AEMC

Australian Energy Market Commission

REVIEW OF ENERGY MARKET FRAMEWORKS IN LIGHT OF CLIMATE CHANGE POLICIES

Discussion Paper

Public Forum

Perth

8 May 2009

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Citation

AEMC 2009, *Review of Energy Market Frameworks in light of Climate Change Policies: Public Discussion Paper, Public Forum Perth 8 May 2009, 4 May 2009,* Sydney

Contents

1. This paper

The purpose of this paper is to inform discussion at a public forum, which the Australian Energy Market Commission (AEMC) is hosting in Perth on 8 May 2009 in respect of its ongoing Review of Energy Market Frameworks in light of Climate Change Policies.

The discussion paper provides new information to stakeholders on the AEMC's ongoing development of its views, in a Western Australian context, on the following considerations:

- what are the most significant issues for the Review; and
- what specific changes to energy market frameworks should be recommended to the Ministerial Council on Energy (MCE) as findings of the Review.

We use the list of issues identified and discussed in the most recent AEMC consultation document for the Review, the December 2008 1st Interim Report, as a framework for providing this updated information. The information presented should be viewed as 'work-in-progress' for the purpose of informing discussion and debate at the public forum. The public forum is an important part of the process in testing this emerging thinking with stakeholders before the Review findings begin to be finalised.

2. Background

This section provides context for the issues covered in this discussion paper. It describes the role of the AEMC and the purpose of this particular Review. It also provides references to relevant further reading.

2.1. The AEMC

The AEMC is an independent statutory body, comprising three Commissioners and supported by a staff of forty people. We are based in Sydney and have a national role. Our formal statutory role spans two key functions. First, we are the Rule maker for the National Electricity Market (NEM) and for aspects of the rules for gas markets. Second, we are responsible for market development. We undertake this latter role in a variety of ways. The most significant, and germane to the issues discussed in this paper, is our role to review issues and provide advice to the main policy-making body, the MCE.

In undertaking all of our functions we are required by law to have regard to the National Electricity Objective (NEO):

> *"to promote efficient investment in, and efficient operation and use of electricity services for the long term interests of consumers of electricity with respect to (a) price, quality, safety, reliability and security of supply of electricity; and (b) the reliability, safety and security of the national electricity system."*

And the National Gas Objective (NGO):

> *"to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas."*

2.2. The Review of Energy Market Frameworks

The AEMC is undertaking this Review as directed by the MCE. The Terms of Reference (TOR) for the Review require the AEMC to: determine whether the existing energy market frameworks for the electricity and gas markets require amendment to accommodate the introduction of the Carbon Pollution Reduction Scheme (CPRS) and the expanded RET (eRET). Essentially, the TOR are to:

- examine the potential impacts of the CPRS and eRET on the current energy market frameworks;
- determine what amendments to these frameworks may be necessary, having regard to the NEO and NGO – to deliver efficient, safe, secure and reliable energy supplies in the long term interests of consumers; and
- provide detailed advice to the MCE on the implementation of any such amendments.

The review is to consider both electricity and gas markets in all states and territories. In reviewing energy market frameworks in Western Australia we will have regard to the relevant market objectives, including the Objective of the National Third Party Access Code for Natural Gas Pipeline Systems (until the regulation of gas transmission and distribution infrastructure in Western Australia is transitioned to the National Gas Law) and the Wholesale Electricity Market (WEM) Objectives.

The WEM Objectives are:

(a) to promote the economically efficient, safe and reliable production and supply of electricity and electricity related services in the South West interconnected system;

(b) to encourage competition among generators and retailers in the South West interconnected system, including by facilitating efficient entry of new competitors;

(c) to avoid discrimination in that market against particular energy options and technologies, including sustainable energy options and technologies such as those that make use of renewable resources or that reduce overall greenhouse gas emissions;

(d) to minimise the long-term cost of electricity supplied to customers from the South West interconnected system; and

(e) to encourage the taking of measures to manage the amount of electricity used and when it is used.

In undertaking the Review, we are also to have regard to the following:

- the MCE's requirement that amendments will only be supported if they contribute to the energy market objectives;
- the need for amendments to be proportionate;
- the value of stability and predictability in the energy markets regulatory regime; and
- any other AEMC Reviews, Rule changes or MCE reforms that may relate to this Review.

