



**International Power
Australia**

Submission to the AEMC
Reliability Standard and
Settings Review 2009

23 February 2010

Summary

International Power Australia (IPRA) makes this submission regarding the risks to market sustainability and long-term provision of reliability under the current NEM arrangements.

IPRA broadly supports the National Generator Forum (NGF) and ERAA submissions.

Whilst the question regarding the level of the MPC/CPT is important, in isolation they fail to address the question of adequate and **timely investment** which is necessary to meet the reliability standard. This submission provides additional dimensions to the question of reliability in the NEM from a private investor's perspective.

An earlier study conducted as part of the Comprehensive Reliability review work by the RP came to the conclusion that the market can theoretically deliver the required reliability criteria, but only if it is left to function free from policy interventions.

Since that study, the level of policy induced market distortion has increased (RET – solar, domestic gas in Queensland, CPRS, carbon tax or both, numerous energy efficiency measures and the likely ETS (CPRS)).

Unfortunately the AEMCs recent Market Frameworks review dealt with market sustainability and private investment only superficially and essentially from a premise that there wasn't a problem to start with.

In the next 5 years the electricity industry requires some \$97 billion of capital for refinancing and new projects. Accelerated investment to replace plant dislocated by the introduction of CPRS will increase this amount further.

IPRA urges the AEMC Reliability Panel to assess the ability of the Energy Only Market (EOM) to meet the reliability criteria **in the face of a range of distortions/policy interventions/initiatives** (RET, ETS, energy efficiency initiatives, gas schemes etc).

IPRA argues that such a review would be consistent with the NEL objective of "promoting efficient investment in, and efficient use of, electricity services for the **long-term interests of consumers of electricity** with respect to price, **quality, reliability, and security of supply of electricity** and the reliability, safety and security of the national electricity system".

A critical element the RP panel must address is the ongoing sustainability of private investment.

Our key interest remains the ongoing efficient operation and sustainability of a competitive electricity market, which is potentially jeopardised by a range of policy and regulatory initiatives.

Introduction and context

International Power Australia (IPRA) is the largest private investor in electricity generation in Australia, with assets in Vic, SA, and WA. IPRA has persisted in investing in the Australian NEM while others have exited.

In developing the context for our response, it is useful to consider the challenges the NEM trading arrangement was designed to address, and contrast these with the challenges going forward.

The NEM energy only market was designed in 1994/5 in response to the microeconomic efficiency reform and was thus well suited to the challenges in the 90s.

- Large over investment in generating assets by states.
- Little or no interstate trading of electricity
- High cost of operations and maintenance (high employment, non-business related areas etc)
- Poor plant performance by world standards (low availability, high planned and forced outage rates)
- Scarcity of capital hampered further construction (no new debt policy in Vic etc)
- Political climate favoured microeconomic reform and market based solutions (COAG/ Hilmer)

The NEM has delivered many benefits from over the last decade and was free from blackouts experienced in other markets, namely California.

Past success is not a good guide to the future, unless the challenges remain constant.

However the challenges ahead are vastly different to those of the 90's, and can be summarised as follows:

- Environment
 - Deliver the 20% renewable generation target
 - Reduce CO2 intensity in line with yet to be agreed climate change policies
 - Cope with a plethora of initiatives to reduce demand through end use efficiency, stimulate gas fired generation by subsidising gas (Qld)
 - Cope with the accelerated decommissioning of coal fired plant and deliver cleaner (lower CO2 footprint) replacement generation
- Operation
 - Changing plant mix will challenge market operation
 - System inertia (replacing coal fired plant with low inertia plant)
 - Standby generation needed to firm-up wind
 - Increased network congestion

- Accommodating distributed and micro-generation
- System adequacy - investment
 - Meeting supply demand balance
 - Replacement generation under a potential ETS, and other climate change policies?
 - Need to attract private capital
 - Financing new projects post GFC in the face of climate change policy uncertainty is increasingly challenging
 - All businesses requiring access to finance need to compete for capital on the international stage.
 - This dictates that Australian investment environment is perceived as competitive, particularly as far as regulatory and sovereign risks are concerned.
- Infrastructure to underpin generation must occur in step with the investments in generation
 - Develop efficient **transmission and distribution infrastructure**
 - Provide efficient **gas infrastructure**

The overarching objective of delivering economically efficient outcomes from customer's perspective remain, but are compromised by a plethora of climate change initiatives at both the federal and state levels, these force uneconomic generation into the mix and increase cost to consumers.

