


GDF SUEZ



What Customers get the Best Electricity Prices?

Globalcon 2010
Philadelphia, PA
March 25, 2010



- PA utility standard offer post-rate cap
- Deregulated market cost structure and components
- Retail energy product structures
- Sample load shapes
- The Risk / Reward Spectrum
- Customer Scenarios
 - Paterno Industries
- Why GDF SUEZ?

PA Utility Offerings

- Large C&I customers (>500 kw)
 - Default service from utility at fixed price (first year only)
 - Default Service from utility at Day- Ahead Hourly prices
- Residential and Small C&I (≤ 500 kw)
 - Default service from utility at fixed price
 - Prices change annually
 - Fixed prices set based on a portfolio of wholesale energy purchases made over time
 - PECO prices will be roughly no change
 - Other utilities have energy price increases of 25-35%

Two components of energy:

Energy

- Output of generator + losses & congestion
- Majority of total energy cost
- Volatile yet liquid
- Determined by market forces

Cost is Manageable

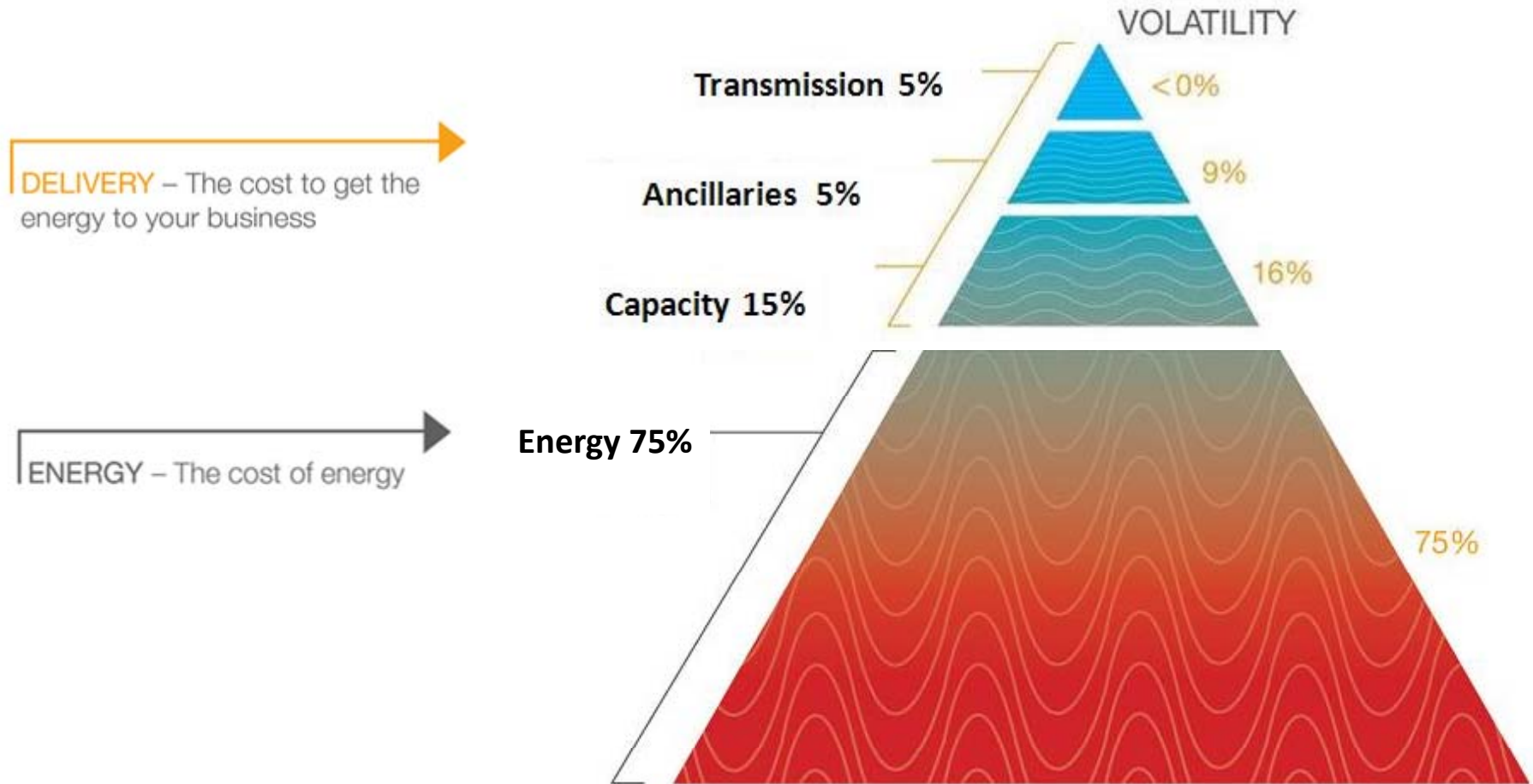
Delivery

- Cost of moving energy from generator to meter
- Smaller portion of total energy cost
- Low volatility; tariff-based
- Determined predominantly by regulatory bodies and ISOs

Customers are price - takers:

Costs are less manageable

Electricity Cost Components – PJM



* Percentages are approximate

GDF SUEZ PJM – Capacity, Transmission, Ancillaries

- Capacity

- Cost for generation installed
- PJM sets capacity costs 3 years in advance through an auction process known as Reliability Pricing Model (RPM)
- Capacity cost = PLC demand * the RPM cost
 - PLC is each customer’s Peak Load Contribution
 - You have some control over your PLC
 - PPL RPM costs:

	PY 07/08	PY 08/09	PY 09/10	PY 10/11	PY 11/12	PY 12/13
\$/MW-Day	40.69	113.22	193.89	174.29	110.04	133.46
Est. \$/kWh	\$0.0031	\$0.0086	\$0.0147	\$0.0132	\$0.0083	\$0.0101

- Transmission

- Cost for transporting power over the interstate transmission grid
- Regulated by FERC under the Network Integrated Transmission Service tariff for each transmission owner (utility)
- NITS in PPL: \$17,487/MW-year; Equates to \$0.0036/kWh
- NITS in PECO: \$20,942/ MW-year; equates to \$0.0043/kWh
- Transmission owners (utilities) have been increasing transmission charges regularly over the past several years
- Expect increases to continue as additional grid expansion is built and “smart grid” technologies are deployed

