



# Regulation and Investment in the WESM

Tom Parkinson

3<sup>rd</sup> Annual Power and Energy Philippines

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Prepared by:

  
**THE LANTAU GROUP**  
strategy & economic consulting

# Who we are

**Helping Our Clients Create Value**

**Market analysis and insights**

**Asset valuation / M&A**

**Disputes**

**Policy / regulation**

**Strategy**

**Price projections & advanced analytics**

## Offerings:

- **Deep, critical, and useful insights**
- **Ability to connect the dots across the energy sector**
- **Analysis-based recommendations**
- **Highly relevant international experience**
- **Accessible experts focussed on the region**



**TLG is a deeply-experienced economic consulting firm to the energy sector based in Asia**

# Our partners and principals have consulted for leaders throughout the region

**Oil & Gas companies**

- PACE GLOBAL (A Siemens Business)
- TDRi
- KPX KOREA POWER EXCHANGE
- semcorp
- SITHE GLOBAL
- PETROVIETNAM

**Large Users**

- CLP 中電
- Santos (We have the energy.)
- Marubeni CORPORATION
- KPOWER
- EGCO GROUP

**International Aid Agencies**

- WORLD BANK GROUP
- WORLD BANK GROUP
- EGCO GROUP

**Leading Utilities**

- ارامكو السعودية Saudi Aramco
- meridian
- TENAGA NASIONAL BERHAD (2002-W)
- PremierOil
- EWP
- SALAMANDER ENERGY
- ENERGY MARKET AUTHORITY
- ROTHSCHILD
- kdb (Korea Development Bank)

**Financial Institutions**

- Morgan Stanley
- Shell
- BG GROUP
- COVANTA ENERGY (for a cleaner world)
- Standard Chartered
- ING
- UBS

**Market and System Operators**

- WARTSILÄ
- PSALM
- KHAZANAH NASIONAL
- imo Independent Market Operator
- INTERGEN
- ERC (Energy Regulatory Commission - Philippines)
- Economic Regulation Authority
- MΣ
- MEDCOENERGI

**Regulatory Agencies**

- POWER GAS (A member of Singapore Power)
- ERC (Energy Regulatory Commission - Philippines)
- Economic Regulation Authority
- MEDCOENERGI

**Government Ministries**

- Energy Regulatory Commission (Thailand)
- MACQUARIE

**Independent Power Producers**

- AEI
- PETRONAS
- KOGAS (Korea Gas Corporation)
- HALLIBURTON
- JAPAN BANK FOR INTERNATIONAL COOPERATION (JBIC)
- ConocoPhillips
- Statoil
- HESS

**Other Partners**

- Brattle GROUP
- THE LANTAU GROUP (strategy & economic consulting)

# Overview

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## 1 **WESM competitive market structure**

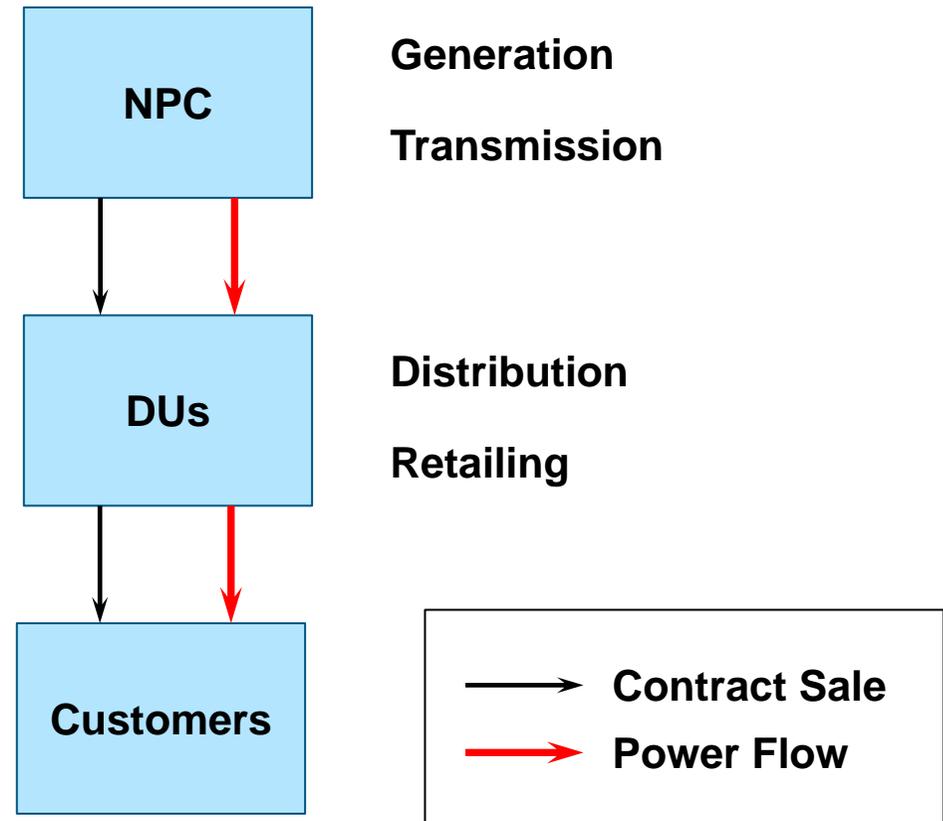
2 Regulation of the captive retail market