IPRA is of the firm view that the RP must assess the ability of the current (EOM) market to meet the reliability criteria in the face of a range of policy interventions/initiatives (RET, ETS, energy efficiency initiatives, gas schemes etc) and operational challenges.

- Refer CRA advice to Reliability Panel 2007 – current (EOM) market form requires **undistorted environment**
- Inertia is necessary for system stability but is not explicitly valued by the current trading arrangements
- No market cap is triggered when market operation outside market design (FM)
- Risks to investors from the current transmission arrangements
- Uncertainty over Carbon policy and its impacts on existing and prospective investments

Consideration of these elements is critical to the on-going development of the NEM energy only market (EOM) and are to be commended.

According to a latest esaa member survey, the electricity industry needs some \$97 billion of capital for refinancing and new projects in the next 5 years. Accelerated investment to replace plant dislocated by the introduction of CPRS will present large additional demand in excess of this amount.

Detailed response

We address the key issues raised in the Draft Report “Reliability Standard and Settings Review” as follows:

Reliability Standard

Based on the information considered by the report, IPRA supports the retention of the current USE of 0.002% as criteria for NEM reliability.

Market floor price

The analysis by ROAM hasn't supported a change to the market floor price. There are no compelling arguments for an altered floor price and there is no articulation of a specific problem needing to be addressed. Therefore IPRA supports the retention of the current level and suggests that arbitrary changes to the floor price should not be contemplated in the future.

Market Price Cap - MCP

An increase from the current level of \$10,000/MWh to \$12,500/MWh is already scheduled to commence in July 2010.

The ROAM modelling suggests a further subsequent increase to \$16,000/MWh in 2012/2013, and in our view is unjustified:

- Costs of the OCGT used in the study were too low
 - The WACC of 6.84% is too low for a risky investment and a rate in excess of 12% is considered more appropriate
 - The gas infrastructure costs were omitted in the assessment and are likely to be considerable, particularly for a low capacity factor plant
 - Such plant would also need firm gas supply arrangements to ensure it can run for an extended period but very infrequently (i.e. 1 in 10 year event?). This would further increase its costs and exacerbate cost recovery.
 - It is likely that the costs would thus increase some 50%+, leading to a MPC of in excess of \$20,000/MWh, using the ROAM adopted methodology.
- Other revenue streams need to be included
 - It is highly unlikely that such low CF plant would seek to survive on pool revenue. Contract revenue was not considered in the ROAM modelling
 - Ancillary services (perhaps extending to black start capability)
 - Used to firm up intermittent renewable (wind) generation
 - Additional revenue streams will serve to reduce the pool revenue requirements to reach revenue adequacy
- Impacts on risk profiles and contract market liquidity

- Increased risk to generators as a result of transmission congestion and plant availability are likely to cause generators to withdraw capacity from the market
- The likely impact will be lower liquidity in the contract market and reduced competition
- Vertically intergrated businesses are likely to manage these risks by investing in their own plant, thus further increasing market concentration.
- This, combined with reduced contract liquidity and increased prudential requirements will serve as a barrier to entry to smaller retailers (some or the smaller retailers may exit the market). Increased market concentration is the most likely outcome.
- Increased risk of intervention - Increased maximum prices and pool price volatility, coupled with increased contract prices would sensitise regulators and governments and is likely to lead to more frequent intervention. This in turn would serve to increase the regulatory risk on generators and impede investment.

Cumulative price threshold - CPT

The design intent and primary function of the CPT is a risk management tool in the absence of market FM, or physical triggers, for administered prices.

Therefore the CPT should not be increased simply in response to the MPC increase.