A copy of the MCE TOR can be found at www.aemc.gov.au.

The Review timetable

Document	Purpose	Date
Scoping Paper	Provides an outline of the scope of issues potentially relevant to the Review.	10 October 08
1st Interim Report	To consult on the AEMC's findings on what are the most material issues for the Review, and why. In some cases, also to set out preliminary thoughts on what might be required to address particular material issues.	23 December 08
Public Forums	To discuss with stakeholders the AEMC's updated views on the most material issues, following consultation. To discuss with stakeholders the AEMC's developing thinking on options for change.	1 May 09 (Mel) 8 May 09 (Per)
2nd Interim Report	To finalise the list of material issues and to consult on specific options for change.	By 30 June 09
Final Report	To present to the MCE recommendations on what changes should be made to energy market frameworks, and how they should be implemented.	30 September 09

Our Approach

In undertaking this Review, we have identified a broad range of issues which we consider relevant. These were provided in our Scoping Paper, released on 10 October 2008. The issues were based on those areas where we considered the existing arrangements presented significant risks and required action in the short to medium term (i.e. to 2020). We considered that it was not necessary to address the possible longer term impacts, as these are speculative at this stage and there is benefit in delaying action until the nature of those longer term impacts becomes clearer.

For the 1st Interim Report, we reviewed the range of issues, utilising the available information and evidence, outlining those which were considered material and priorities for recommending options for change. Specifically, as indicated above, we sought to focus on issues which required significant or complex changes to energy market frameworks; or would create additional risks, if they were not addressed quickly. We also identified the issues, having regard to:

- whether the issue or its consequences were attributable to the CPRS or eRET;
- if there was a high probability that the issue would materialise (under a demanding but credible scenario);
- if the issue materialised, it presented significant economic costs;
- if changes to energy market frameworks have the potential to make a difference; and
- those issues which would be potentially difficult to address through the existing routine Rule change governance mechanisms.

For the next phase of the Review, based on those issues which we now have concluded are material, we will recommend options for amending the existing energy market frameworks and provide our preferred approach.

Our analysis and consideration of the issues has been undertaken in consultation with a wide range of stakeholders, including through bilateral discussions, stakeholder submissions and our Review Stakeholder Advisory Committee. These consultations have been imperative to our analysis and determining our positions to this point in the Review. Since the 1st Interim Report, and following outcomes of stakeholder submissions, we have been working with our Stakeholder Review Advisory Committee, in the form of subgroups, to progress the issues considered significant for the Review, specifically seeking advice on options for change.

2.3. Further reading

There is a range of material which we have produced that is relevant to the Review, and which presents additional material to this discussion paper for stakeholders. These specific documents include:

- Scoping Paper and 1st Interim Report – Both these Reports provide an outline of the scope of issues relevant to the Review and why. The 1st Interim Report extends that analysis and provides recommendations on those issues which are considered priorities and material relating to the amendment of the existing energy market frameworks.

- Survey of Evidence on the Implications of Climate Change Policies for Energy Markets December 2008 – This paper provides an overview and collates the range of available quantitative evidence on how behaviour in energy markets might change as a result of the introduction of the CPRS and eRET.

- Role of the System Operator in Electricity and Gas Markets December 2008 – This paper provides an outline of the current role of the system operators of our energy markets. The tools available to those operators and processes to maintain a safe, secure and reliable energy network are also canvassed.

- Current Arrangements for Energy Retailing in Australia December 2008 – This paper describes, as at December 2008, the current regulatory arrangements for electricity retailing in the NEM and gas retailing in the eastern states gas markets. The paper also outlines the current arrangements for the Retailer of Last Resort schemes (RoLR) across jurisdictions.

In addition to these papers, there are also a range of other consultant reports which have provided input to our analysis during the course of the Review. These consultants reports can be accessed on our website at www.aemc.gov.au.

