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## **Wholesale Electricity Generation Market Review**

Thank you for the opportunity to submit to the Northern Territory Utilities Commission review of Wholesale Electricity Generation Market.

The Australian Energy Market Operator (AEMO) operates the National Electricity Market (NEM), the Victorian Declared Wholesale Gas Market (DWGM) in Victoria and the Short Term Trading Markets (STTM) for gas at hubs in Adelaide, Sydney, Brisbane and Wallumbilla. AEMO is also responsible for the procurement and planning of the shared network and connections of electricity transmission in Victoria and has a range of national planning functions for electricity and gas transmission.

AEMO is an independent, member based organisation (60 per cent government, 40 per cent industry) working in the long-term interests of Australian consumers by ensuring that energy markets operate to balance issues of price, quality, safety, reliability and security of energy supply.

AEMO's role provides it a wide perspective that is relevant to this review. The attached submission presents AEMO's view on the report by Oakley Greenwood. In general the consultant has identified the key issues and AEMO is broadly supportive of the findings. AEMO cautions against underestimating the time and cost of setting up the proposed market, and considers the potential benefits will inevitably be limited by the market size and level of competition that can be sustained in that context.

If you would like to further discuss any matters raised in this submission, please contact me on (08) 8201 7371 or Ben Skinner, Specialist Market Development on (03) 9609 8769.

Yours sincerely

[not signed – sent by email]

David Swift

## **Executive General Manager Corporate Development**

Attachments: AEMO submission to Northern Territory Utilities Commission review of Wholesale Electricity Generation Market

# AEMO submission to Northern Territory (NT) Utilities Commission review of Wholesale Electricity Generation Market

## 1. Context

Well-designed markets can drive substantial efficiencies in an energy industry, and AEMO considers the NEM as an example. Such successes are usually discussed in relation to large markets where substantial competition is possible, and emerges through a largely deregulated framework.

AEMO is unaware of any power system of similar size and nature to the Darwin-Katherine system which has implemented a market that is deregulated to the extent that competitive forces fully drive outcomes. Applying fully competitive models such as the NEM in this circumstance risks inefficient outcomes due to the size of the market.

AEMO does consider that a new arrangement can be devised which uses competition or contestability where possible and regulation where not to drive efficiency improvements. Such a model could at least support:

- A mechanism for efficient dispatch and marginal price disclosure.
- A design and institutional framework that facilitates third-party access to the network, such that new privately-owned generators can confidently enter and efficiently transact with existing and new customers<sup>1</sup>.
- Competition for a range of services within the supply chain.

At first glance an adoption of a NEM-style rules framework may seem excessive for these objectives. However the NEM-rules provide a useful, well understood model, and therefore using these as a base, and regulating outcomes where competition is unlikely to be effective, may present the simplest implementation.

The comments below are presented with these relatively limited objectives in mind for the proposed Northern Territory Electricity Market (NTEM). Sections numbers refer to the Oakley Greenwood report.

## 2. Applicability of the NEM model to the Territory

### 2.1. Capacity Signal

The report by Oakley Greenwood explains why the energy-only design of the NEM is not likely to be feasible for the NTEM. AEMO considers that the NEM's energy-only design has provided it an adequate capacity signal, but in the context of a large, disaggregated and competitive generation market, a high price-cap and unregulated generator bidding. As these features would be difficult to emulate in the NTEM, it could be necessary to provide an alternative mechanism.

A bespoke capacity arrangement will however increase costs to implement and operate and create potential risks for parties seeking to participate. The Reliability Assurance Mechanism is discussed in more detail below.

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<sup>1</sup> This objective is well articulated in section 3.2 of the consultant's report.

## **2.2. NEM Rules**

The report recommends that the Australian Energy Regulator (AER) be responsible for economic regulation in the NT and the Australian Energy Market Commission (AEMC) be responsible for managing market Rules. Also that many aspects of the Rules could be based on the NEM Rules and some market information roles could be fulfilled by AEMO. We support these recommendations as a way to mitigate the costs and risks of developing a unique new energy market design. Basing the Rules in the NT on the national rules and using national institutions where possible should also reduce barriers to entry and provide more confidence to participants.

