



State of the Market 2012

Alberta Wholesale Electricity Market

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Market Surveillance Administrator

- Investigation
- Enforcement
- Compliance with rules and reliability standards
- Market monitoring
- Guidelines



State of the Market Report

- **Purpose:** a periodic assessment of competition and efficiency in the wholesale electricity market
- **Method:** uses Structure – Conduct – Performance (SCP) as an organizing device. Industry advisory group.
- **Final Report:** Main report supporting by more detailed ‘building blocks’ (surveys / analysis). Released December 2012.



Overall Conclusions

o Wholesale market **effectively competitive**

A level of competition (and related outcomes) that

(i) achieves efficient investment with the lowest possible short-run inefficiencies,

(ii) does so over a reasonable timeframe, and

(iii) where open competition ensures neither collusion, abuse of market power, or anti-competitive practices.



Efficiency: Purposes of the Electric Utilities Act

a) to provide an **efficient Alberta electric industry structure** including independent, separate corporations to carry out the responsibilities of the Independent System Operator and the Balancing Pool, and to set out the powers and duties of those corporations;

(b) to provide for a competitive power pool so that an **efficient market for electricity based on fair and open competition** can develop, where all persons wishing to exchange electric energy through the power pool may do so on non-discriminatory terms and **may make financial arrangements to manage financial risk** associated with the pool price;

(c) to provide for rules so that an **efficient market** for electricity based on fair and open competition can develop in which **neither the market nor the structure of the Alberta electric industry is distorted by unfair advantages** of government-owned participants or any other participant;

(d) to continue a flexible framework so that **decisions of the electric industry about the need for and investment in generation of electricity are guided by competitive market forces;**

(e) to **enable customers to choose** from a range of services in the Alberta electric industry, including a flow-through of pool price and other options developed by a competitive market, and to receive satisfactory service;

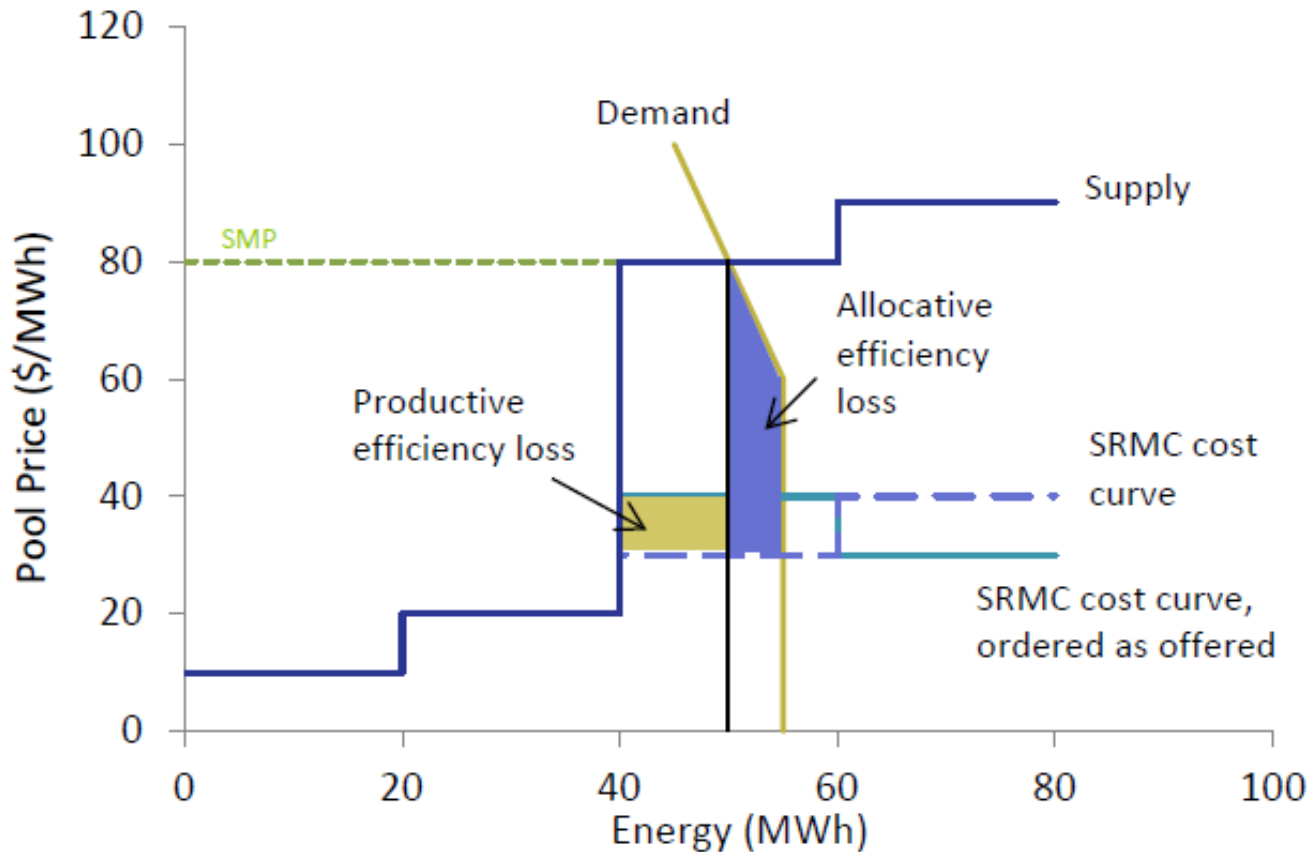
(f) to continue the sharing, among all customers of electricity in Alberta, of the benefits and costs associated with the Balancing Pool;

