

Our take on an issue
of the day ...

January 2011

In this edition

We take a look at the Philippine WESM, which is on the cusp of reaching the privatisation threshold for open access under EPIRA. Recently expanded to cover the Visayas, the WESM is the most dynamic new market in the Asia Pacific.

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Spotlight on the Philippine WESM

Overview

The Philippine electricity market, the WESM, is over four years old. The WESM is a sophisticated market that requires stakeholders to make important decisions about investment, regulation, policy and operation largely on the basis of historical, current and expected future prices and dispatch quantities. Investors, regulators, consumers and policymakers need to understand the WESM in order to determine if it is functioning as intended and in a manner that can support the investment needed to meet the growing electricity requirements of the Philippine economy.

Failure to fully understand how the WESM works can lead to poor policy, missed opportunities and bad investment decisions.

Event-driven price outcomes

WESM prices have exhibited an “event-driven” character. Figure 1 highlights how hydro variation, typhoons, transmission system constraints and outages, generation outages, and fuel supply disruptions, among other things, have affected market outcomes. With the recent extension of the WESM in December 2010 to include the Visayas, the complexity of the WESM increases further.

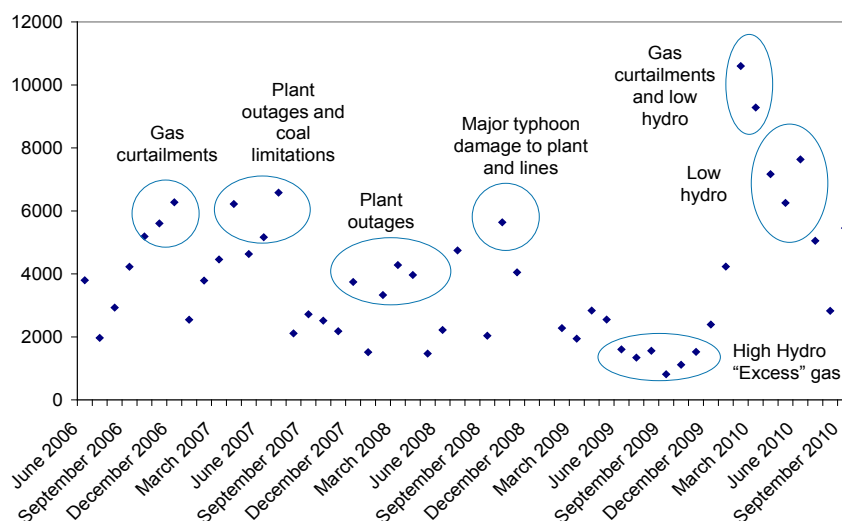


Figure 1: Events affecting average WESM price levels

The WESM design reflects lessons learned in other regional electricity markets including New Zealand, the Australian NEM and Singapore. As with those markets, the WESM is an energy-only market, which means that there is no payment to generators simply to be “available”. Payments are either directly related to spot market operation (in which a generator must generate to be paid the spot price) or from bilateral or other forms of contracts that the generator may have in place (either as a legacy power purchase agreement, an IPPA arrangement or a new bilateral contract negotiated after the start of the WESM).

Highly diverse fuel mix

The WESM has one of the most diverse mixes of generation technologies and fuel types of any market in South East Asia. And unlike some South East Asian countries, power producers in the WESM procure most of their fuel on terms set or influenced directly by global fuel markets. In that sense, the Philippines is more like Japan, Singapore, Taiwan, Thailand, Korea and Hong Kong than it is like Australia, New Zealand, Malaysia or Indonesia, the latter countries having significant indigenous or government administered fuel sources that are not exposed to international market pricing pressures.

Financial contracts have not developed

Participant concerns, regulatory hurdles and delays to the start of open access have prevented or slowed development of financial contracts (contracts for differences) or other forms of contract trading which are the hallmarks of commercially robust power markets. The absence of financial contracts may ultimately increase merchant investment risk, as future revenues will be more volatile if they are predominately driven by spot market outcomes. Bilateral contracts are used instead of financial hedges in the WESM – a situation unlike any other energy-only electricity market. They are cumbersome and inflexible; financial hedges achieve similar financial outcomes but are easier to trade and easier to manage credit risks – particularly if exchanges develop to manage contract clearing.