3 WESM spot market regulation

4 Conclusions

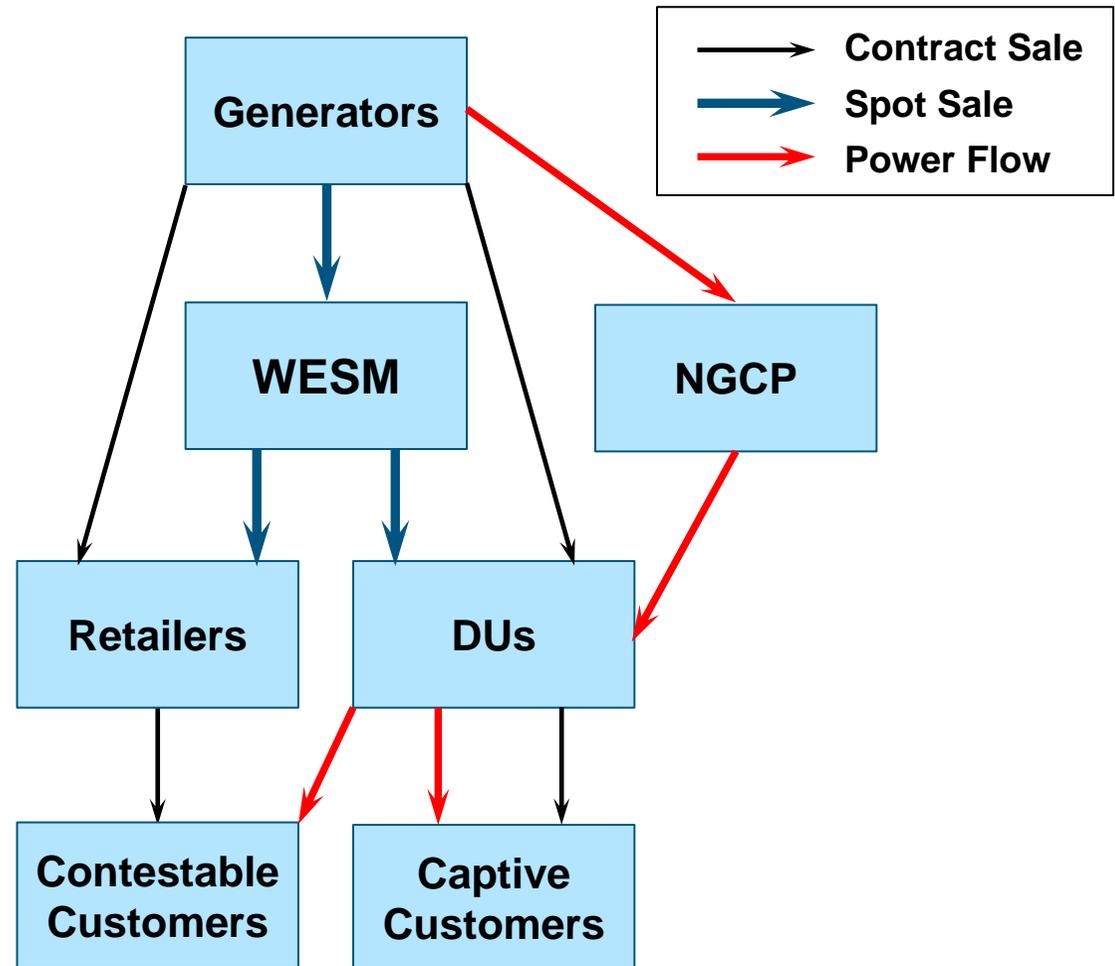
## Before EPIRA, the electricity market structure was relatively simple

- NPC controlled essentially all generation – either directly or via PPAs – and owned and operated the transmission network
- NPC sold power to distribution utilities (DUs) under full requirements contracts
- DUs provided distribution and retail service to end-use customers via regulated tariffs
- The flow of power paralleled the contractual relationships
- There was relatively little need for regulatory oversight



# EPIRA broke up NPC, unbundled the key functions, and created the WESM electricity spot market

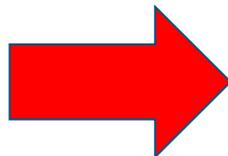
- Power flows from generators to NGCP (transmission), then to DUs (distribution), and then to customers
- Generators can contract directly with retailers and DUs
- All power is sold into the WESM and purchased by retailers and DUs – although settlement is done net of contracted amounts
- The flow of power does not follow either spot or contract sales paths
- Competition in generation and retailing acts to constrain prices and the quality of service
- The more complex structure vastly increases the need for regulatory oversight



# The underlying rationale for creating a competitive market structure is to harness competition as a means to control prices and quality of service

## Old World – Cost-Plus

- **“Reasonable” is based on the prudent provision of service, including a fair return on capital**
- Regulator focuses on ensuring that generation resources purchased by DUs are needed and are “least cost”
- Regulator constrains contract prices to levels that limit generators to earning a “fair” rate of return



## New World – Market-Based

- **Market competition ensures the prudent provision of service and a fair return on capital – so market prices define “reasonable”**
- Regulator ensures that the underlying market structure is “workably competitive” – for spot, contract, and retail markets
- Regulator sets spot market rules to ensure that market works efficiently and sends appropriate price signals

**Moving from cost-plus regulation to reliance on market prices requires faith in the ability of markets to be “workably competitive”**

Unfortunately, the ERC does not consider the WESM to be fully competitive...

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The Commission takes this opportunity to put forward its observation that there has always been a tightness of supply in the market given that it cannot be said that the market has matured to be considered a fully competitive one. Reasons for not attaining a fully competitive market may be rooted in the market itself which may be characterized as oligopolistic.

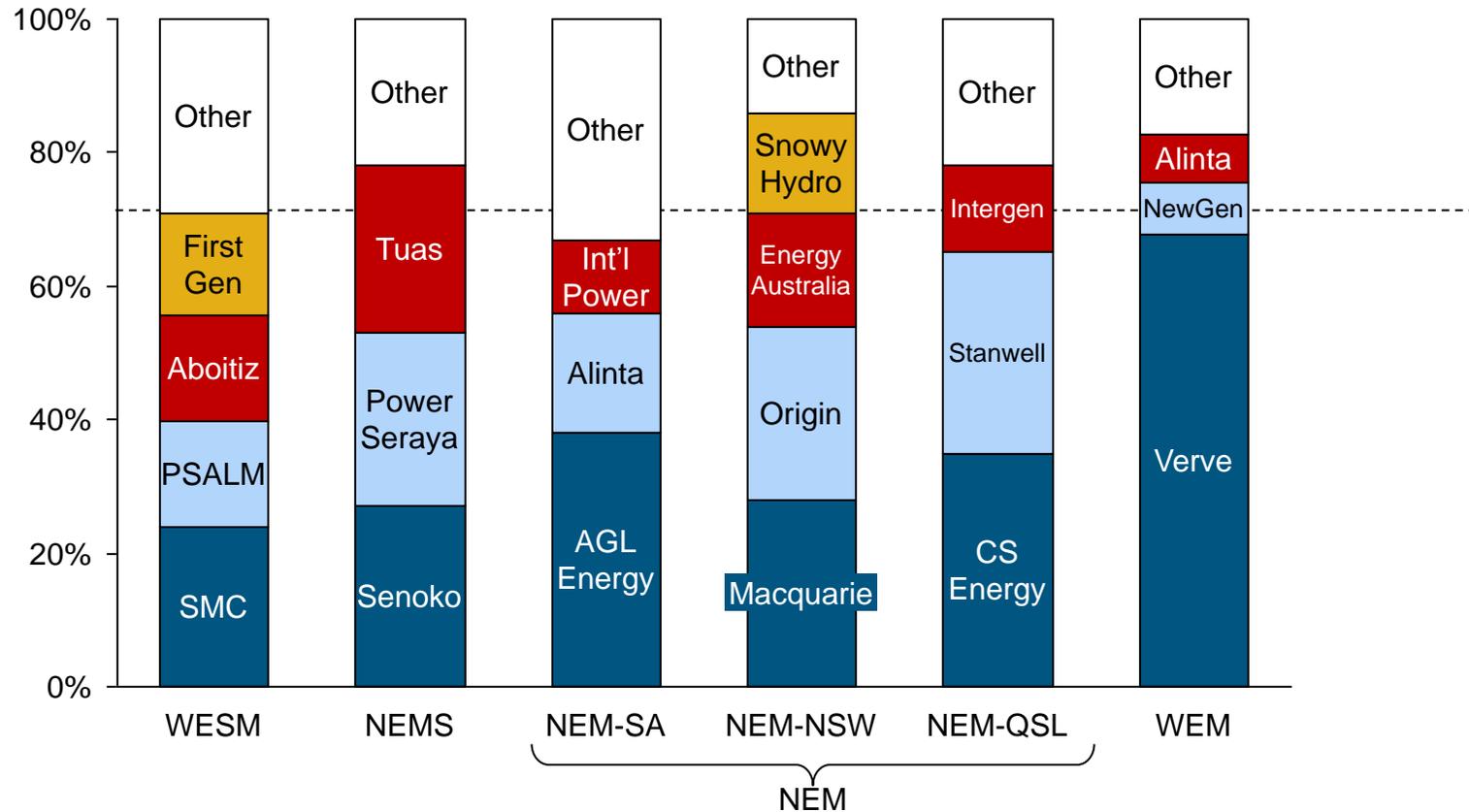
ERC Order, case no. 2014-021MC (dated 3 March 2014)