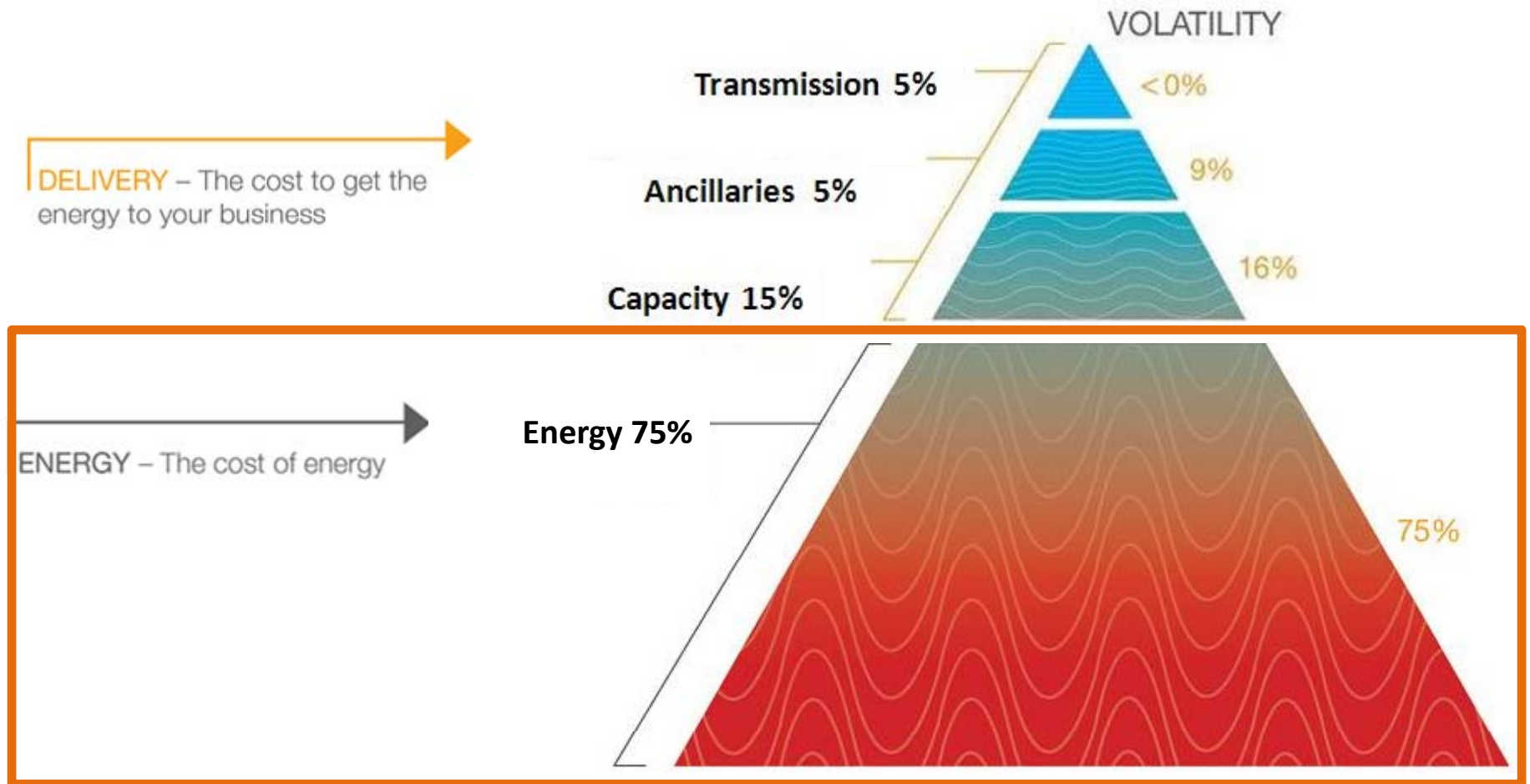
Other Supplier Costs

- **Ancillaries**
 - Additional products and services provided by PJM to ensure safe and reliable operation of the regional electricity system
 - Operational products & services – Voltage Control, Frequency Regulation, Operating Reserves
 - Administrative Services – System control & Dispatch, market administration
 - Regulatory Must Run charges
 - Coal plant retirements due to age and potential carbon restrictions
 - Some units will be required to keep operating for reliability until new generation or transmission upgrades can be completed
 - PJM has announced RMR charges in PECO due to requested retirement of 4 Exelon Generation plants
 - PECO RMR charges are unknown at this time
 - Understand how a supplier is handling it
- **Taxes: Be sure to understand how suppliers handle address taxes:**
 - PA Gross Receipts
 - NJ Sales and Use Tax
 - City of Philadelphia Business Privilege Tax

Strategies for Managing Delivery Costs

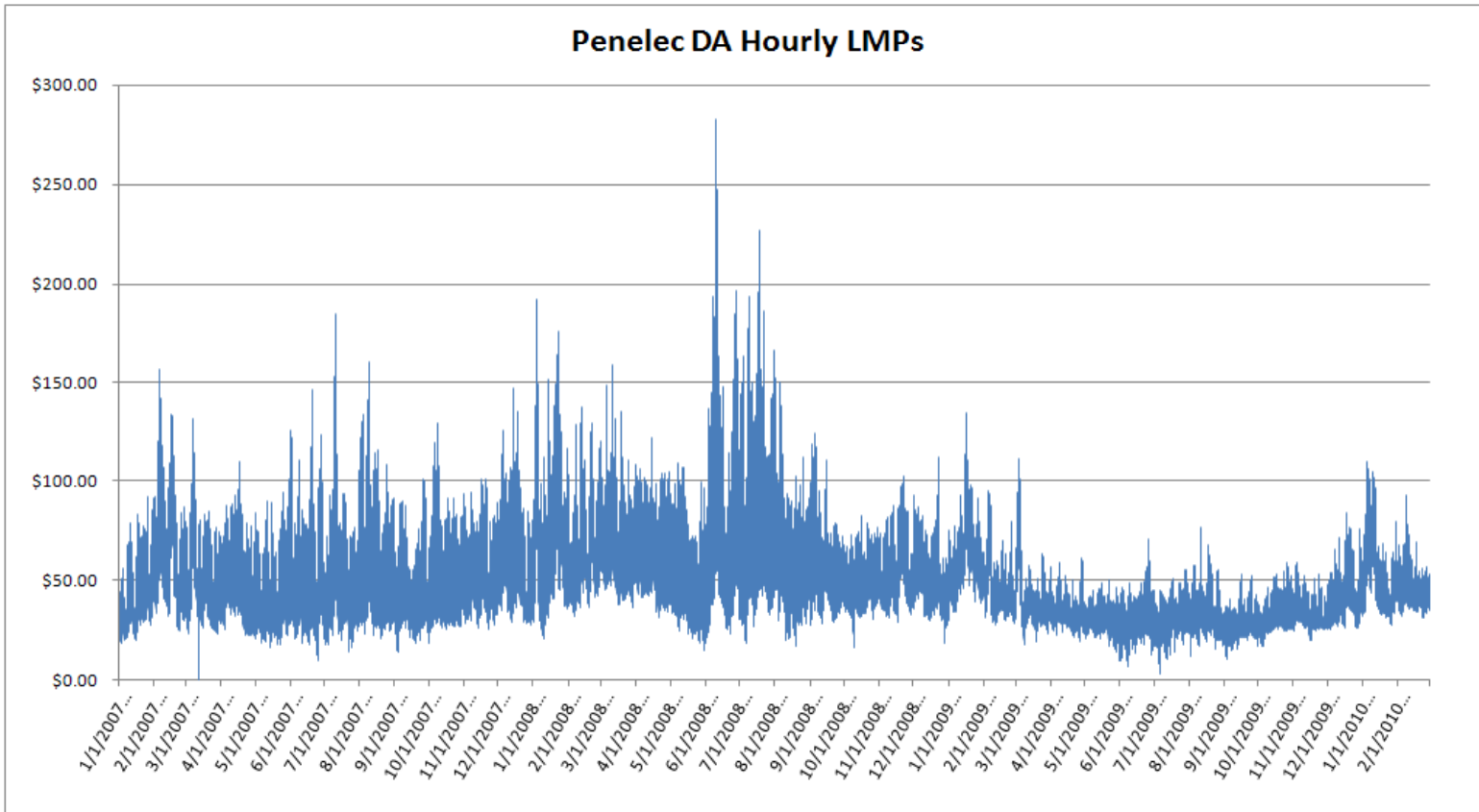
- Control your Peak Load Contribution
 - Measures a customer's demand (or capacity) simultaneous to the grids peak hours
 - Typical occurrence: between 4-6 p.m. weekdays from late June through August on very hot, humid days
 - Strategy 1: Avoid or reduce operations (load) in hours when grid load is expected to peak
 - Strategy 2: Run on-site generation during those potential peak hours
 - Strategy 3: Demand Response programs