2.4. Related work

The following current and past AEMC Reviews have relevance to the issues covered in the Review of Energy Market Frameworks in light of Climate Change Policies, although predominantly in the context of the NEM:

- AEMC Congestion Management Review (CMR);

- Update to Comprehensive AEMC Reliability Review quantitative assessment to account for CPRS and eRET (AEMC Reliability Panel) (Reliability Panel 2008 Advice);

- AEMC Reliability Panel Comprehensive Reliability Review (CRR);
- AEMC Review of Demand Side Participation in the NEM;
- AEMC Review of the National Framework for Electricity Distribution Network Planning and Expansion;
- AEMC Reviews of the Effectiveness of Competition in Electricity and Gas Retail Markets – Victoria and South Australia;
- AEMC Review of the National Transmission Planner (NTP); and
- Reliability Panel Review of Operationalisation of the Reliability Standard.

Further information on all of these Reviews can be found at the AEMC website at www.aemc.gov.au.

A number of related reports and reviews of the energy market frameworks have recently been undertaken in Western Australia by other regulatory bodies. These include:

- Economic Regulation Authority (ERA) Annual Wholesale Electricity Market Report to the Minister of Energy – more information available at www.era.wa.gov.au; and
- Office of Energy (OoE) Electricity Retail Market Review – more information available at www.energy.wa.gov.au.

3. Issues for discussion

This chapter provides an update on the AEMC's thinking in respect of each of the issues relating to Western Australia identified in the 1st Interim Report. The AEMC hosted a separate public forum to consider issues relating to the NEM in Melbourne on 1 May 2009, and has published an associated discussion paper. For the Northern Territory, the significant issue identified was retail price regulation, which, as described below, is being considered more generally as part of the wider NEM retail issues.

This updated thinking reflects our review of the eleven written submissions made to the 1st Interim Report which addressed Western Australian issues (out of the fifty four received in total), our ongoing dialogue with our Stakeholder Advisory Committee, bilateral discussions with stakeholders and our own analysis of the issues. We particularly welcome the ongoing contribution of the Stakeholder Advisory Committee, and the opportunity to discuss these issues with the Western Australian sub-group that has been established.

The chapter is structured as follows. First, we consider in turn the issues highlighted in the 1st Interim Report as potentially significant. Second, we consider the issues highlighted in the 1st Interim Report as being capable of effective management through existing energy market frameworks. In both cases, we review our assessment of materiality in the light of submissions and further work. Where relevant, we describe the current position in developing recommendations for change.

3.1. Issues identified as material risks under existing frameworks

This section updates stakeholders on the four issues identified in the 1st Interim Report as representing significant risks to the efficiency of market outcomes under existing market frameworks following the implementation of a CPRS and eRET. The issues are:

- system operation with intermittency;
- connecting remote generation;
- efficient provision and utilisation of the transmission network; and
- retail price regulation.

Sections 3.1.1 to 3.1.4 below provide summary updates of the current positions, supplemented by more detailed reasoning and relevant context. Each sub-section ends with a list of questions for discussion.

3.1.1. System operation with intermittency

Updated position

In the 1st Interim Report we identified that the arrangements for system operation in the WEM are exhibiting signs of stress with existing relatively low levels of intermittent generation. The likely increase in intermittent generation as a result of the eRET will exacerbate these issues.

On the basis of our analysis of submissions, and further work, we remain of the view that we have appropriately characterised this issue as a material issue that requires further analysis.

We have therefore given consideration to a range of options that would facilitate more efficient balancing outcomes in the presence of significant levels of intermittent generation.

Reasoning and additional context

In the 1st Interim Report we discussed the risks associated with the current dispatch and balancing arrangements in the WEM. In particular, we noted that:

- The majority of bids and offers for balancing[1] are not priced cost reflectively, leading to potentially sub-optimal dispatch outcomes. The main responsibility for balancing is borne by a single participant, Verve Energy. The costs to Verve Energy of undertaking balancing actions are not compared to those of other generators, and Verve Energy is compensated by using a clearing price (the Marginal Cost Administered Price, or MCAP) derived from the Short-Term Energy Market (STEM), which may not reflect its underlying resource costs.

- Intermittent generators receive MCAP for "spilling" energy onto the system,[2] unlike other generators, who would receive a less advantageous price for such an unauthorised deviation from their notified position. This energy is effectively purchased by Verve Energy, as Verve Energy plant would be backed off. Verve Energy will therefore pay MCAP for generating less – which may be in excess of its avoided costs.