With respect to the proposed “market based” pricing, the Commission believes that the current Philippine electricity market is not yet ripe for such since it is one borne out of a true and robust competition which is not yet present in the Philippine setting at this point in time. First, there should be sufficient capacity for competition. Recent available data reveal that the system load and demand are always higher than the available capacity, thus, making the present market a seller’s/supplier’s market. In a seller’s market, the seller is able to obtain better conditions for the sale or higher prices because of the scarcity of underlying commodities or goods.

ERC Order, case no. 2012-118RC (dated 28 January 2013)

Despite the fact that the concentration of capacity in the largest players is actually less than other markets deemed to be competitive

### Generation company market share

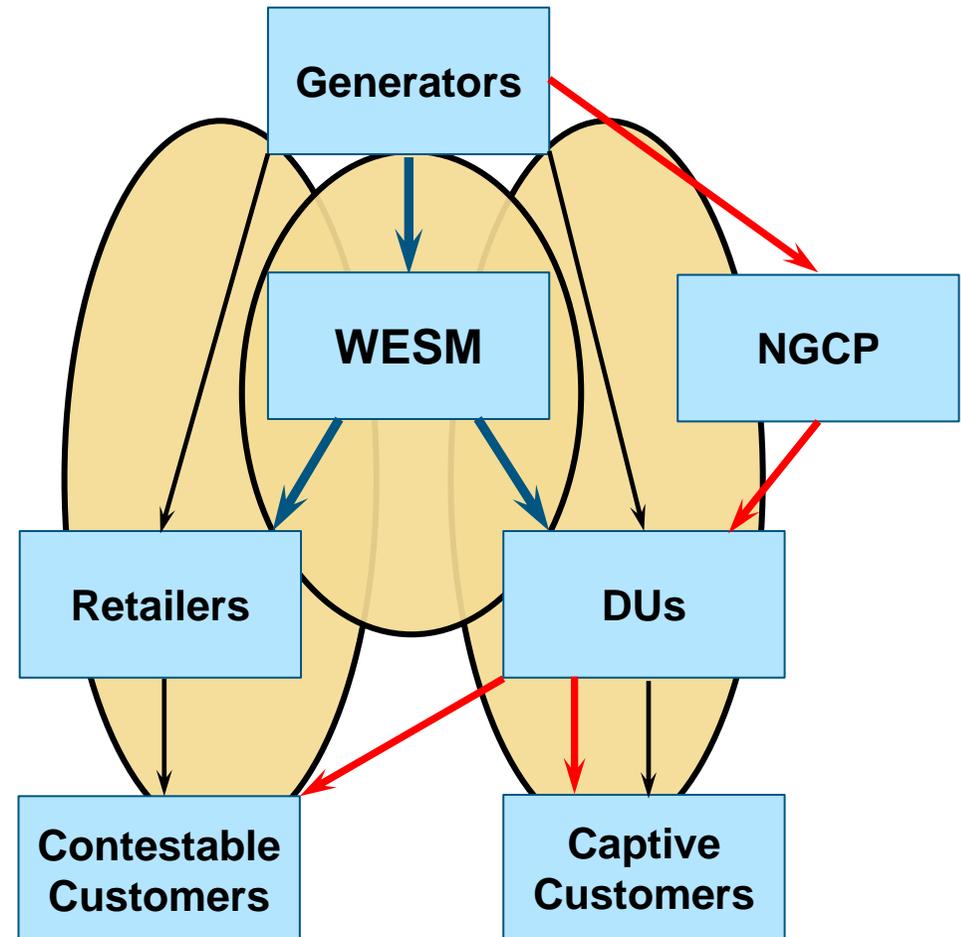


Source: PEMC (2012 Annual Report); EMC (2012 Annual Report); AER (State of the Energy Market 2013); ERA (2013/14 capacity credits)

## In the WESM, there are three primary regulatory interfaces

- **Captive retail market** – generators/DUs/captive customers
- **WESM spot market**
- **Contestable retail market** – generators/retailers/contestable customers