Electricity Cost Components – PJM



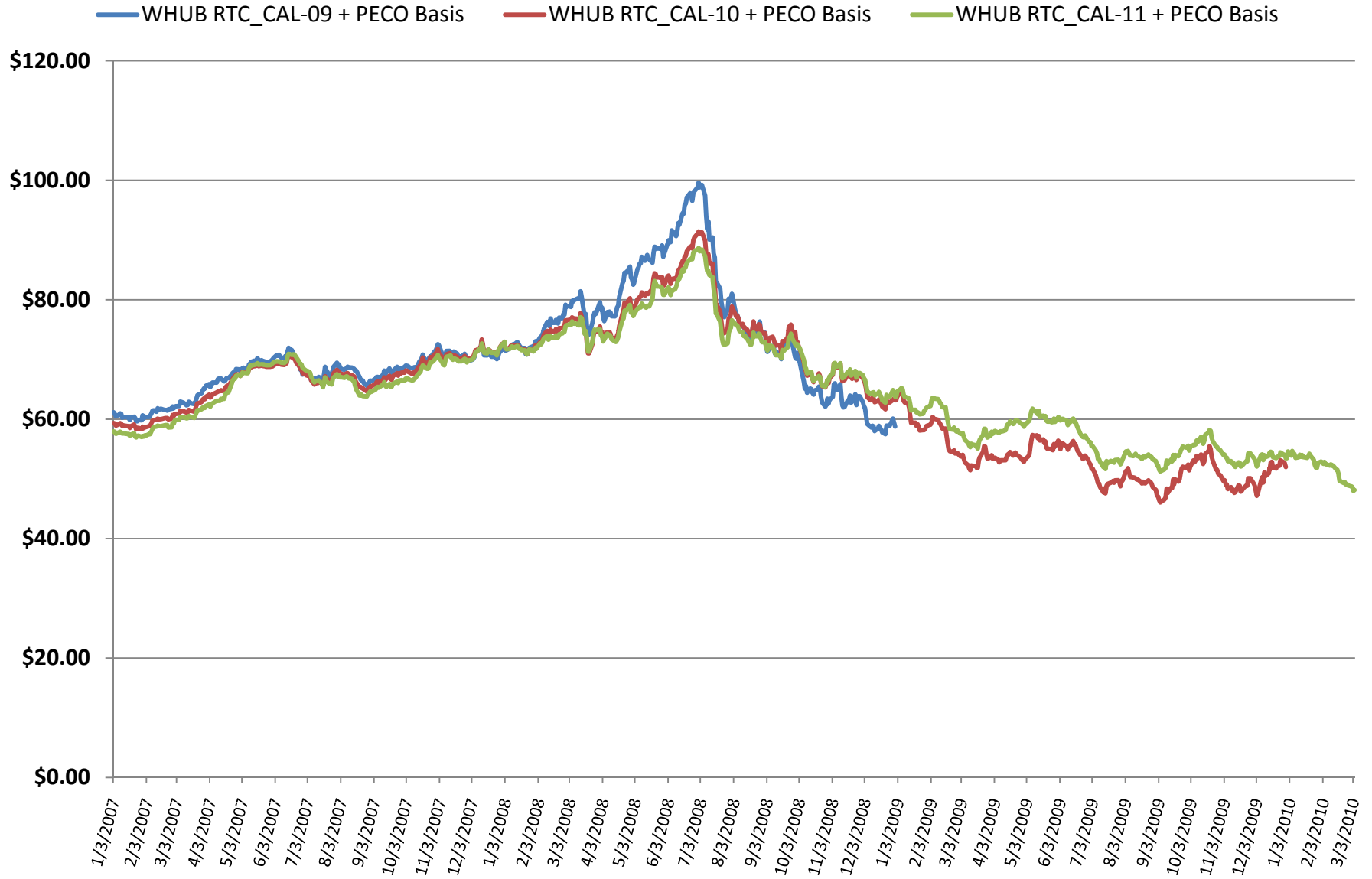
* Percentages are approximate

Historic Penelec Day-Ahead Index Prices

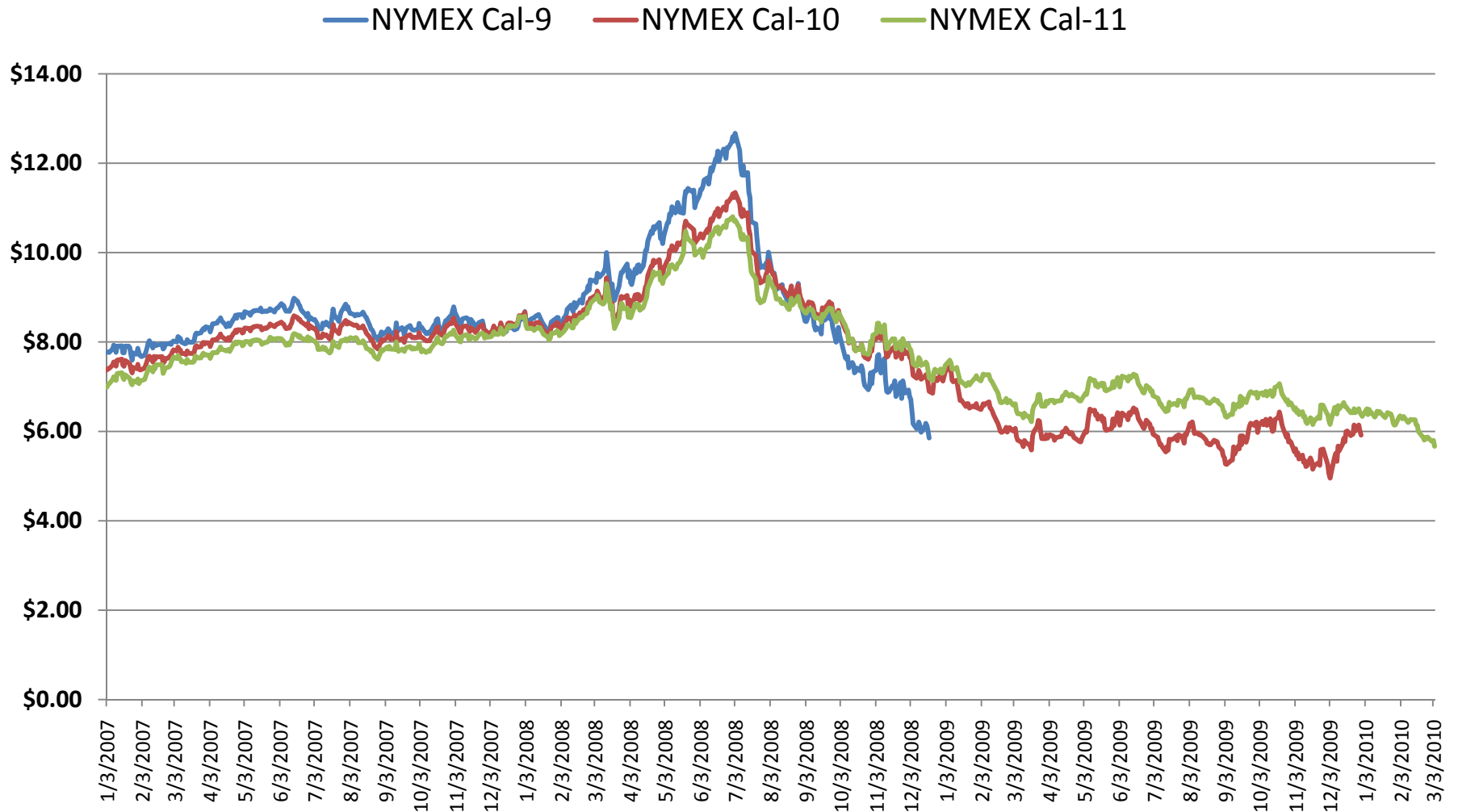


Month	Penelec DA Avg LMP
Jan-07	\$ 40.68
Feb-07	\$ 63.60
Mar-07	\$ 51.40
Apr-07	\$ 52.04
May-07	\$ 49.20
Jun-07	\$ 52.65
Jul-07	\$ 50.92
Aug-07	\$ 60.59
Sep-07	\$ 46.41
Oct-07	\$ 56.52
Nov-07	\$ 52.41
Dec-07	\$ 60.18
Jan-08	\$ 70.90
Feb-08	\$ 65.65
Mar-08	\$ 70.36
Apr-08	\$ 70.12
May-08	\$ 57.53
Jun-08	\$ 87.01
Jul-08	\$ 85.12
Aug-08	\$ 63.11
Sep-08	\$ 59.56
Oct-08	\$ 50.12
Nov-08	\$ 52.24
Dec-08	\$ 48.68
Jan-09	\$ 58.26
Feb-09	\$ 44.18
Mar-09	\$ 39.84
Apr-09	\$ 34.12
May-09	\$ 32.70
Jun-09	\$ 32.59
Jul-09	\$ 31.71
Aug-09	\$ 33.72
Sep-09	\$ 30.15
Oct-09	\$ 33.76
Nov-09	\$ 33.09
Dec-09	\$ 41.02
Jan-10	\$ 51.61
Feb-10	\$ 44.84

Historic and Future Pricing – Power



Historic and Future Pricing – Natural Gas



- Energy Structure
 - Fixed
 - Index + Adder
 - Real-Time
 - Day-Ahead
 - Fixed Blocks
 - Heat Rate

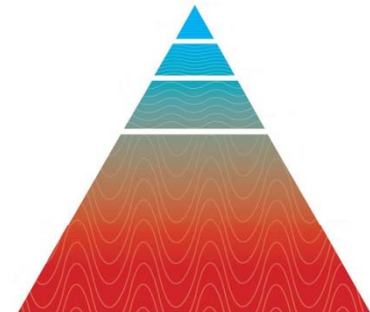
- Volumes: full swing v. bands

- Include or Pass-through Adders:
 - Capacity
 - Transmission
 - Ancillaries
 - Line Losses (Distribution & Transmission)

- Taxes (Gross Receipts)*

Any or all of the adders can be combined into or excluded from the energy pricing structure –
Know what you're buying!

* GDF SUEZ Energy Resources' price does not include PPL Distribution Charges, Sales Tax, or Pennsylvania Gross Receipts Tax



Supplying Full Requirements



- Instantaneous matching of supply and demand required
- Demand will not be known with 100% accuracy
- Subject to providing unknown quantities at unknown prices
- How to appropriately price the risks?