- At times of low demand, principally overnight, this spilling by intermittent generators might imply that conventional thermal plant should be shut down, although there are likely to be technical and security risks in doing so. The volatility of wind generation may further lead to a requirement for coal-fired plant to be backed off and replaced with more flexible gas turbines, the additional costs of which Verve Energy would not be compensated for.

- The costs of ancillary services may not be fully allocated to those parties causing them, which would lead to increasingly inefficient outcomes as additional intermittent generation resulting from the eRET leads to an increasing need for some of these services.

In response to the 1st Interim Report, stakeholders expressed a range of views:

- There was broad agreement that we had accurately identified the issues.

- Some stakeholders considered that economic dispatch and a competitive balancing regime would most effectively address the issues (if a cost benefit test for such a change was met), while another considered that a "directive based" option might be the lowest cost solution. Doubts were also expressed as to the appropriateness of competitive balancing in light of Verve Energy's significant market share.

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[1] In the WEM, the majority of energy is traded bilaterally and, as a result of this contracting activity, generators derive and submit schedules of their planned generation. Balancing refers to the ability of System Management as System Operator to modify these plant dispatch schedules to ensure that the supply of electricity matches demand in real time.

[2] In this context, "spilling" refers to the ability of wind generators to generate to the maximum extent possible, and to receive some recompense for this generation, even if this energy has not been sold through the bilateral contracting process.

- There was support for moving gate closure[3] closer to real time to enable increased wind generation forecasting accuracy, while the potential costs associated with managing conventional generation this would impose were also highlighted.

- There was support for the recovery of ancillary services costs in a targeted manner.

Options for consideration

Based on our findings, and taking into account comments made in submissions, we are giving consideration to the following potential options:

- Increasing the transparency of dispatch – ex-ante information on security related limitations on intermittent generation would be published, together with ex-post reporting of the cost of balancing actions taken and the allocation of these costs. Where costs were not fully revealed, for instance those imposed on Verve Energy, these would be estimated.

- Causer pays ancillary services – the allocation of the costs of ancillary services would be reviewed to ensure that these were most appropriately targeted. We understand that the Market Advisory Committee's Renewable Energy Generation Working Group (REGWG) intends to undertake such a review.

- Competitive balancing – Verve Energy would submit bids and offers into balancing in a manner consistent with other generators, and would be settled pay-as-bid. Potential concerns regarding market power could be addressed by an obligation that bids in balancing should be cost reflective (as currently exists in the STEM).

- Settlement at administered price – if it was considered that Verve Energy's market power could not be effectively countered, an alternative would be to settle all participants at an administered price. This could be MCAP or could be based on an assessment of generators' costs.

- Scheduling intermittent generation – intermittent generators would be required to submit a notified position and any divergence would be settled using deviation prices rather than MCAP. A fundamental element of this option would be the facilitation of more accurate resource plans for wind generators, perhaps through the production of deemed schedules from a centralised wind forecasting system or by moving gate closure closer to real time.

- Reduced gate closure time – moving gate closure closer to real time, perhaps on a rolling basis a number of hours before the relevant Trading Interval, might also act to minimise the amount of balancing actions taken, and therefore reduce the impact of the current issues.

- Cost-reflective deviation prices – deviation prices, rather than being derived from MCAP, would be calculated by reference to the cost of the balancing actions taken, either as averages or as marginal values.

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[3] Gate closure refers to the deadline for submission of Resource Plans, which for a generator include the output planned for each Trading Interval. Currently, for all Trading Intervals in a Trading Day, this deadline is 12:50pm on the Scheduling Day – the day before the Trading Day.

- Incentivised balancing costs – System Management would be incentivised to minimise balancing costs by being permitted to retain a share of any savings below a target level of balancing costs and exposed to a portion of any overrun of the target.

Some of the above options could be complementary; others are mutually exclusive. The options could be used to construct reform packages ranging from incremental change (for instance, increased transparency and causer pays ancillary services) to fundamental reform (perhaps a package containing most of the above options).