Implications for market structure

For that reason, we may see the WESM develop a relatively concentrated “gentailer” structure as seen in New Zealand and Singapore (and to a degree in Australia) where vertical integration between a wholesale and retail operation (rather than financial contracts) provides the main source of “hedges”.

What is needed

The complexity of the WESM and its dependence on spot market prices that are highly volatile needs to be met by a commitment to provide clear information about market outcomes, strong governance arrangements to protect and ensure the continued existence of a level playing field and robust policy support that does not waver in its commitment to market-based investment.

Robust and well-focused market surveillance

In particular, policy-makers (with the help of a strong and well-trained market surveillance function) must be able to distinguish high spot prices that are needed to induce investment (in transmission as well as generation) from high prices resulting from inappropriate exercise of market power.

High prices are not always bad

High prices can be a concern for policy makers and consumers. However, high prices are not always a sign of trouble. High prices can be necessary to signal and support efficient investment (and to incentivize risk management activities and energy efficiency). Misclassifying such prices as an undue exercise of market power can lead to policy or regulatory interventions that chill investor interest and may thwart timely investment incentives. Lessons from New Zealand’s market during times of low hydrology are instructive here. Continuous consideration of market performance has been a hallmark of the Australian NEM beginning as early as 1998, with its seminal study on capacity remuneration mechanisms which included consideration of the role of high prices and price volatility on investment.¹

Completing the privatization process

Privatisation within the WESM has been a high point. Having started from a position of virtually complete government ownership, the Philippines has achieved one of the most extensively privatised power sectors in the Asia Pacific region (excluding Japan and Hong Kong, which did not have that same legacy of public ownership). Of the competitive markets in the Asia Pacific region, the WESM exceeds even the Australian NEM in terms of the extent of private sector investor involvement. This is a considerable achievement, as the Australian NEM is, in some respects, the most commercially robust of the markets in the region.

1. “Capacity Mechanisms in the National Electricity Market: A discussion paper, prepared for NECA”, Putnam, Hayes & Bartlett (Asia Pacific) Limited, 1998. The principal authors of this paper included TLG’s Mike Thomas.

The high level of private sector investment has attracted both local and international investor attention, which improves the competitiveness of the WESM and contributes additional sources of innovative technologies, best practice operations and deeper sources of financing. These accomplishments should not be discounted.

Naturally, consumers and policy makers tend to focus on prices. Prices will not always go down as expected. The generation and fuel mix in the Philippines and the general condition of generation and transmission infrastructure was not optimal at the time the WESM began. Among other things, too much natural gas had been contractually committed for use by the power sector. As a result, coal plants could not be operated efficiently because coal generation had to back-down significantly during off-peak periods to accommodate take-or-pay gas generation and hydro output. These problems are being sorted out. Investment is being made to improve plant performance. Improved availability and output is improving the competitiveness of the market. These things take time.

The fast growing Philippine economy is creating new investment needs. New generation capacity will be needed to meet that growth. It is therefore a matter of some urgency that the WESM produce more information for stakeholders to support greater understanding of market outcomes ranging from consistent and clear information on projected opportunities to information on market investigations and timely analysis of unusual market outcomes.

To give an example, WESM prices during 2009 and early 2010 were often difficult to interpret. Coming off the global financial crisis, electricity demand was low, but at the same time very high hydro inflows occurred in late 2009, which coincided with an unusual increase in gas-fired generation. The result was to reduce the need for generation from coal-fired power stations to the point where it was very difficult for coal-fired units to achieve their minimum output levels (below which they must switch off).