AEMO cautions that the effort needed to redraft and implement the Rules despite the approach proposed could be substantial and may be underestimated. In particular the interconnected nature of the NEM Rules will need to be studied, and selective deletion of redundant sections will require considerable skill and effort.

## **3. Cost based bidding**

Section 5.5.2 of the report discusses the need to mitigate generation market power, as occurs in the South-West-Interconnected System (SWIS) and Tasmanian region of the NEM. Whilst this has not been required for the majority of the NEM, AEMO understands the reasons presented as to why it may be necessary in the NTEM.

The report proposes that the most pragmatic means of regulating market power is by bid price restrictions. The task of regulating bidding to actual short run cost in a market context should not be under-estimated. Some issues that will emerge are:

- Such arrangements also require obligations to present capacity. Generation outages require regulatory oversight to manage the incentive to artificially create scarcity.
- The market design includes self-commitment. While gas fired generation can start and stop in a relatively short time frame, starting a gas turbine imposes costs for which must be recovered over the time it is going to run.
- Gas and gas transport charges may also vary depending upon the pattern of usage.
- The institution responsible for regulating bid prices has not been identified. The AER would have the appropriate independence, but as it does not have this responsibility in the NEM it would represent a new function for them.

When the Tasmanian Regulator (OTTER) was considering similar controls in energy and ancillary services, AEMO recommended regulating hedge contracts as a better approach. AEMO recognises that the NTEM circumstance is different, and has not analysed whether such an approach is feasible. Nevertheless, given the challenges of bid price regulation, we encourage that alternatives like this which seek to regulate outcomes rather than inputs be considered.

### **3.1. Contract-based Ancillary Services**

Section 5.7 presents a persuasive case for contract-based ancillary services, but does not discuss that there would also be a need for regulatory controls on the tendered prices and volumes of these services which are highly unlikely to be competitive. Ancillary services, especially frequency control and operational reserves, are proportionally more significant in a smaller power system, and this issue has arisen for those services that must be purchased from the Tasmanian region of the NEM.

#### **4. Reliability Assurance Mechanism (RAM)**

If unregulated competitive dynamics cannot be relied upon to drive generator investment, a mechanism will be necessary to appropriately reward required capacity and drive effective asset management and utilisation. Explicit capacity mechanisms are themselves very intricate to design and typically require frequent review and adjustment. The report proposes a financial hedge approach, which appears to have intrinsic advantages, but considerably more detail will be required to understand whether those benefits can be delivered in practice. Open issues include:

- With the current generation structure, offered RAM prices could be excessive and inconsistent with physical conditions, therefore some form of price control seems necessary. At the other extreme, in a genuinely competitive, but oversupplied market, the price of capacity contracts will fall to near zero. There may be an expectation of some kind of stabilised returns, at least for the initial years.
- The linkage between RAM incentives and real-time dispatch is not fully clear. The report speaks of a RAM contract working “as a financial hedge against the real time market price”, but it is unclear how the real time market price will indicate a true value of scarcity which would be necessary to create sufficient financial risk to incentivise performance against the financial hedge. This is particularly the case where energy prices are to be kept low through cost-based bidding.
- The report refers to a “reserve adder” to the energy price, presumably to create a delivery incentive at times of low reserve, however this adder required explanation.
- Successful tenderers will receive a contract fee to be funded by a charge on wholesale customers. The allocation of the charge is a key design issue in itself: customers with interruption capability usually do not fund capacity payments. Will liability be determined by the market operator, and on what basis? Ideally, the hedge concept would permit voluntary participation in the RAM scheme, i.e. customers can either pay for the capacity contract or suffer the risk of being exposed to a scarcity energy price.