I will focus today on the first two of these regulatory interfaces

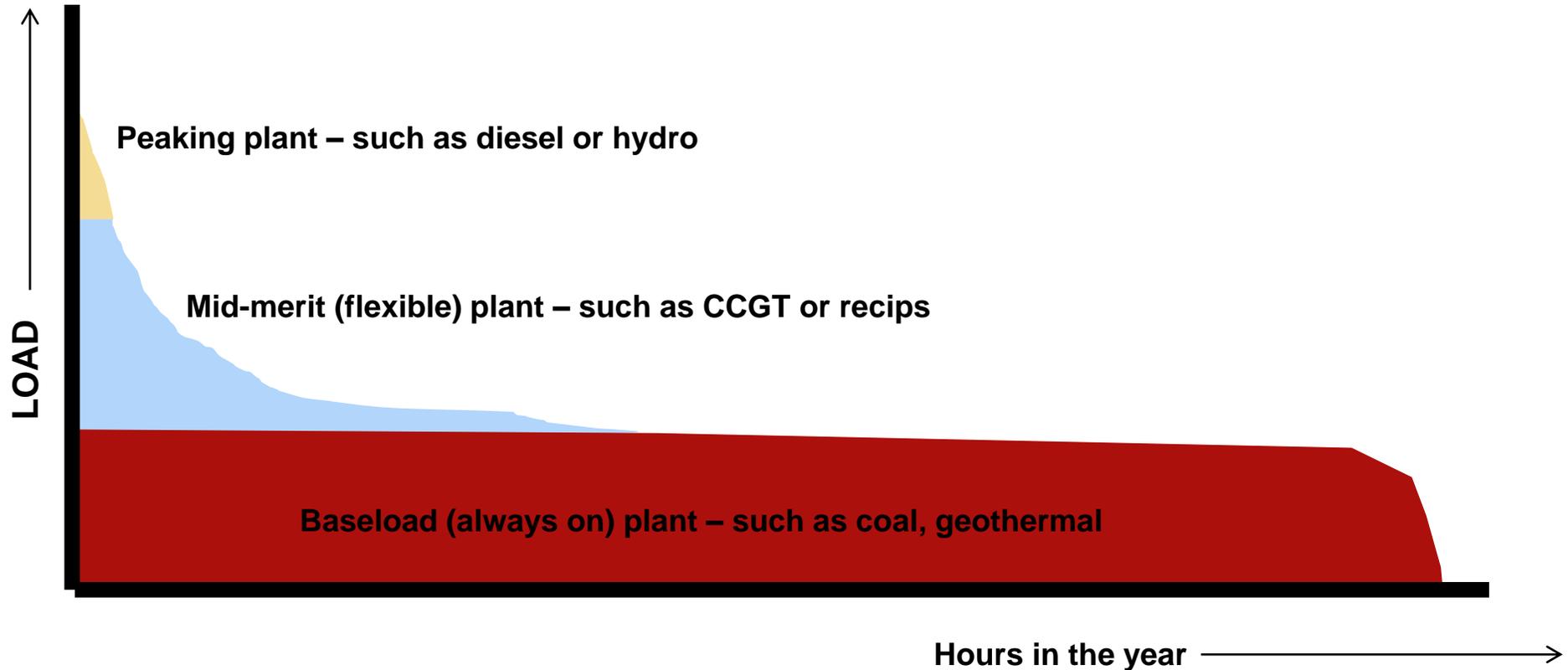


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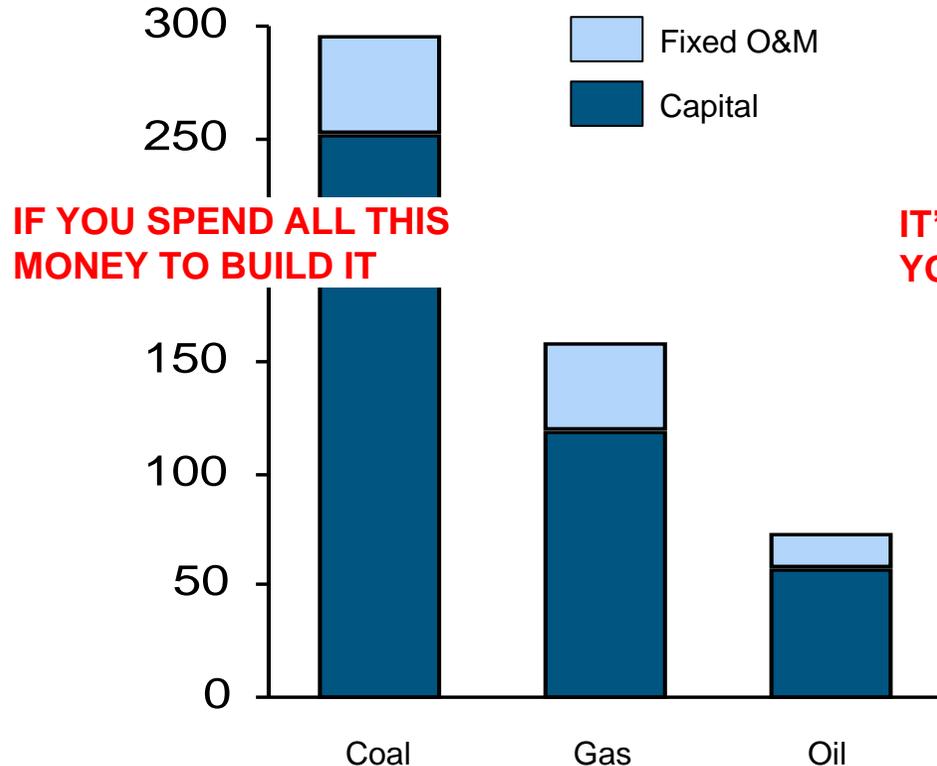
DUs, as retail aggregators, must purchase a mix of peak, baseload and mid-merit resources to meet their needs



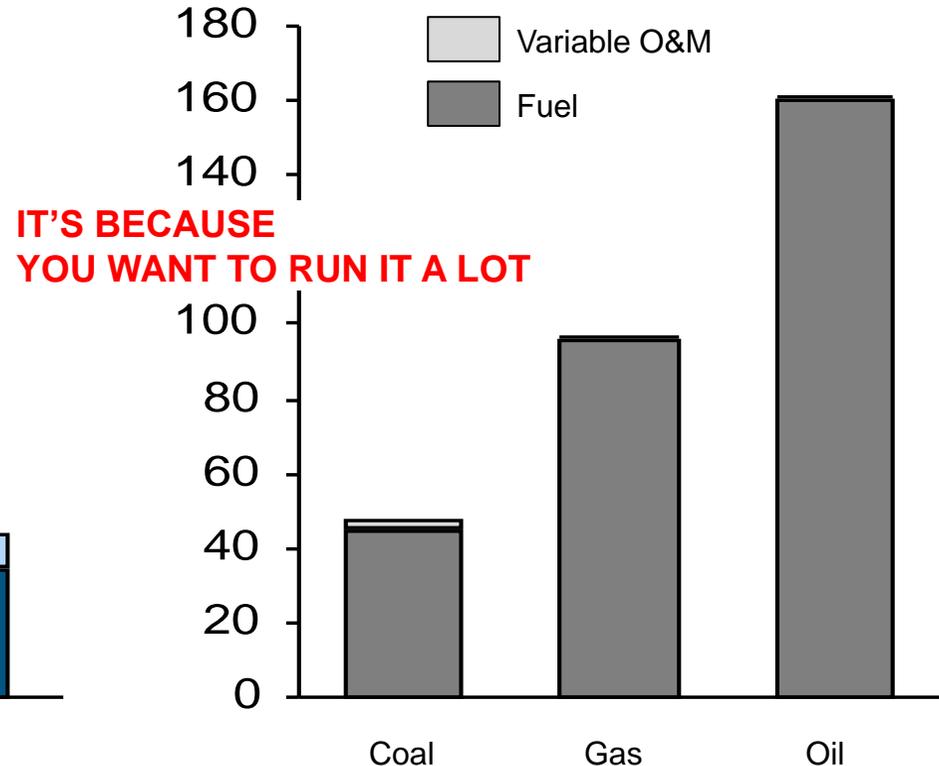
**Retailers contracting for resources ultimately determine what new generation gets built  
– so their incentives are important**

In any market, to meet any load shape of electricity demand, there is a mix of plants that is cheapest