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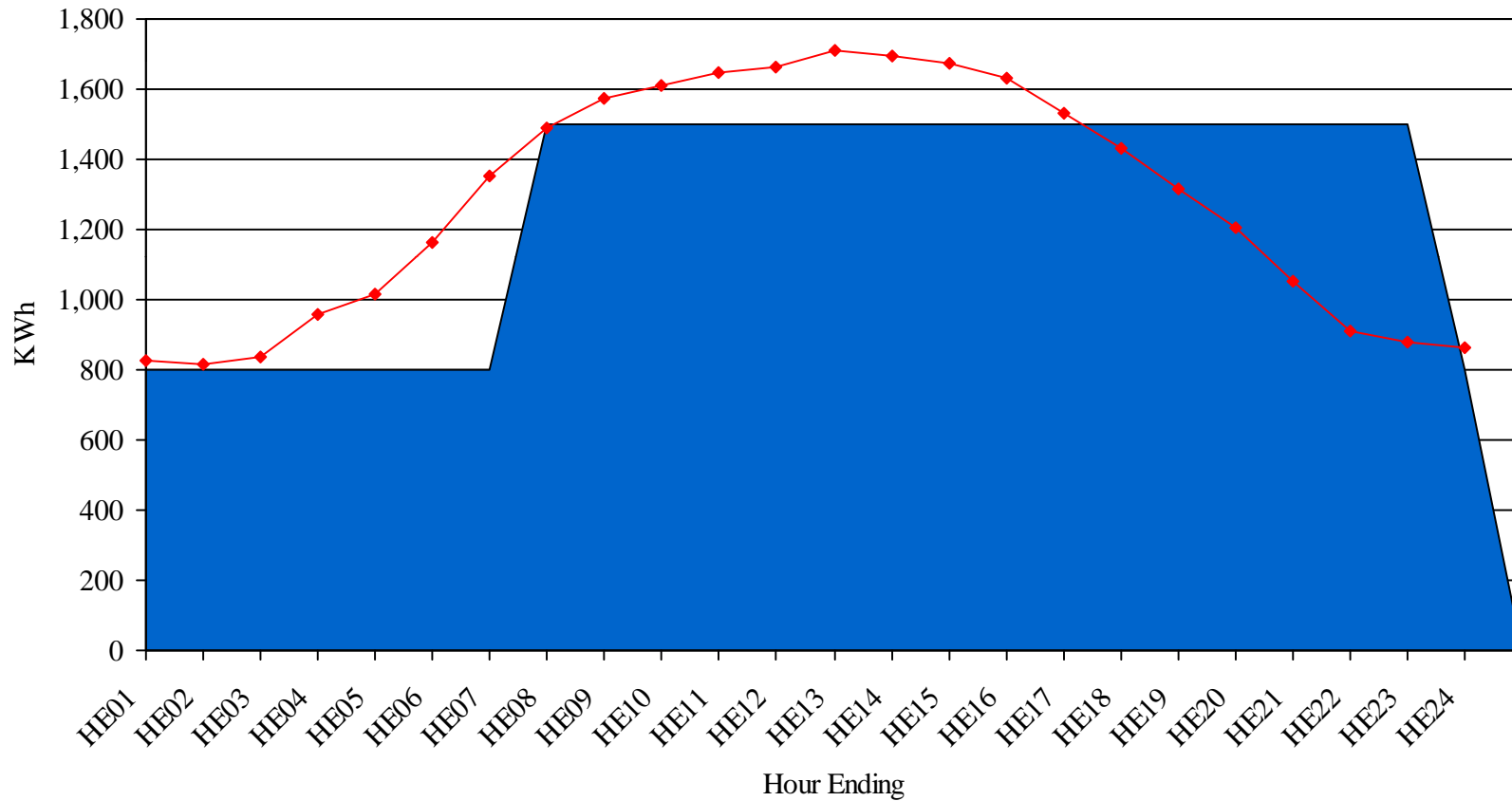
- Energy price risks
 - Shaping
 - Volume
 - Predictability
 - Congestion

- Capacity/transmission price risks
 - Load factor
 - Peak load contribution changes