- ROAM modelling shows that, due to rare, but long-duration high-price events, the CPT reduces the revenue to the marginal low capacity factor (CF) OCGT by triggering the APC and capping the OCGT pool revenue.
 - This is a matter for a review of the compensation mechanisms to ensure that once the administered price cap is triggered, fixed costs for such plant are also recovered. Under such an arrangement price signalling beyond a point where the market can be reasonably expected to respond would be limited. Therefore also limiting cost to consumers and the availability and transmission risks faced by all generation.
 - It is suggested that modelling of low probability (rare) extreme events, where multiple plant failures occur simultaneously are highly uncertain and any conclusions formed need to be made within the limitation of the modelling.
 - The market design expectations in relation to the CPT mechanism were that marginal low CF OCGT plant would run for short durations only, without triggering the CPT. If it can be demonstrated that reality is likely to be different, market design will need to be revisited.
- Transmission failures were not considered and are expected to have a significant impact on the ability (and frequency) of a low CF OCGT to reach revenue adequacy.
- It is not considered acceptable, or economically efficient, to increase risks due to the MPC and CPT simply to cater for the marginal OCGT revenue requirements during very short and

infrequent events, with these risks applying for all other times in the NEM.

Investor Confidence

According to a latest esaa member survey, the electricity industry needs some \$97 billion of capital for refinancing and new projects in the next 5 years.

A large amount of additional accelerated investment will be required to replace plant dislocated by the introduction of CPRS. Such investment will only occur if there is the face of risk/rewards commensurate with such projects and are globally competitive for finance.

It is therefore imperative that the AEMC:

- 1) Consider and quantify the impact of regulatory changes that are within AEMCs control on the investor's climate. A suggested approach is summarised in the next section of our submission.
- 2) Assess the impacts of external policy and regulatory risks, outside of AEMCs control, on the investment climate. These need to go far beyond the superficial considerations of investments in the AEMCs Market Frameworks review.

Suggested next steps

- Other sources of revenue (e.g. contracts), together with other reasons for investing need to be included in the assessment of revenue adequacy. Investments are usually made for other than purely pool revenue reasons.
- Assess the increased risks of transmission constraints and generating plant unavailability on generators, and the effects on both the cost of, and the ability to obtain, finance.
- Consider the potential withdrawal of capacity from the contract market in response to the additional risk
- Consider the impacts on retail competition as prudential requirements, and hedging costs increase capital barriers for new entry (likely to cause exits of small existing retailers)
- The OCGT costs used in the modelling should not exclude gas infrastructure or apply unrealistically low level of WACC (6.58% vs 12%+)
- Realistically assess the increased end user tariffs that are the most likely results of the proposed changes.

The key question is "Do the benefits to reliability delivered by the change exceed the costs to consumers?"

The panel analysis should factor in all these costs to ensure that the cost of meeting reliability are minimised.

The overarching NEM objective is: ***"To promote efficient investment in, and efficient use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality,***

reliability, and security of supply of electricity and the reliability, safety and security of the national electricity system”

In summary, without a holistic assessment of all of the these factors, and additional issues facing investors as presented in other parts of our submission, it will be impossible to demonstrate that the proposed solution is in line with the code objectives.

We suggest that the current oversimplification of the reliability settings is not in the longer term interest of the consumers, and is in danger of precipitating a failure of the current EOM market design.

Appendix

A number of detailed comments and recommendations have been made in our submission; however these need to be framed in the context of the key issues surrounding the NEM EOM.

The current market EOM design and operation is complex, has many drivers and feedback loops and we consider that its long-term sustainability (at least without reversion to state ownership) is quite fragile.

The overarching NEM objective is: ***“To promote efficient investment in, and efficient use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, reliability, and security of supply of electricity and the reliability, safety and security of the national electricity system”***

We assert that many of the current government policy initiatives are in conflict with the longer-term market sustainability and hence are not in the long-term interests of the consumers. Some examples of these are as follows:

- The impacts of on-going government ownership Identified by ERIG (risk, borrowing rates, asset values etc)
- Alleged early construction of plant in Queensland
- The plethora of greenhouse measures that subsidise and encourage early new entry
- More recently the global financial crisis has made refinancing and project finance very challenging, with global competition for scarce capital.
- The impact of the GFC was further magnified for generators by inadequate ESAS and asset impairment prospects.