(g) to continue the framework established for power purchase arrangements;

(h) to provide for a framework so that the Alberta electric industry can, where necessary, be **effectively regulated in a manner that minimizes the cost of regulation** and provides incentives for efficiency.



Static Efficiency Losses are small

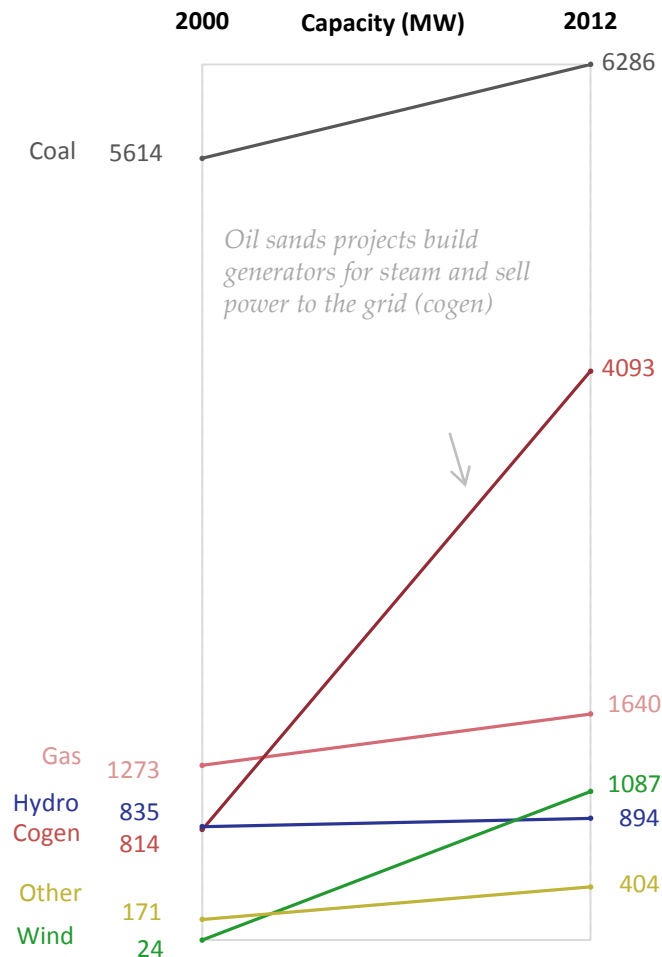


Total static efficiency losses <1% of the average wholesale market price over the period 2008-2011