- Ancillary services price risk

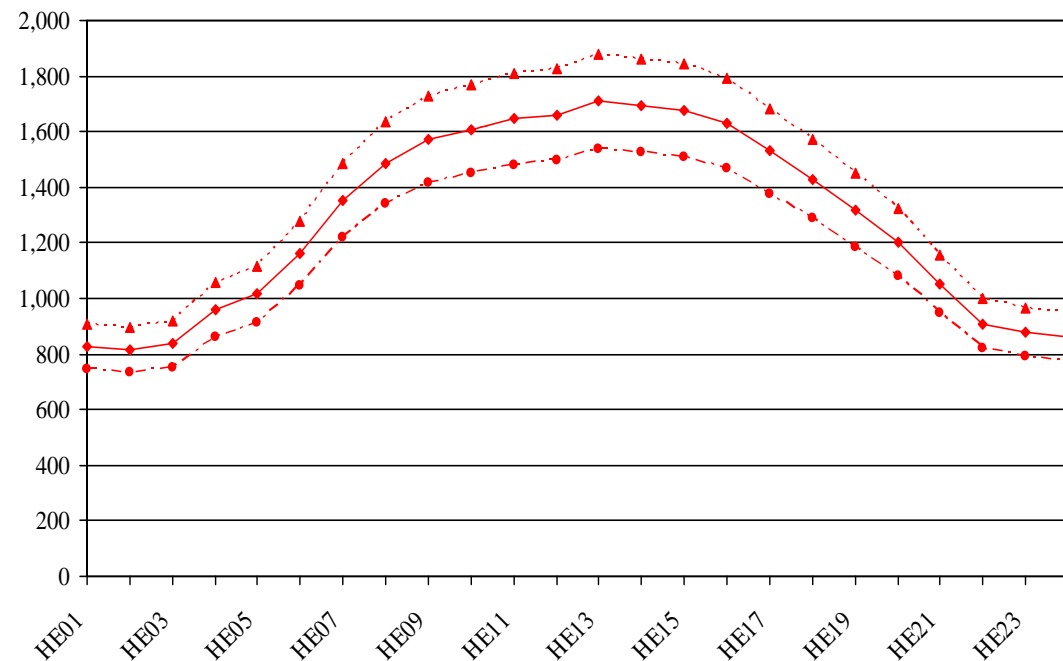
- Credit default risk

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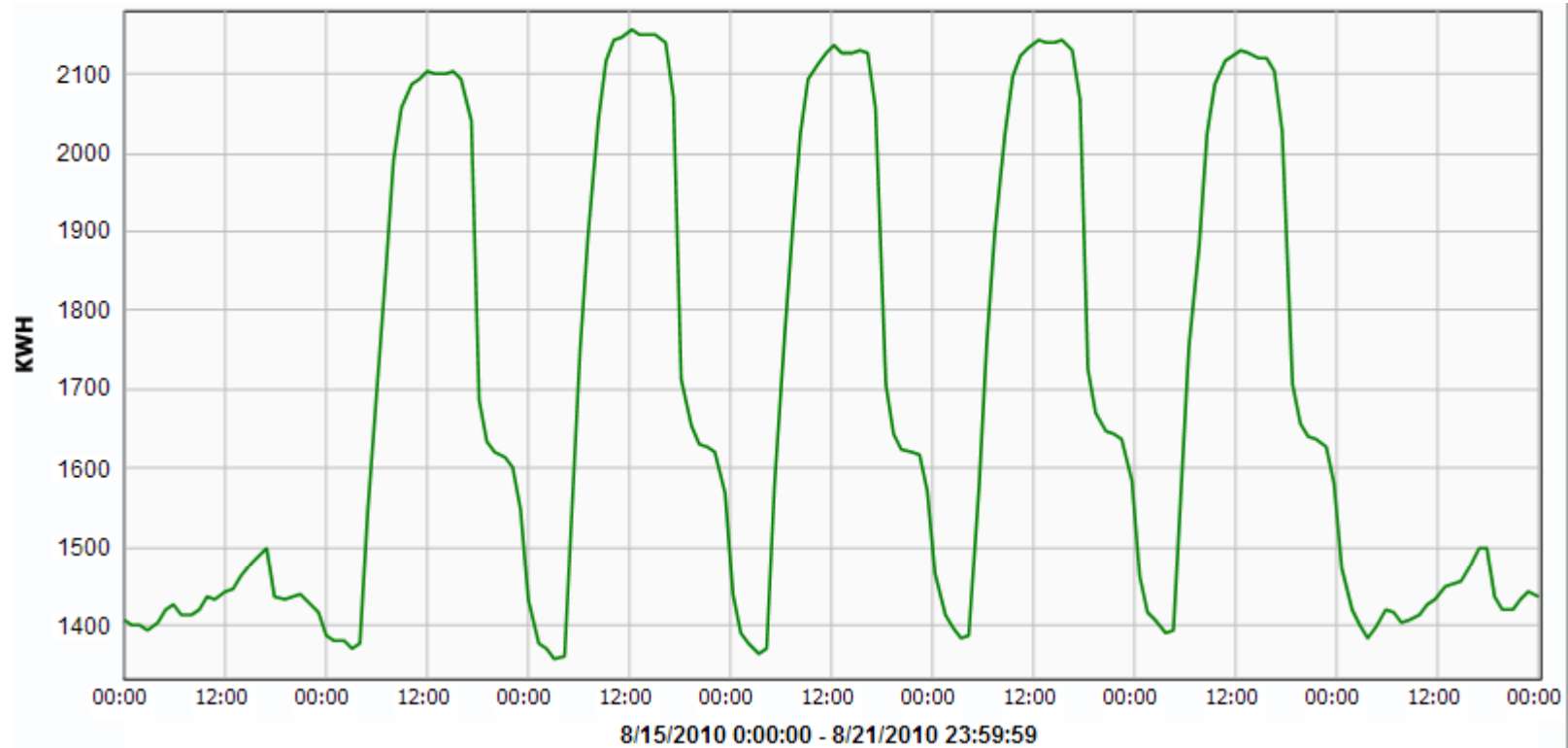
- Load forecasting (especially long-term forecasting) is not an exact science
- Supplying full requirements electricity at a fixed price involves volume risk
- In any hour, the customer may use more or less electricity than forecast—referred to as “swing” or “bandwidth”
- The higher the bandwidth, the more price protection, but at a high risk premium



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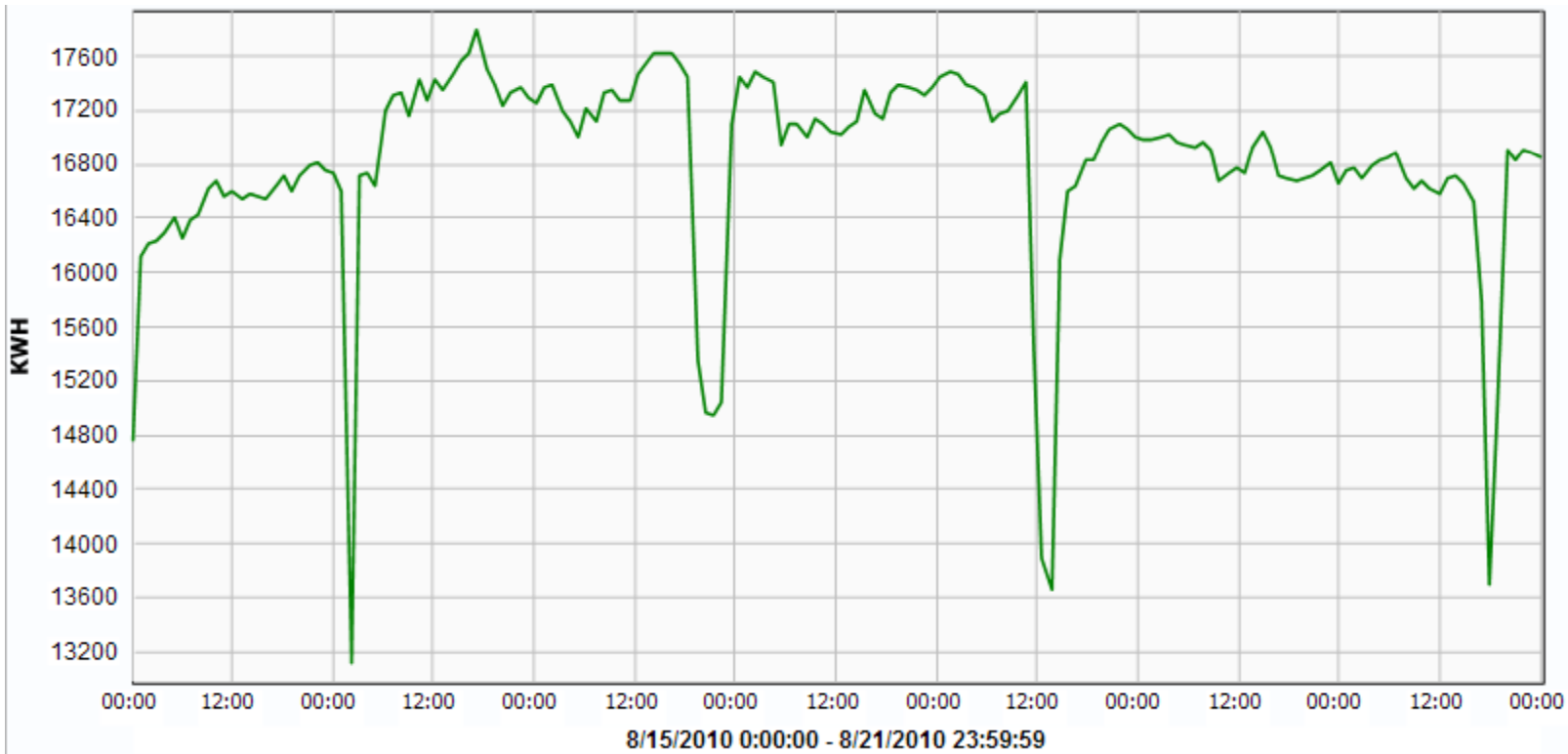
Good load v. bad load?