Our preference at this stage, noting the high relative cost of implementing any market reforms in the WEM, would be for the transparency of balancing costs to be increased, together with a review of the allocation of ancillary services costs. If the additional reporting were to reveal the costs of balancing to be sufficiently high and inefficiently allocated, further reform, such as the introduction of a competitive balancing regime, could be considered.

Although the MCE has requested that in this Review we consider both the NEM and WEM, in relation to the WEM we believe it is appropriate that we offer advice but do not provide detailed guidance. The relevant jurisdictional authorities will be able to consider the merits of our recommendations and will be better placed to develop any resulting implementation plans.

Questions for discussion:

- Under an option to increase the transparency of dispatch, what additional information should be released?
- Would an obligation that bids in balancing should be cost reflective (as is currently the case in the STEM) effectively counter any concerns regarding market power in a competitive balancing regime?
- Are there any options in addition to those listed that should be considered?

3.1.2. Connecting remote generation

Updated position

In the 1st Interim Report we identified that the framework for connecting new generation to the South-West Interconnected System (SWIS) is already exhibiting signs of stress, and that this is likely to be exacerbated by increasing numbers of wind generators seeking connection as a result of the eRET. The existing model of bilateral negotiation for new connections is unlikely to lead to optimal outcomes as it makes it difficult for Western Power to co-ordinate generation connection proposals and to allow for efficient sizing of future connections in the same geographic area.

On the basis of our analysis of submissions, and further work, we remain of the view that we have appropriately characterised this issue as a material issue that requires further analysis.

We are therefore considering how the framework could be best amended to ensure the efficient and timely connection of this new generation.

Reasoning and additional context

The 1st Interim Report discussed the risks associated with the current generation connection process in the SWIS. We noted the following key points:

- Western Power has already had to adopt a queuing policy for connection applications, and some developers wait up to 12 months before their application is considered.

- The "unconstrained" network planning approach employed requires complex assessments of connection applications and it can take up to 18 months for Western Power to assess an application and provide a network access offer.

- Given that wind generators are, on average, smaller and therefore more numerous than thermal generators, and tend to locate in areas remote from the existing transmission network, there is a high risk of inefficient network investment in extending the transmission system to regions in which different parties develop generation or are likely to, in the future, develop generation.

Stakeholders broadly endorsed the issues identified, and the view that the existing model of bilateral negotiation for new connections is unlikely to lead to optimal outcomes. In particular:

- The interaction between the connections process, the regulatory process and the Reserve Capacity Mechanism was highlighted. Together with the "unconstrained" planning approach these have led to long application lead times, which has resulted in, and been further exacerbated by, the presence of "speculative" applications. Changes to the administration of the queue were highlighted, while other stakeholders suggested that the current planning approach may be impeding efficient and appropriate generation investment and co-optimised transmission investment.

- In relation to concerns about the likely timeliness of connections, some stakeholders raised the possibility of compensation for delayed connections. There was a range of views as to which parties should bear the risk relating to funding of any such compensation.

- Concerns were expressed about the transparency of the connection process, and the impact of confidentiality provisions on the management of developments at the same location. Some support was given the potential implementation of a connection "hub" approach, although it was suggested that caution should be applied in attempting to replicate NEM specific solutions. It was suggested that incentives were required for Western Power to begin the connection process and develop new infrastructure ahead of firm commitments from generators, although consideration would need to be given to the funding for, and consequently also the transparency of, such a scheme.

As highlighted above, in the 1st Interim Report we suggested potentially applying models under consideration in the NEM to address the issue of co-ordinating multiple connections and optimising the size of connection assets where additional new remote generation is likely but not ready at the time of the first connection application.

As described more fully in the discussion paper for the Melbourne Public Forum, of the NEM options identified in the 1st Interim Report, we now consider that Option 2 – a network led optimal sizing option – will best address the deficiencies in the existing framework. Under this model, a new process for the provision of generation connections would be triggered by expressions of interest from one or more "foundation" generators in peripheral, renewable resource rich areas, and would involve the network business planning a connection "hub", including an economic assessment in order to identify the optimal size of the hub.

Under such a model, the risk of anticipated volumes of generation not connecting – and the asset being underutilised – would be borne in whole or in part by customers, on the basis that customers are the beneficiaries of lower overall connection costs if the risk of underutilised extension assets does not materialise. However, it may be appropriate that some risk is borne by foundation generators, as they would generally have better information on the likelihood of the risk.