Some of the fundamental characteristics of the EOM are as follows:

1. The forward curve is essentially capped in the longer term by the new entrant costs.
2. The inter-linked nature of the market, the shape of demand- and price-duration characteristics, and the ‘lumpy’ nature of investment in what is still a relatively small market, mean that the trading arrangement is very sensitive to the new entry timing and sizing. Decisions on one plant in one region impact most of the market due to a common (and linked) clearing price.
3. To achieve revenue adequacy (fixed costs) the market relies on infrequent and relatively short periods of scarcity pricing (at or near MPC). More significant events that contribute to fixed costs may be (on average) as infrequent as 1 in 10 years.
4. Demand is uncertain (weather dependant) and plant mix will significantly influence market outcomes.

In order for the EOM to be sustainable and reliable, it is essential that the majority of prudent and efficient investors are able to achieve revenue adequacy on their investments. This requires the following conditions to be satisfied:

- New entry must be reflective of the true commercial cost and must not be subsidised (i.e. free from - costs held artificially low

due to cross subsidies, un-commercial rates of return, subsidised fuel costs etc)

- New entry timing must be based on commercial decisions of market participants with the objective of achieving post-entry revenue adequacy and not be driven by externalities to the EOM.
- Price signalling must be preserved to drive effective demand side response or capacity augmentations in the longer term.

According to the ESIPC and CRR modelling studies, the EOM has the potential to be sustainable and to deliver the required level of reliability **if and only if left alone**. However this condition has not been satisfied to date and there is currently no assurance it will be satisfied in the future.

Currently the EOM is subjected to the following “headwind” issues. The likely impact of these issues on the fundamental properties of the NEM is identified

- **Reliability perceptions** - Commercial interests and government drivers are in conflict. Governments (understandably) like to see new plant introduced early to give them comfort that the market is working and will produce reliable outcomes. In contrast, commercial investments tend to occur late (just in time). This represents an efficient market outcome but is probably not an acceptable one. (Impacts 2,3,4 above)
- **Greenhouse policy initiatives** – Measures such as MRET, VRET, NSW GGAS, Queensland Gas Obligations – GAC, VEET, and others. Some of these essentially translate into a subsidy for new entrants and some existing plant, (capital or fuel cost) and thus have a bias towards introducing new plant early (design feature of the schemes - glide path). There will also be an impact on the residual demand profile, which impacts the remainder of plant mix in the NEM.

The non-firmness of wind generation in particular negatively impacts the contract-generator dynamics in the spot market. Some new technologies such as solar, geothermal and clean coal are being developed and are subsidised into the market. The combined impact of such initiatives has effects on all the market fundamentals.

- **ETS (CPRS)** – the prospect of an ETS (CPRS) without adequate compensation presents a huge risk of asset value impairment and prospect of an early shutdown to some of the coal fired power stations, particularly brown coal. The lack of clarity regarding the scheme design, compensation mechanisms, commencement date and cost of CO₂ (in light of uncertain CC policies internationally). This has a direct bearing on the availability and cost of finance to the industry.
- **Price volatility** appears not to be an acceptable outcome from a political perspective, and volatile prices are subjected to on-going surveillance by the AER exposing participants to the risk of regulatory intervention. (Likely to impact 3 above)
- **Supply scarcity** - USE which results from economically efficient market operation remains politically unacceptable, and scarcity pricing encourages intervention by politicians or regulators. Hence the fundamental means for remuneration of the fixed cost of generation investment is therefore diminished. With increased

MPC, price volatility is expected to increase and expected attention by regulators and politicians is expected to increase.

- **Cost of new entry** – Government owned entities are perceived to have lower risk profiles and are able to access lower cost of capital compared to privately owned businesses. This creates an uneven playing field (investment risk) and runs the real risk of generation being developed sub optimally. (Impacts 1, 2 above)
- **Transmission Pricing and access** – Generator access to reliable transmission and transmission reliability are fundamental to efficiently meeting the supply demand balance. The current access arrangements do not include effective performance obligations on TNSPs and leave the generators to face risks beyond their control. This typically impacts the volume of contracts able to be offered into the market, and hence reduces efficiency.