Negative off-peak prices resulted, in which coal-fired generators essentially paid money to be allowed to keep generating, sending confusing signals in a market that was otherwise ready to signal the need for investors to commit to constructing new baseload capacity to be ready to meet eventual projected growing demand. The negative prices were not, themselves, a problem—they

largely reflected short-term market realities. Nonetheless, it became clear after talking to many stakeholders at the time that the negative prices were not well understood, nor was any party undertaking to publish timely information that might help clarify the causes. When unusual market outcomes occur in other markets, invariably they are investigated and a report should be produced, contributing to the body of information and understanding about how markets work and whether improvements are needed. Continuous efforts to fine-tune the WESM should be a priority, given the economy-wide value at stake.

We consider that there are deficiencies in the market rules pertaining to formation of bids over each day together with poor information about hydro operations, hydro storage levels and hydrological variation also contributed unnecessarily to market uncertainty. We also see a need for more detailed and consistent information dissemination and much greater definitional clarity when information is published. To take a simple example, the reporting of demand projections and reported generation capacity is notoriously problematic, with significant and often material inconsistencies in the definitions of what is reported in different publications and sources.

Another area that requires attention concerns the quality of information and the compensation arrangements pertaining to “must run” declarations. For the most part, must run declarations pertain to fairly technical situations and occur as they should. In every market-based system, the system operator will periodically face a situation in which it must direct the output of a unit in a particular location as a result of localised constraints that prevent other sources from being used to meet demand. Must run can also be caused by the need for plant testing and flood control in the case of multi-purpose hydro units.

Must Run (MR) events are detailed in a report published weekly. At the beginning of the market, a diverse range of reasons—often related to specific generation or transmission-related faults—resulted in must run events (as shown in Figure 2). By 2010, however, the vast majority were occasioned by the more generic problem of “low reserves”.

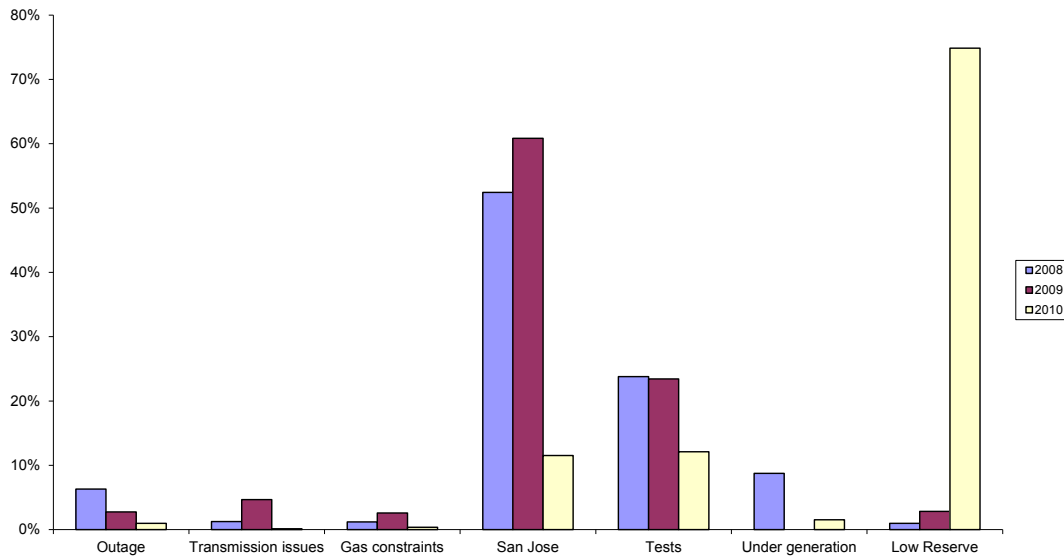


Figure 2: Key reasons for Must Run events

During the 2010 period in which Malaya was operated extensively on MR status, it was almost always also scheduled to run under economic dispatch. The MR declaration simply forced Malaya to operate outside its bid range. Malaya was compensated for its economic dispatch at market prices set by the WESM. Malaya's compensation for its incremental MR quantities, however, was set by a Generation Price Index. The resulting compensation was, at times, below the cost of operating Malaya. Although these incremental MR quantities were a relatively small share of the overall total generation, the losses on these MWh could easily offset the small margins on Malaya's economic dispatch.