#### **5. Network Congestion**

Section 5.6.3 accurately summarises the NEM and WEM’s different approaches for the management of network congestion and the resulting challenges, leading to the contemplation of major reforms such as Optional Firm Access (OFA). Like the WEM and NEM, the paper recommends paying Locational Marginal Price (LMP) for losses and crediting surplus to the network. It would be straightforward to similarly pay LMP for congestion, thus resolving the issue directly as occurs in the New Zealand Electricity Market. Given the size of the NTEM and cost-based bidding, the financial risks to generators of facing full LMP without any transmission rights mechanism seems small, and is likely to be justified by the improvement to dispatch efficiency. Alternately similar outcomes could be delivered by placing Darwin and Katherine in separate regions in the NEM model.

#### **6. Settlements and Prudentials**

Section 5.9 includes a useful discussion of prudential requirements and optional netting. AEMO suggests settlement timing should also be considered. Depending on the timeliness of wholesale metering data, the NTEM should be able to settle much sooner than the NEM’s

4 weeks, thereby reducing the prudential burden. Also, cost-based bidding will reduce the burden further.

## **7. Institutional Structure**

In order to attract private investment, confidence in the overall governance arrangements is critically important. This is particularly the case in the partially regulated market design proposed, which includes some central decision making affecting investment in generation capacity. Efficient investment and operation will be directly dependent on independent expert decision making which again is reliant on good governance arrangements.

AEMO concurs with section 9's recommendations of independence between critical functions. In particular:

- The report correctly recognises the importance of fully separating three functions from each other: market operations, market-facing generation and gas contracting.
- AEMO agrees with the suggestions of the AEMC overseeing rule making and market surveillance to AER. This would provide both independence and synergies with their existing skills, noting that the AER does not presently monitor cost-based bidding regulations.
- AEMO also supports the recommendation that the Market Operator, System Controller and Reliability Manager functions are best kept together, and that their independence from market-exposed activities is paramount. In line with the other recommendations for transferring roles into national institutions, transferring these functions under AEMO could be considered.

## **8. Path forward**

Given the limited scope for competition, one needs to be realistic as to a market's potential benefits. The consultant was not asked to consider the costs and benefits of undertaking market reform as a whole. The Commission's stance in this regard needs to be considered.

It would be a large task in itself to estimate the full range of costs to introduce a market. To achieve sufficient integrity, markets require many existing activities to be standardised and documented. For example, the NEM required considerable new metering investment. Similarly, security standards needed to be standardised, defined and documented.

With this work, noting our suggestions regarding some features of the design, the Commission has a potentially attractive candidate market solution. A cogent alternate "non-market" base case could be established to support such a cost-benefit. In assessing the benefits of an approach, however, there needs to be a clear understanding of the government's objectives in any reform.

Beyond the government objectives stated in section 3, a discussion of what real benefits are envisaged by an NTEM would assist. This could be achieved by proposing a vision of what the industry would ideally evolve into. The NTEM could then be critiqued regarding its ability to support that vision.

Examples of such visions might be:

- Ultimately separating or privatising PAWA power stations and thereby realising the operational efficiencies that competition brings.

- Mine or industry based generators connecting to the grid and efficiently trading electricity production with the rest of the Darwin-Katherine system.
- Future energy investments, contracting and retail pricing to be done through entirely commercial arrangements and separated from potential political interference.

The government should be aware that the change could be costly and disruptive, and if the exercise is to be worthwhile, there must be a clear view of the government's longer term objectives or visions such as those described above to materialise.

### **8.1. Legacies**

A market can provide the incentives to drive efficiencies going forward, but it cannot change history and resolve or hide legacy issues. Examples of such legacies could be:

- Inefficient previous capital investment in plant.
- Political difficulty in implementing cost-reflective customer prices.

A market cannot resolve such issues, and indeed the integrity of some markets have been undermined where design compromises have been made in order to avoid facing and resolving these issues directly. Where these issues exist AEMO recommends they are resolved directly, prior to the introduction of any NTEM.

### **8.2. Institutions**

To successfully drive efficiency through incentives requires well governed and managed commercial bodies. In the current arrangements, one body manages a complex mix of commercial and non-commercial activities. Some of these activities could in the future be competitive or at least contestable, some could be regulated within a market context and others may remain as current. This then implies a need to reform and restructure of current institutional arrangements as a key step in preparation for any new regime.