Commercial office building: Predictable, but predominantly on peak



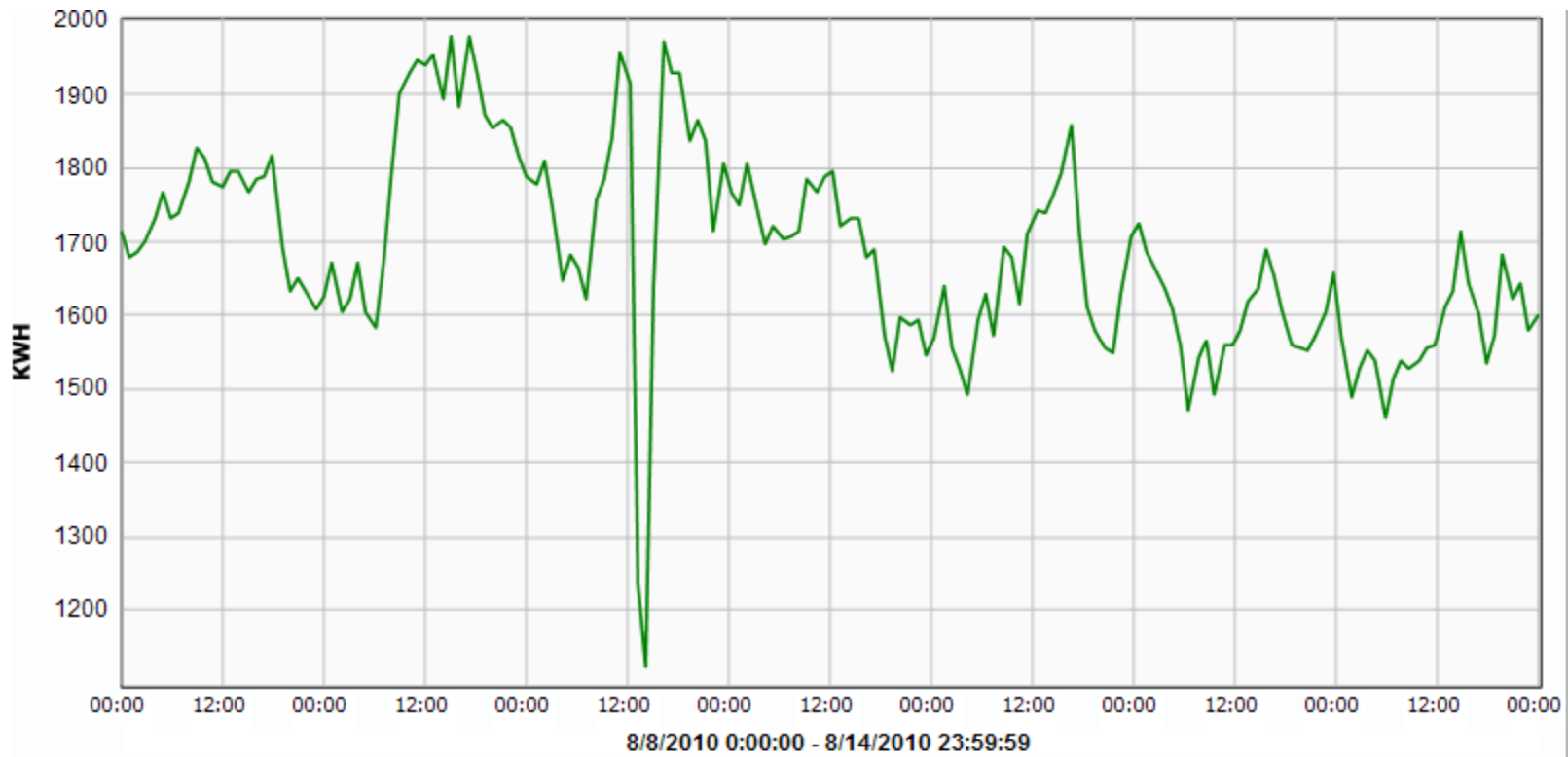
Good load v. bad load?

Industrial: Around-the-clock operation, but less predictable



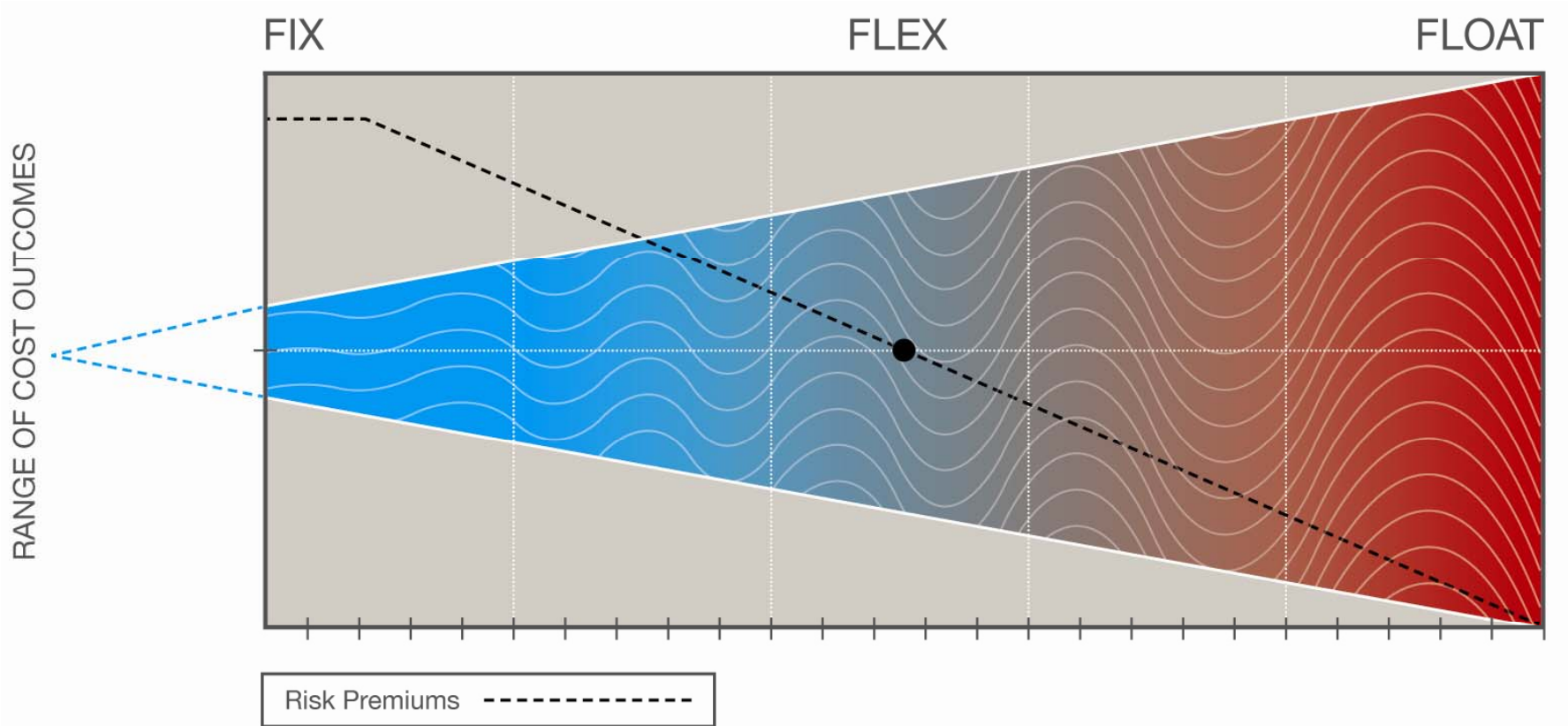
Good load v. bad load?

