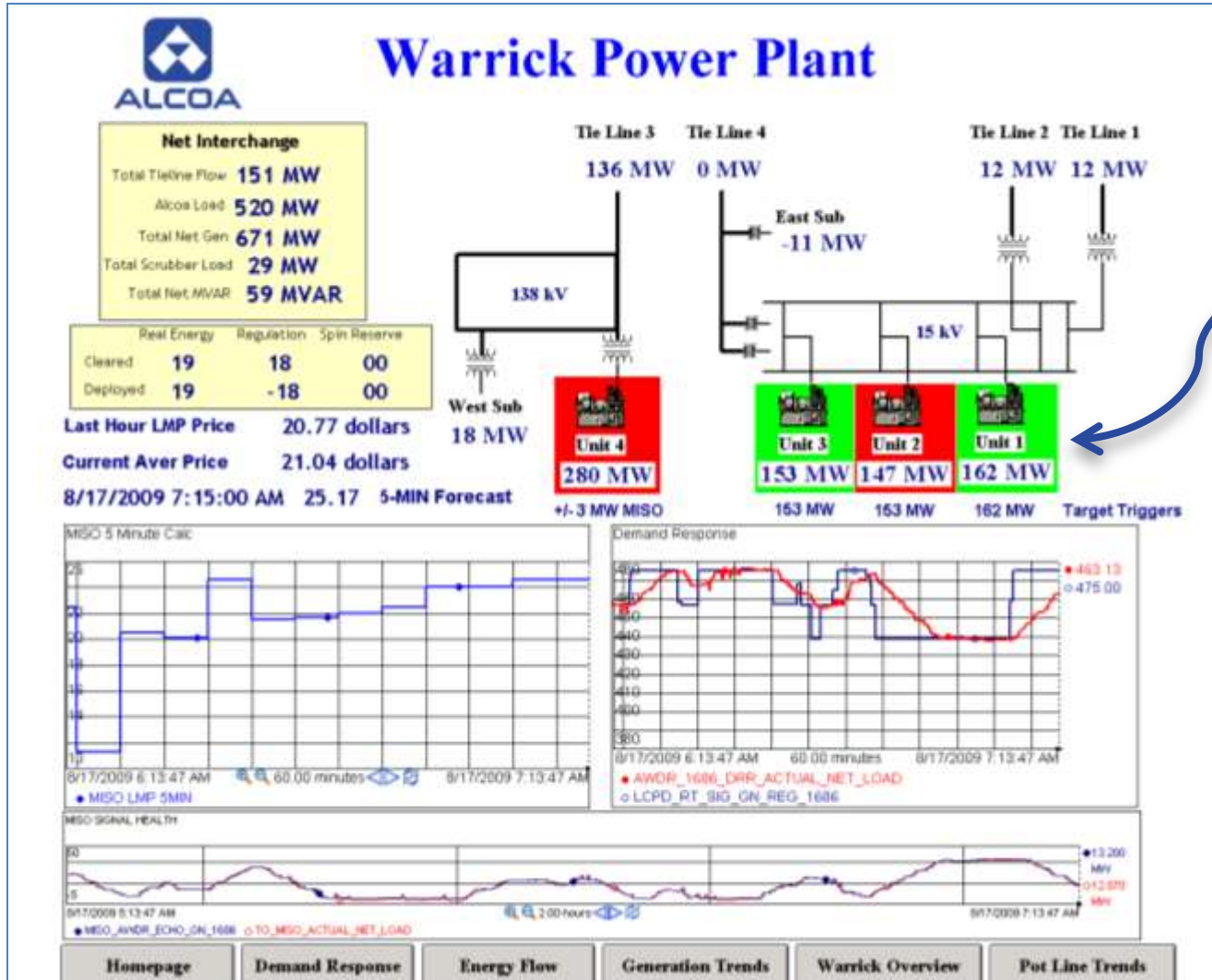


Real-time
Data

Customer
Driven

Hyperlinks

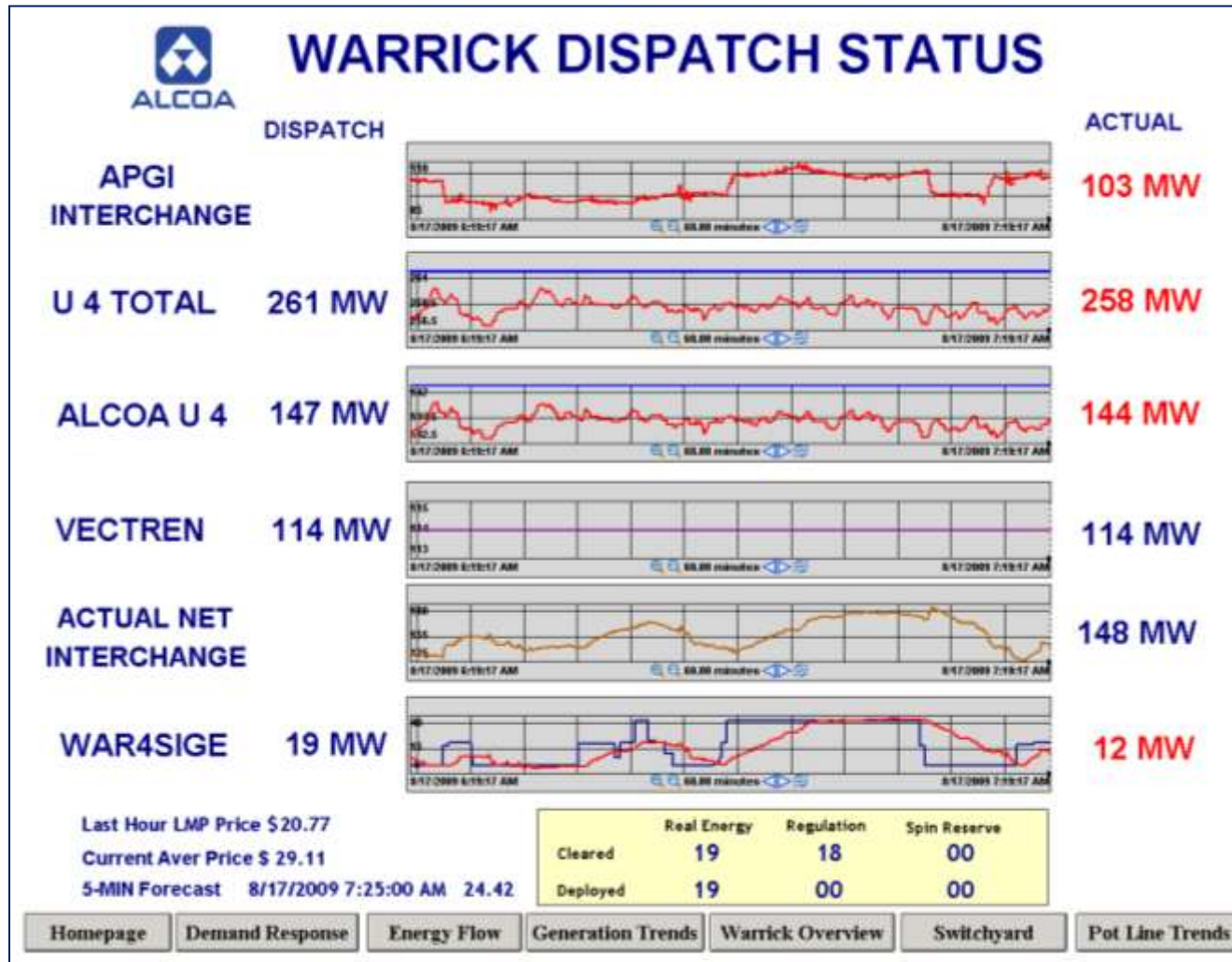
High Level Overview



Performance
Indicators

Intra-net
Accessible

Power Plant Operating Tools