A plant that cannot turn a profit when it is operating will not be maintained in a ready operational state for very long. On the other hand, the use of the GPI arose because there was no other reliable way to determine how to compensate MR operation. In other markets, such as Australia, call-option contracts are used to establish the basis for compensating MR operation. In exchange for an option fee, the plant owner allows the system operator to utilise the plant in special situations, such as for ancillary service provision or network support. A review of MR compensation would be timely.

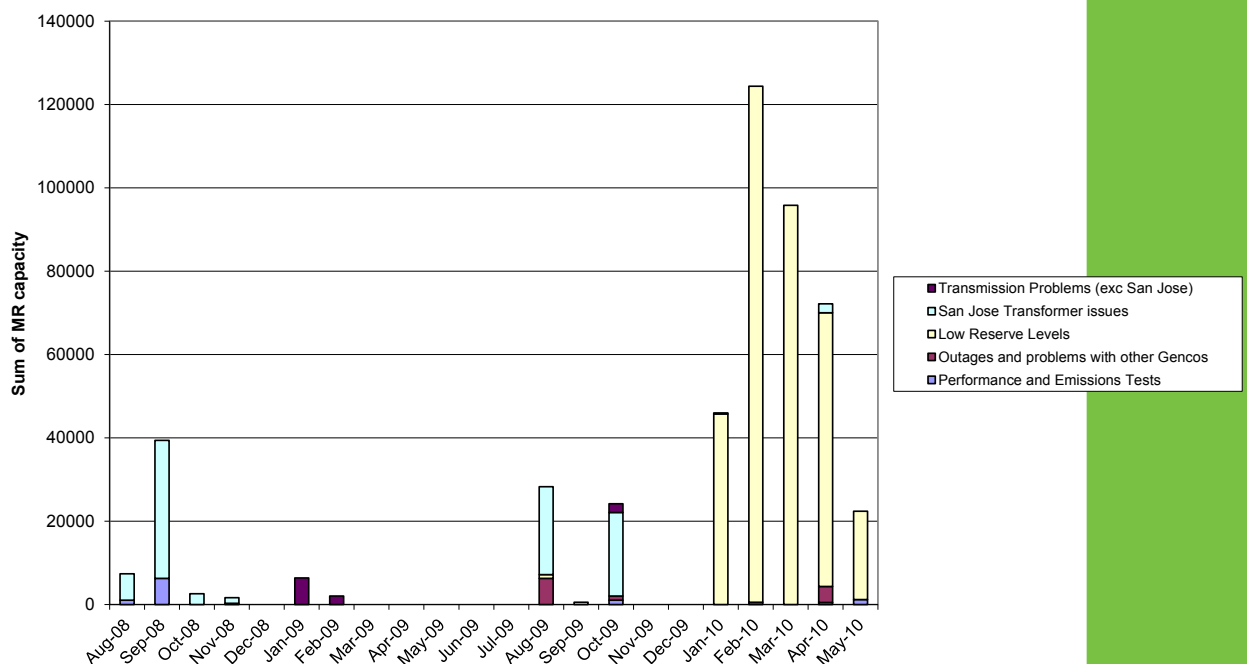


Figure 3: Analysis of Malaya Must Run since August 2008

Summary

Electricity markets such as the WESM are always evolving. In its over four and a half years of commercial operation, the WESM has become a relatively advanced market. It is time to do a stock-take and make some improvements and refinements in the market rules, information provision and governance arrangements. It is notable that there have been few, if any, rule changes since the WESM launched, whereas in other markets many tens or even hundreds of (often minor) rule changes are often made in the first few years of operation. Understanding the WESM better will improve its performance and increase stakeholder confidence in the WESM as a platform for delivering timely investment, adequacy and reliability of supply and competitive outcomes that deliver value to consumers.

Sources

Figure 1: WESM market data (Ex-post nodal prices at the generator terminal) purchased from WESM, WESM Monthly Reports and Lantau Group Analysis

Figures 2 and 3: WESM Must Run Unit Reports and Lantau Group Analysis

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