Dynamic Efficiency Gains

- Not too much and not too little
- Not too soon and not too late
- The 'right' investment not the 'wrong' investment
- Retirements as well as new build
- How do you construct a counterfactual?
- Prices are no lower / higher than they need to be over the medium term to incent new investment





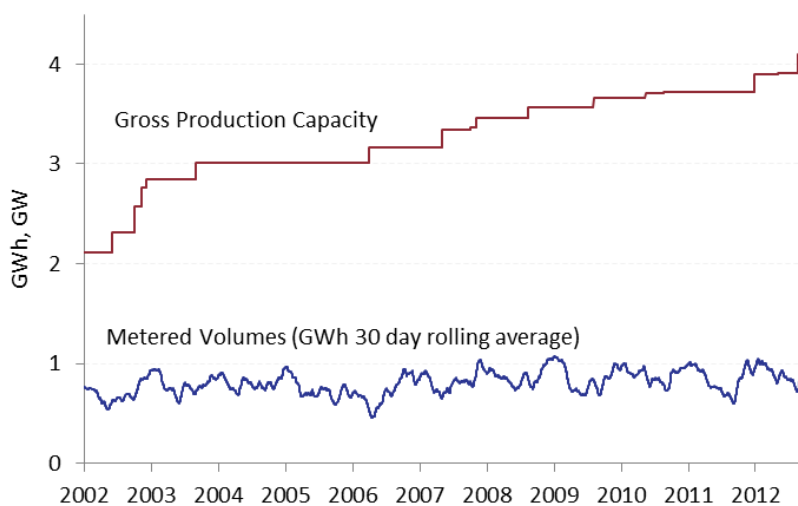
Structure

- **Tight oligopoly** – traditional measures of market concentration not that helpful
- **Vertical integration** – cogeneration and ‘gentailers’
- **Horizontal integration** – interrelationships between market participants from joint ventures and Power Purchase Arrangements
- **Barriers to entry** – different from high fixed costs