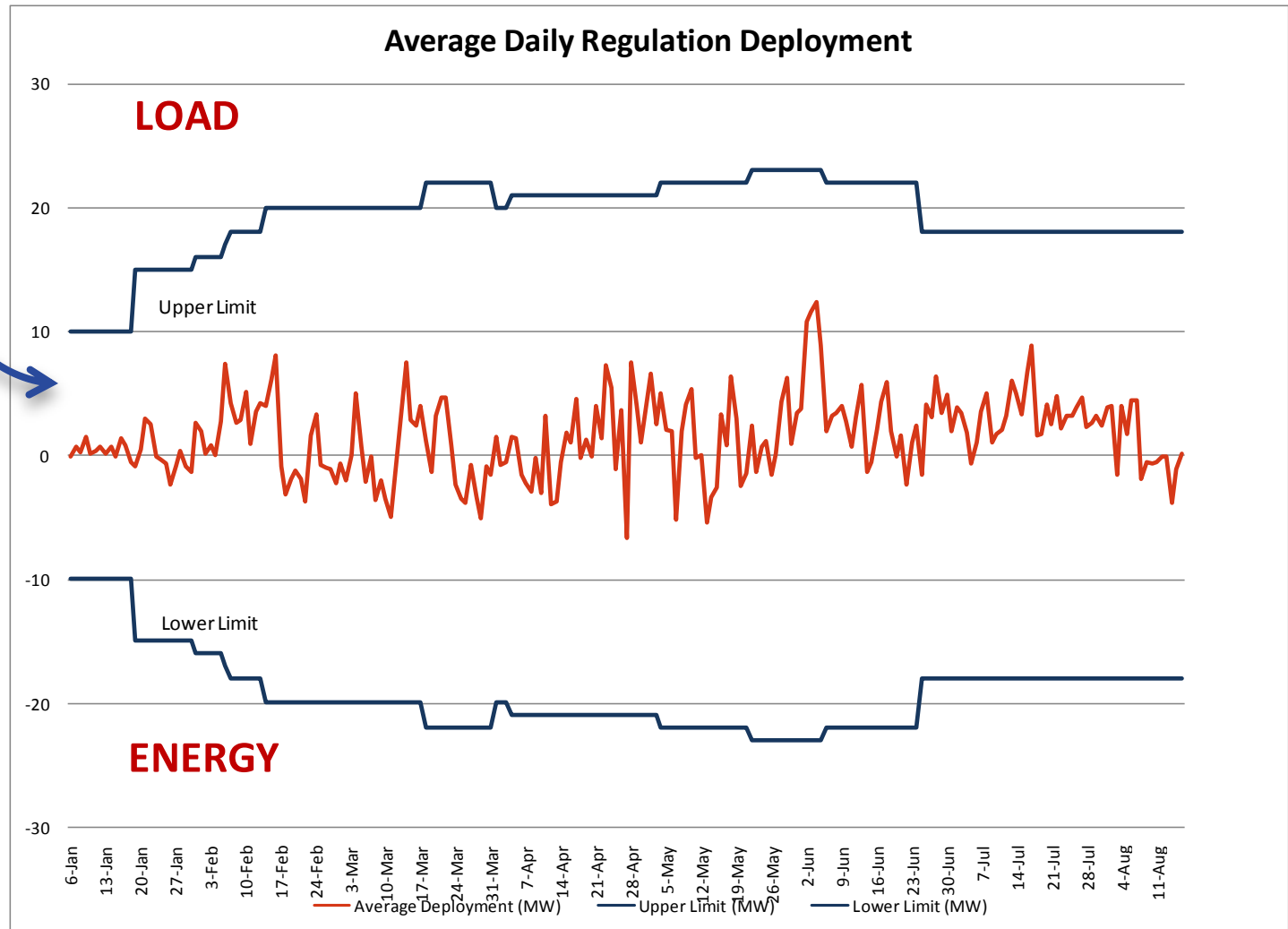
Functionality

Operator
Buy-in

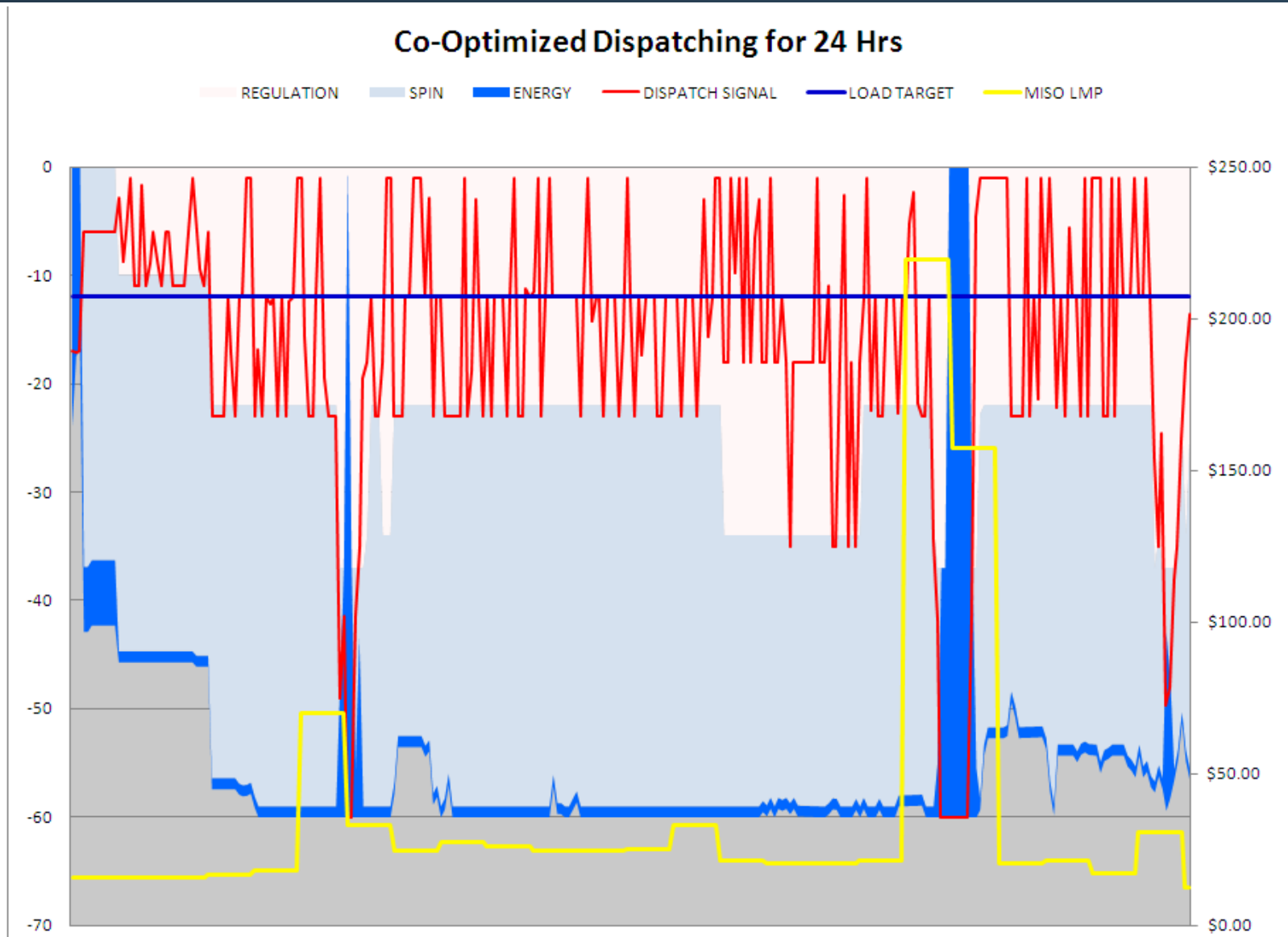
Ownership

Daily Production Impact of Regulation

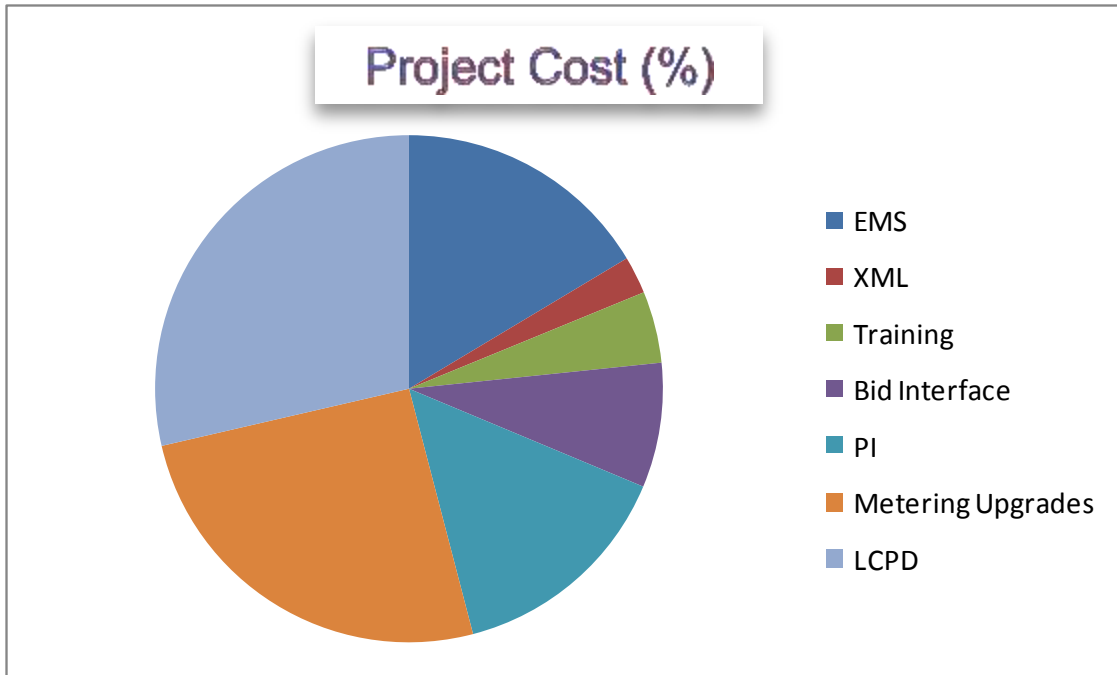
Data Analysis



Co-Optimized Dispatching



Financial Benefits



Total Project Cost = \$700,000

Project
Payback?

4 Months

- RoviSys selected as partner
- OSIsoft Partner
 - Consulting, SI and ISV
- MISO application scope
 - Submit energy bid and offer information
 - Monitor MISO for notifications
 - Submit forecasted load data from the PI System
 - Next – mobile application to schedule outages from cell phones



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Thank you

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