Fixed costs - \$/kW per year



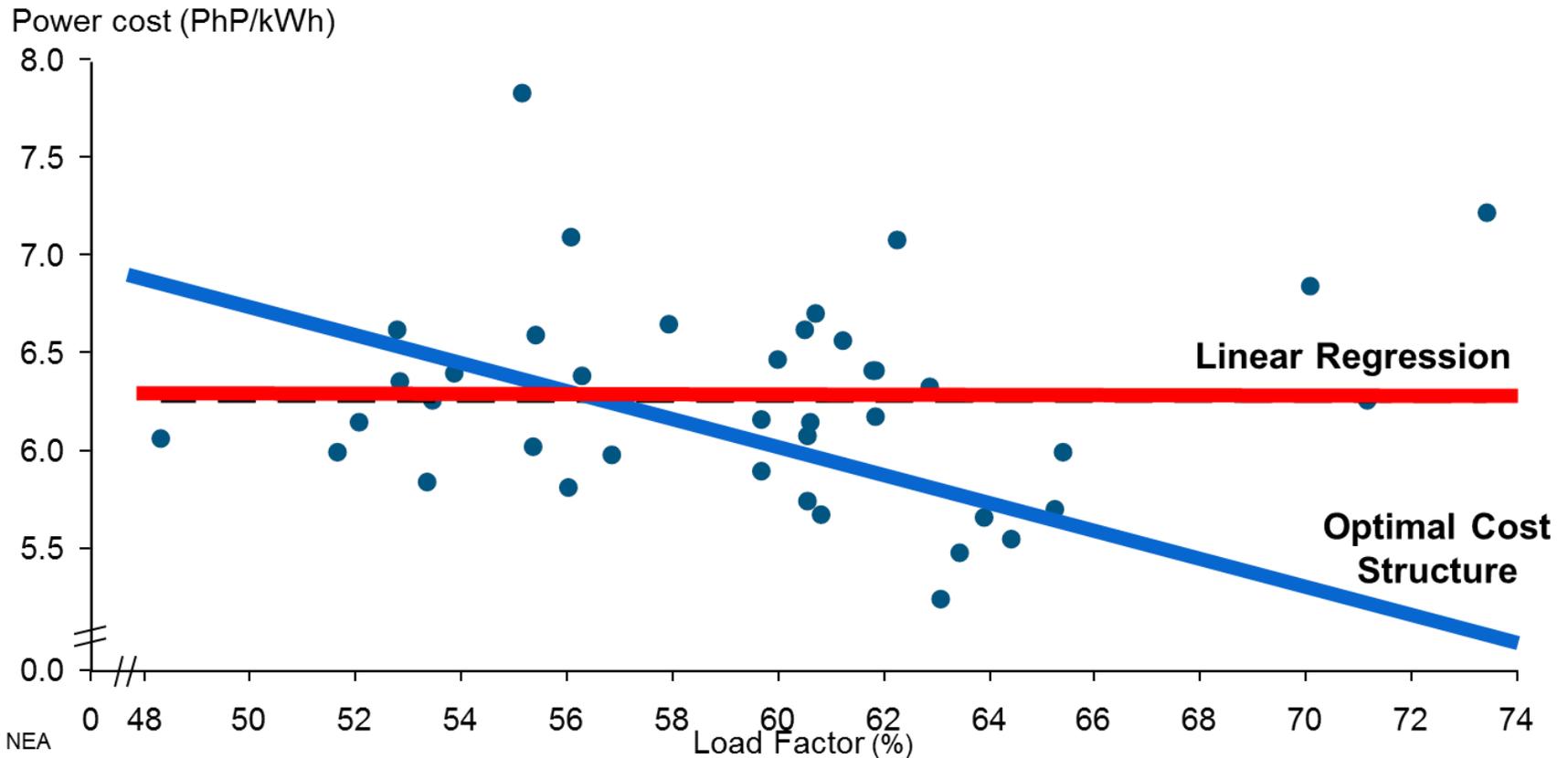
Variable costs - \$/MWh



No single technology is inherently “better” than the other – it is the way they are mixed that makes the optimal solution

# Retailers with higher load factors should be able to form lower-cost portfolios – but this does not seem to happen in the Philippines

Average power cost vs. load factor for Luzon grid ECs (2012)



Source: NEA

**Regulation of the DUs does not provide incentives for least-cost contracting**

# Lack of regulatory incentives for retailers to contract efficiently distorts incentives for new generation entry

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- The ERC regulates the DUs' generation purchases
- The form of this regulation focuses solely on individual contracts
  - It does no analysis of whether the contract is actually NEEDED, only the cost of the contract
  - It does not take account overall purchases by the retailer
  - It does not take into account alternatives available
  - And nobody regulates what is not contracted (that is, purchases from the spot market)
- Regulation attempts to ensure that each contract is a “least cost” option – but the analysis is biased in favour of baseload resources
- This regulatory review is a time-consuming process – in some case, the ERC has issued retroactive rate adjustments years into a contract
- Once approved, all the costs of these contracts are passed directly through to the consumer, even if they later change, even if the contract is not needed

**As a result, retailers focus on what is easy to get approved, not on what is actually needed – they have no incentives to contract efficiently**

In addition, retailers do not bear the merchant market risks that would encourage them to contract (and to contract efficiently)

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- Since WESM purchases are not subject to regulation, all WESM costs are passed through to consumers
- Consequently, DUs as retailers bear no market risk – customers bear the risk!
- In other markets, customers have fixed tariffs, and if spot prices are high, it is RETAILERS, not the customers, who bear this risk
- In Philippines this is backwards.
- Since customers bear the risk, the regulator and the DOE worry about high WESM prices

**This regulatory focus on WESM spot prices creates other investment issues**

# Suggestions for improving the economic regulation of purchases for captive retail consumers

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- Trust competition
  - The perfect is the serious enemy of the good
  - Move away from regulatory review of every contract
  - Make it easier for DUs to secure a range of different contracts to cover entire demand curve
  - Regulate portfolio costs against market benchmarks
- Structure contracts to support economic fundamentals and facilitate portfolio planning
  - Financial contracts not physical delivery
  - Prices vary by time of use and level of responsiveness required
- Expose stakeholders to WESM risk so they support prudent contracting