Industrial: Around-the-clock operation, but very unpredictable



Risk / Reward Spectrum

How do you know what product to select?

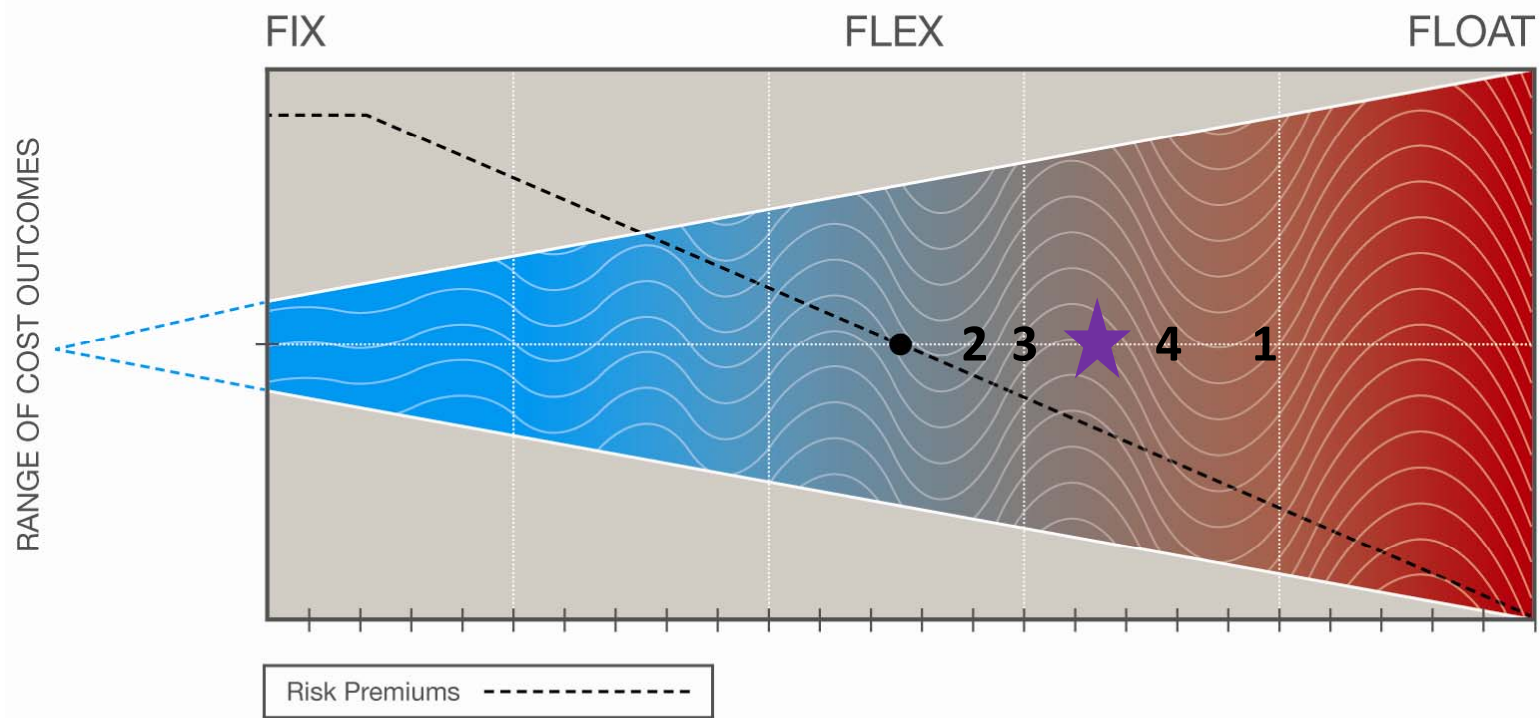


Fictional example: Paterno Industries – 18MW, 80% Load Factor – steel forge

Key Business Drivers -

- Historically been on fixed price through a capped utility price in PPL; experience with flexible / floating product structures for 4 sites in other deregulated markets
- Budget-certainty is fairly important, but less critical than achieving a lower overall cost for the long-term
 - Buyer is an experienced energy manager and knowledgeable about energy markets
 - Buyer provides management with 3-year outlook, and personal goals are tied to long-term performance
 - Buyer has greater appetite for risk, and is willing to accept market volatility.
- Buyer is also very knowledgeable about risk premiums associated with various energy components and wishes to avoid as many of the premiums as possible, while still securing a fixed portion of the overall energy cost.

Example: Risk / Reward Spectrum



1. Product history
2. Budget mechanics
3. Customers revenues tied to costs?
4. Buying influence objectives

A member of the GDF SUEZ group

- Global leader in independent power production
- Over \$122 billion in 2008 revenues
- Over 200,000 employees globally
- GDF SUEZ ranked 17th in *Forbes Global 2009**
- Highest credit rating of leading energy providers in the U.S. → A rating by S&P
- FORTUNE Magazine Ranked Top 10 Most Accountable Firms, Top 10 Most Admired Energy Companies Globally, 2008 & 2009**

Areas served by GDF SUEZ Energy Resources NA



- GDF SUEZ Energy Resources serves over 26,000 commercial, industrial, and institutional accounts
- 2nd largest Retail Commercial & Industrial energy provider*** in the United States
- Load Served
 - Total Load > 8,000 MW
 - PJM Load > 2,000 MW
- 7,750 MW of power generation in U.S. through affiliate (GDF SUEZ Energy Generation)
 - 2 power plants in Pennsylvania



* April 2008 *Forbes Global 2009 Report*

** *FORTUNE Magazine, 2008 & 2009*

*** *KEMA Consulting, August 2009*

- Energy component:
 - Historical Day-Ahead and Real-Time spot prices available at www.pjm.com
 - Forward pricing available at www.nymex.com
- Capacity: 2- to 3-year forward pricing available on PJM website
- Transmission: Per PJM tariffs
- Ancillary Services: Historical data on PJM website
- Other components: Not transparent