Structural observations

Vertical

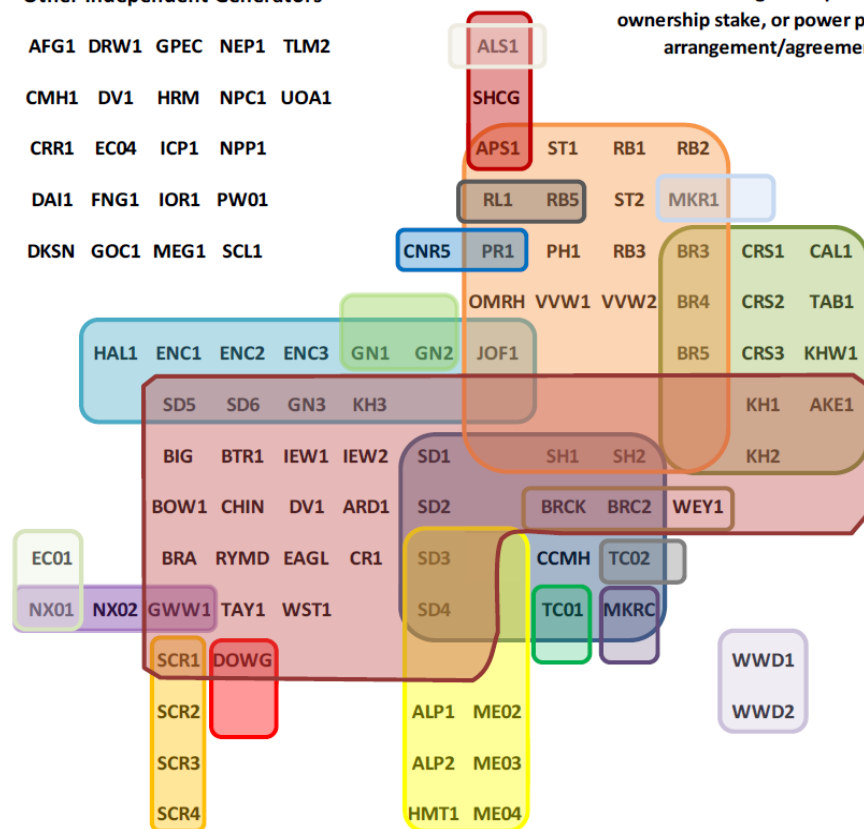


Horizontal

Other Independent Generators

- AFG1 DRW1 GPEC NEP1 TLM2
- CMH1 DV1 HRM NPC1 UOA1
- CRR1 EC04 ICP1 NPP1
- DAI1 FNG1 IOR1 PW01
- DKSN GOC1 MEG1 SCL1

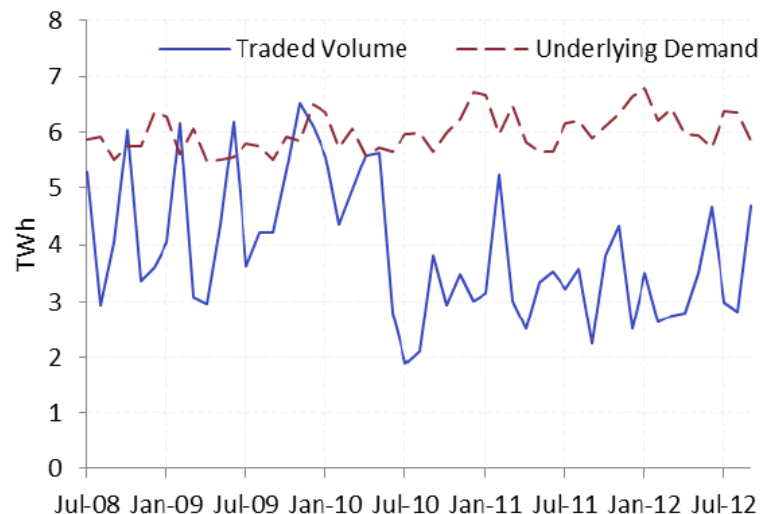
Each shaded regions represents an ownership stake, or power purchase arrangement/agreement.





Conduct

- Rational conduct observed in the spot market
 - generators with market power sometimes engage in economic withholding
 - generators without market power act as price takers
 - some industrial loads respond by reducing consumption at higher prices
 - significant imports flow to Alberta as a result of price differentials
- Participation in the forward market is weak
 - Decline in financial players
 - Influenced by buying of the Regulated Rate Option
 - Many industrials prefer bilateral contracts
 - Unresolved question: how much liquidity is enough?
 - Low liquidity as a barrier to entry?
- Investment
 - Balance sheet financing dominates
 - Short term generation adequacy appears good