**Economic regulation is about achieving reasonable value, not adhering to precedent**

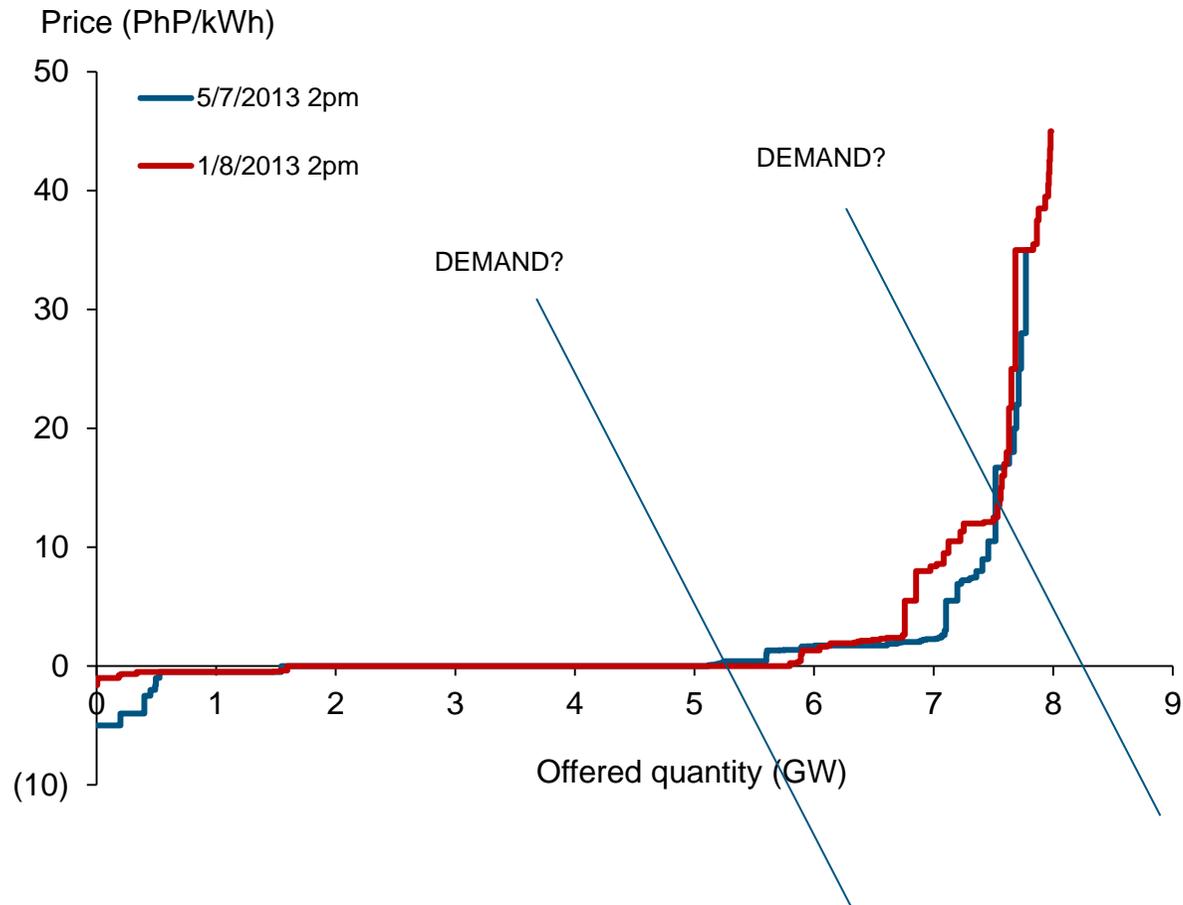
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As the system gets tighter, offers increase, which is the logical and normal situation → how else to signal the need for new capacity?

### Luzon generator offers for two illustrative peak hours



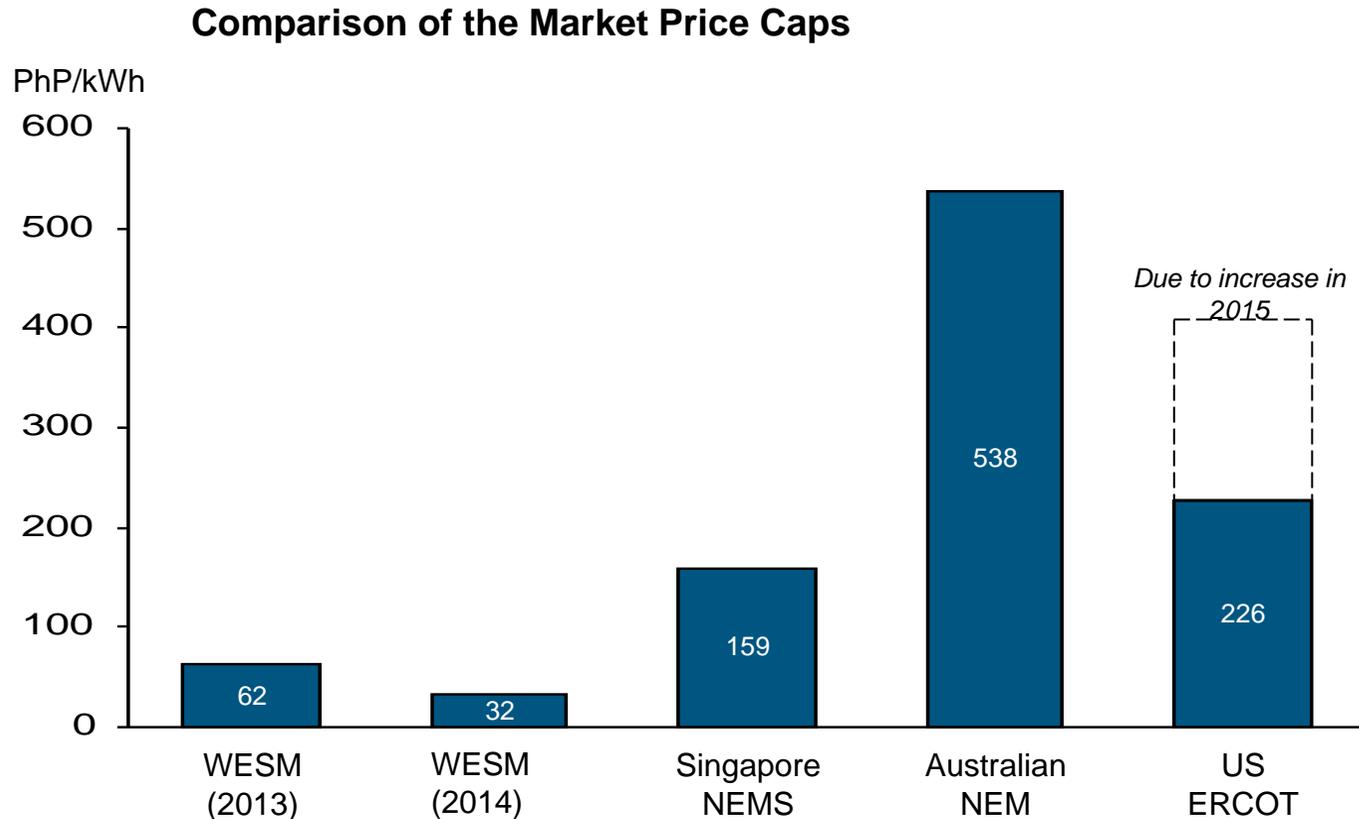
## WESM spot prices play a key role in inducing generation investment

- Load growth causes reserve margins to fall
- As reserve margins fall, spot prices – and expectations of future spot prices – increase
- Contract prices are set with reference to spot price expectations
- Sufficiently high price expectations induce new investment
- New investment raises reserve margins again
- As reserve margins rise, spot prices fall