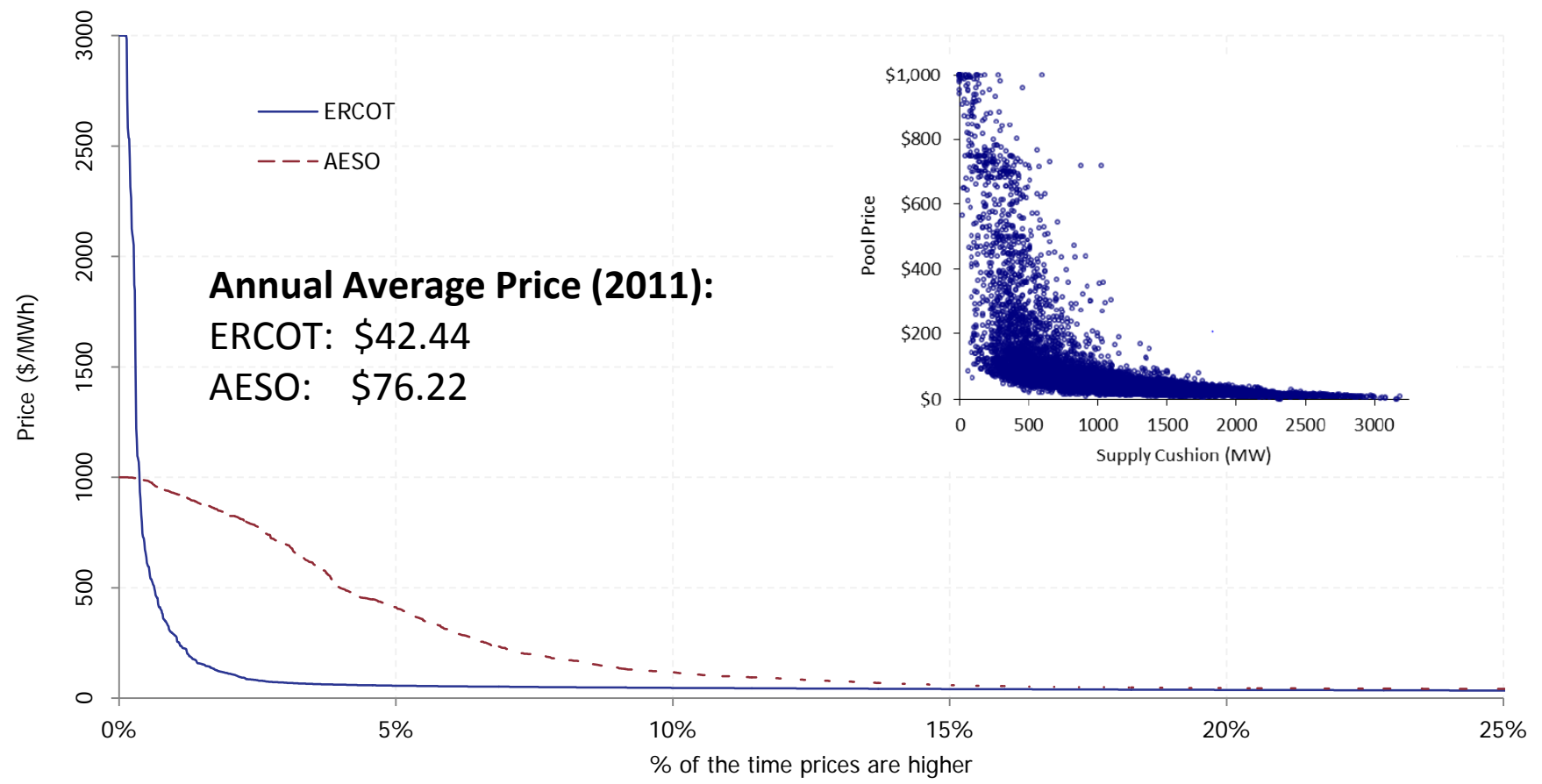


Performance

- Back to efficiency:
 - Market needs to incent investment – prices over the medium term should be no higher than long run marginal cost (LRMC)
 - $LRMC > SRMC$ because of fixed costs
 - Market design: how best to transfer to cover fixed costs without distorting the incentives for new investment
 - Energy only vs capacity markets
 - Energy only vs Energy only