**Predictably high spot prices are needed to ensure timely entry**



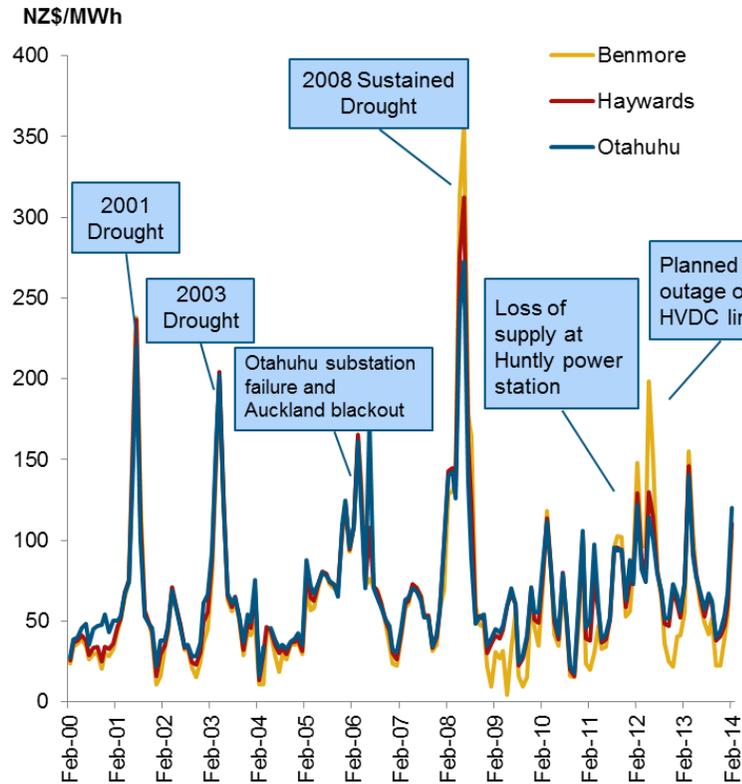
The market cap price in the Philippines is much lower than other markets – and was recently lowered further



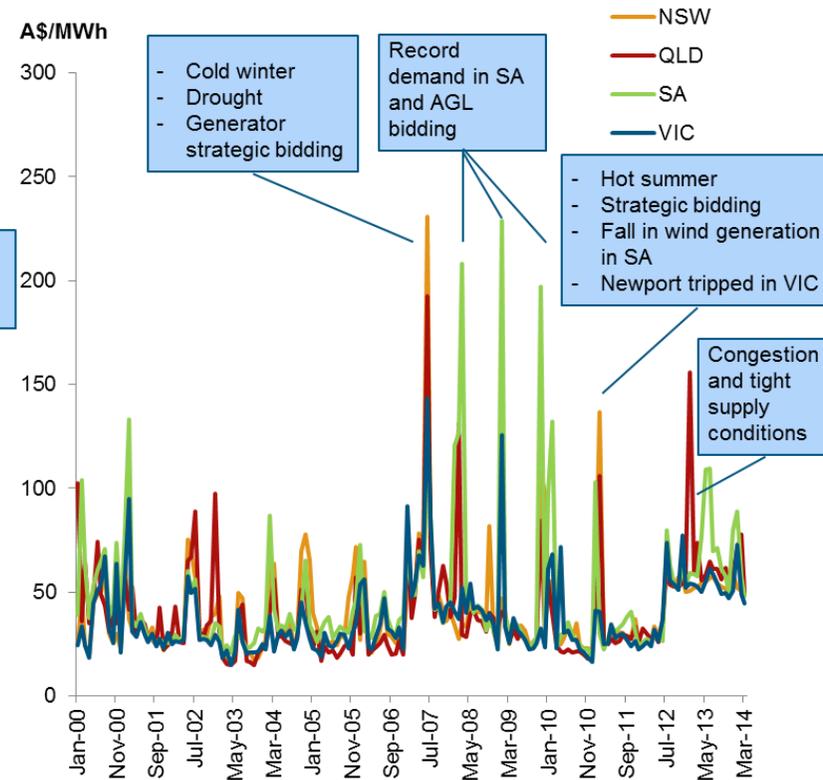
**Because the regulatory framework does not incentivise retailers to manage price risk for consumers, the ERC is distorting the market to reduce customer risk**

# In similar markets, prices spike to much higher levels than ever seen in the WESM – and these price spikes support investment

**New Zealand historical monthly average final prices 2000-Current at 3 major nodes**

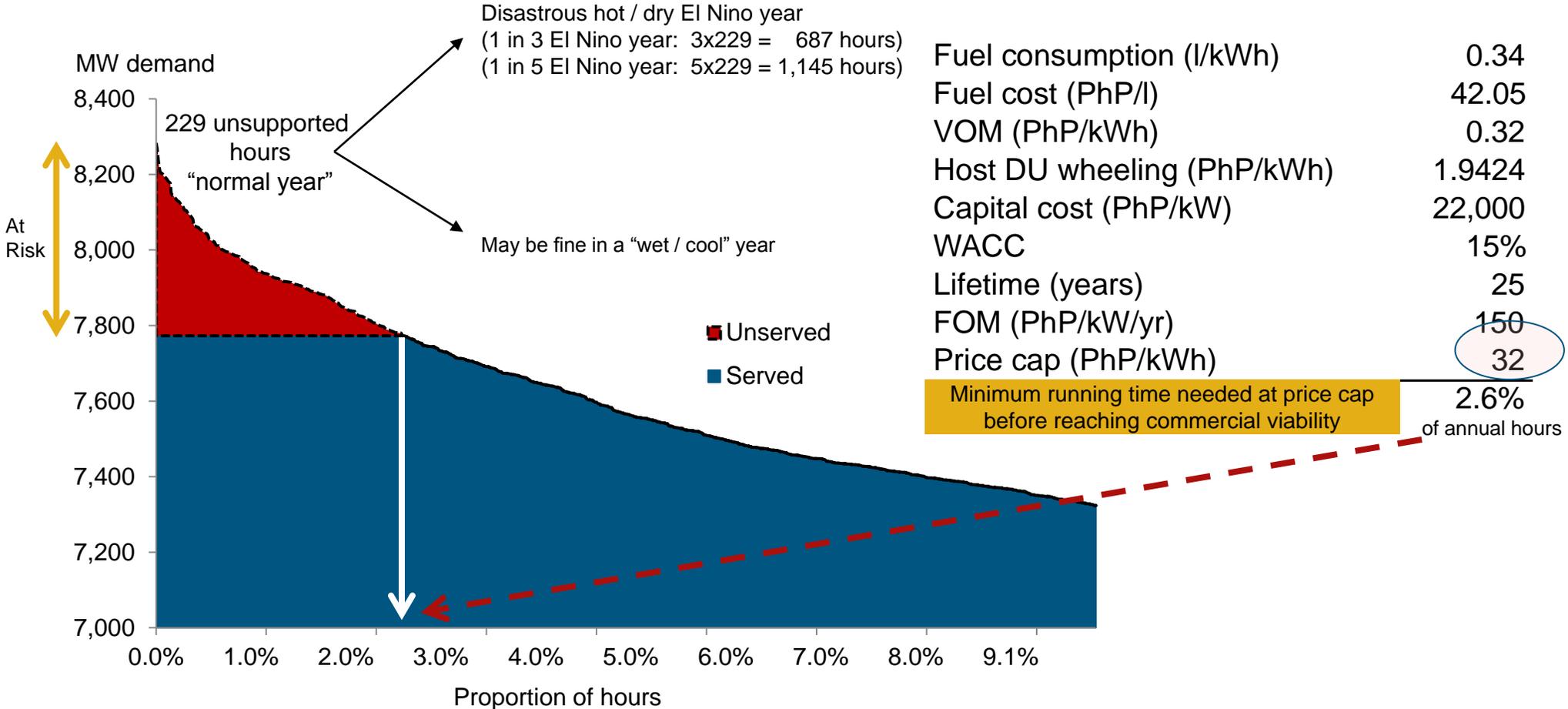


**Eastern Australia historical monthly average final prices 2000-Current at 3 major nodes**



**Without investment, price spikes get worse, the market fails, and value is destroyed**

# The lower the price cap, the greater the risk of future unserved load



Source: DOE; PEMC; TLG analysis

**A price cap of 32 PhP/kWh will, in time, guarantee shortage**

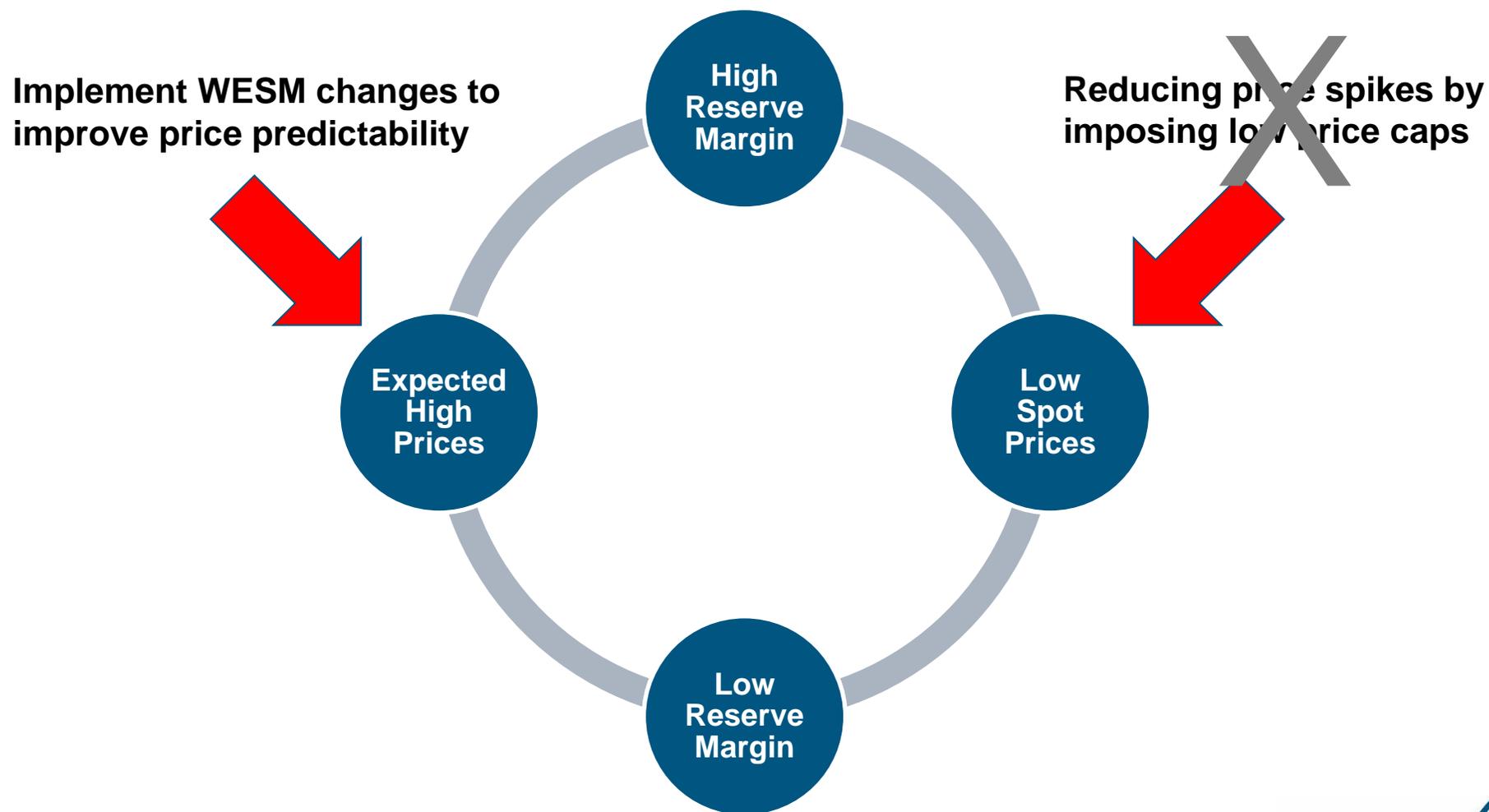
## But with a more appropriate regulatory framework and a higher price cap...

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- More attention would be paid to effective contracting strategies – especially contracts to cover disruptions, outages and peak demand
- Flexible and responsive capacity (such as that provided by LNG) would become more commercially attractive, leading to earlier replacement of older, expensive, and less responsive capacity
- However risks to retailers would increase, as they would be more exposed to uncovered (spot) price risk
- And changes to the regulatory environment would be required to support this outcome

**Undermining market mechanisms is a bad solution to regulatory failings**

# WESM regulation is really focused on the wrong part of the investment cycle



## Fix simple, basic, and long-standing WESM issues

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- Stop distorting economic outcomes
  - Eliminate Pmin
  - Eliminate the must-offer rule
- Provide proper signals with offer caps that align with desired reliability of supply targets
  - Raise the price caps
  - Don't use price caps for consumer protection unless you also plan to hand out flashlights when the power does not come on
- Introduce trading of Ancillary Services in the WESM
  - Price signals for the value of flexible capacity
  - Potentially not fully compensated under current regulatory regime
- Invest in market software / processes to minimise pricing errors

**If it is necessary to manage consumer / transitional exposure, there are temporary value management mechanisms available**

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## In summary

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- Regulatory oversight should focus on the total portfolio, not individual generation contracts
- Review of portfolio cost should be conducted with reference to market benchmarks
- As retail aggregators to the captive franchise load, DUs should bear at least some spot market risk
- WESM spot price cap is too low, exacerbating the risk of power shortage
- WESM rule changes and operational improvements would enhance spot price predictability, thereby facilitating generation entry

**We will continue to watch, wait and push for improvements**



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