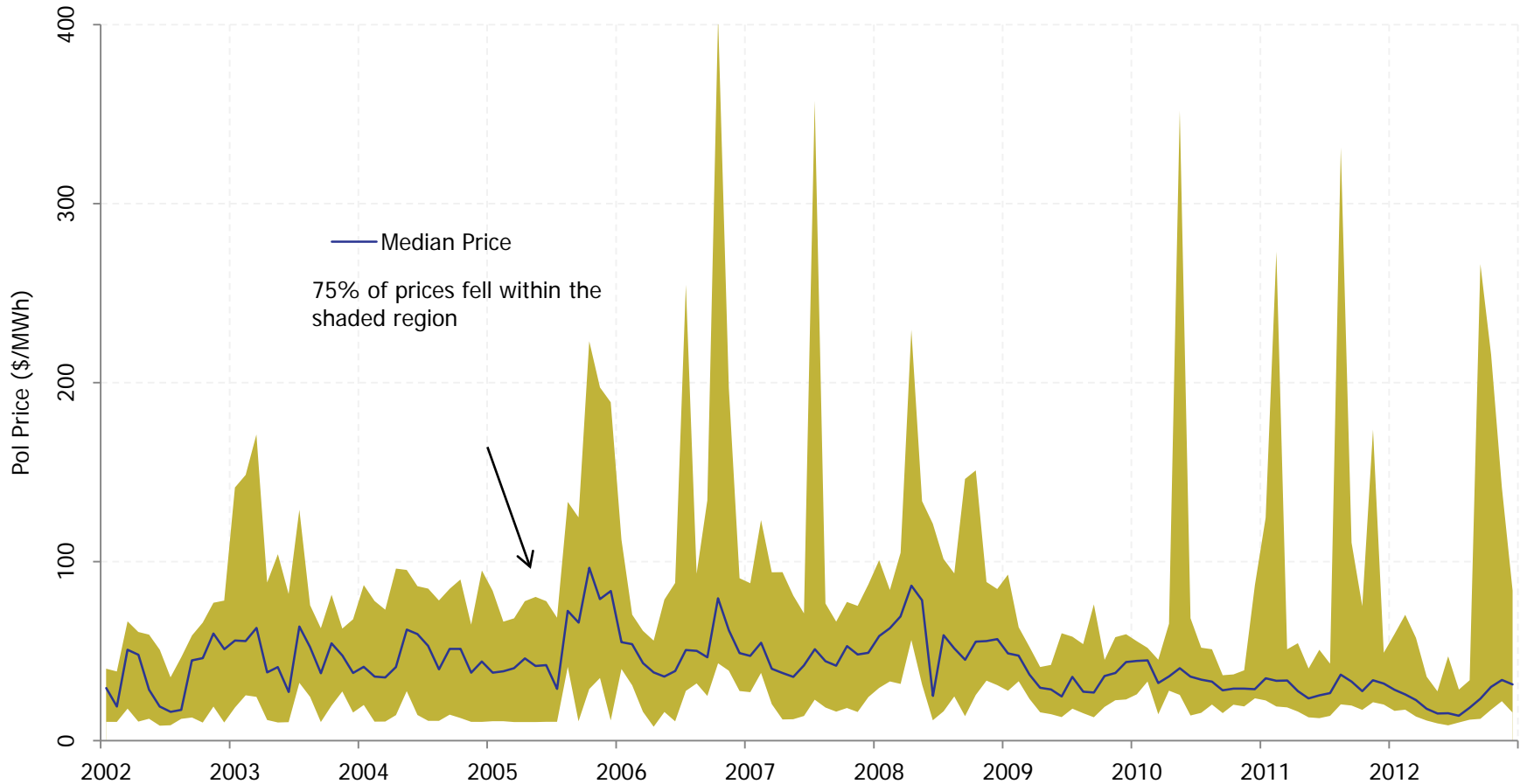


Energy only vs Energy Only (ERCOT vs AESO)



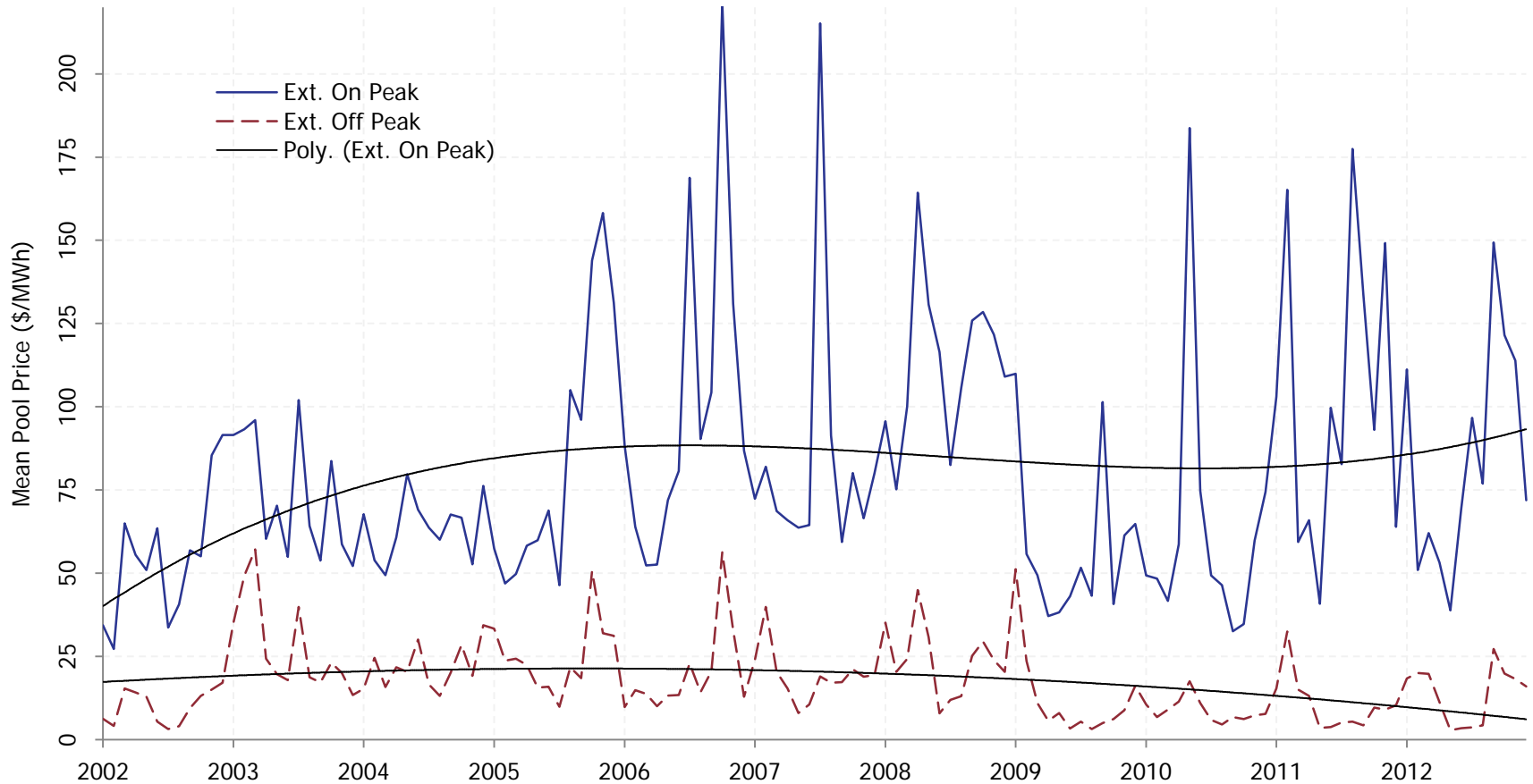


Prices and Volatility



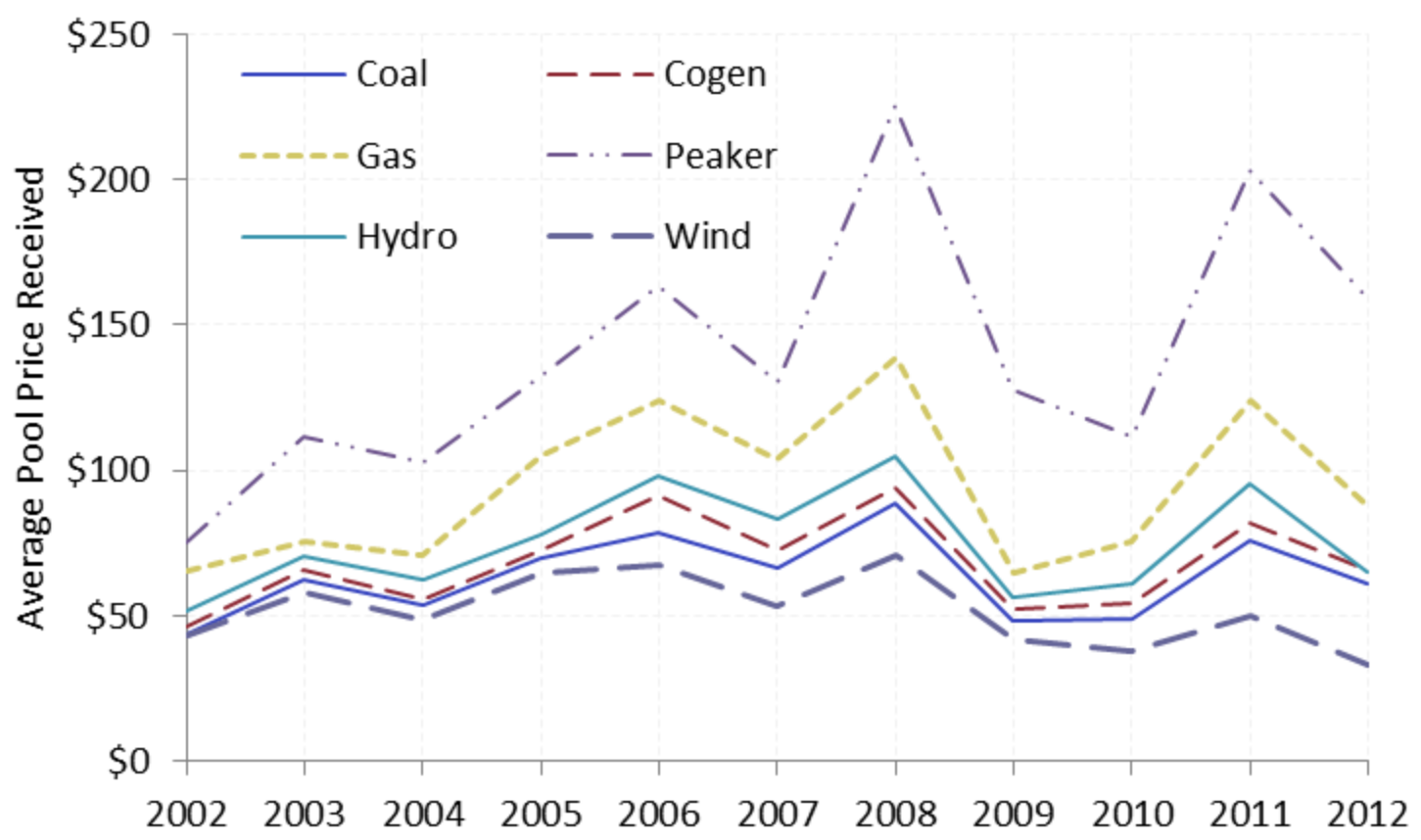


Prices and Volatility





Distribution of prices impacts technology choice





State of the Market: Alternate views

Not all stakeholders concur with MSA assessment:

- Alternate market designs would be better (e.g. imbalance market)
- Power Purchase Arrangements still in place; Balancing Pool still a market participant; Seams issues with imports / exports
- Exercise of market power is not desirable, too few new entrants

Or have concerns around the future:

- Will the market meet the requirement for significant generation investment?
- End of Power Purchase Arrangements
- Renewables and carbon pricing – What arrangements are compatible with a market?



State of the Market 2015

Next assessment planned for 2015, consistent approach but can compare to expectations for market in 2012:

- Are static efficiency losses increasing? Why?
- Do we see the expected response to price signals?
- Are prices still no higher than needed to be to incent new investment?
- Can we identify (and quantify) barriers to entry?
- Extension of State of Market to examine retail and ancillary services