We intend to consider whether this, or a similar, model could be applied in the SWIS. However, given the current deep reinforcement policy, the connection of a new generator is inextricably linked to the efficient provision and utilisation of the transmission network, and, as such, the potential models developed will impact on both issues. We therefore intend to consider connection issues in combination with solutions that would also address wider network augmentation issues, such as initiatives to signal to prospective applicants the geographical regions with the greatest and least existing capacity, and the planning approach and assumptions employed.

We have also been made aware of recent amendments to the queue management process, and intend to review these, and consider whether the prioritisation criteria could be further strengthened. However, the fundamental objective of an appropriate and sustainable connection framework would be that it would not result in a connection queue.

Questions for discussion:

- If integrated within an overall model also addressing wider network augmentation issues, would a network led optimal sizing option be an appropriate response in the SWIS to the issue of multiple and uncertain connections?
- Under such a model, would it be appropriate for the majority of the risk to be borne by customers, and how could this be best managed? Would it be necessary or appropriate to place any financial incentives on Western Power?

3.1.3. Efficient provision and utilisation of the transmission network

Updated position

In the 1st Interim Report, we considered whether the energy market frameworks would promote the efficient provision and use of the transmission network. We identified that the inability in the SWIS to manage congestion in a cost-reflective manner, and therefore evaluate the costs of this against network augmentation, can result in inefficient over-investment in the transmission network and consequent delays to the connection of new generators. The eRET is likely to exacerbate this situation by leading to a significant amount of renewable generation wishing to connect to the system at the periphery of the transmission network with low capacity factors.

On the basis of our analysis of submissions, and further work, we remain of the view that we have appropriately characterised this issue as a material issue that requires further analysis.

We are therefore considering how the framework could be best amended to ensure the efficient provision and utilisation of the transmission network.

Reasoning and additional context

The "unconstrained" planning approach to network planning employed in the SWIS has led Western Power to only connect new generators where and when the network can accommodate the full output of the connected generator(s). While this provides generators with firm access to the WEM, it can lead to inefficient over-investment in the transmission network, as it may be more efficient to allow some congestion to occur than to augment the network (i.e. if the costs of managing the congestion were less than the cost of augmentation). It also effectively "constrains off" new generators.

However, there is currently no market mechanism to allow for the management of constraints in a cost-reflective manner. In addition to the potential inefficiency of over-building, this also has consequential effects in terms of increasing the costs and lead times for new generation connections. This lack of a market mechanism also frustrates the use of more realistic planning assumptions in relation to intermittent generation, which would very rarely be operating at full output. The likely increase in low capacity factor renewable generation as a result of the eRET will exacerbate these issues.

It is important that generators are presented with signals to promote efficient locational decisions. This is especially the case when the system is being reinforced on an unconstrained basis. Such signals can be given by energy prices, use of system charges, loss factors, or simply through information provision. In the 1st Interim Report we identified that locational signals present in the SWIS should be considered in parallel with a reassessment of the planning approach employed, to ensure that locational decisions, as well as the network response to these, promote efficient outcomes.

Submissions unanimously indicated that this is a significant issue. A number of stakeholders agreed that the inability to resolve congestion in a cost-reflective manner, and therefore evaluate the costs of this against network augmentation, can result in inefficient over-investment and delays to connections. It was therefore suggested that the "unconstrained" planning approach should be reviewed as a matter of priority. There was also some agreement that it was inefficient to plan for the full output of intermittent generators. However, it was noted that potential measures to address this issue, perhaps security constrained dispatch (as in the NEM), would be complex and might require significant modification of the market design and the operation of the SWIS.

Stakeholders also generally agreed that there was a need to review the locational signals present in the SWIS, in particular network charges and loss factors. It was highlighted that these currently give only weak, and sometimes perverse, signals.

We are therefore of the view that the current "unconstrained" planning approach should be reviewed, in particular the exact planning standard used to provide firm access. We believe that consideration should also be given to methods of managing and forecasting congestion as an alternative to network reinforcement. The operation of the Reserve Capacity Mechanism in a constrained network and the impact on the regulatory process (including the extent to which this process could be streamlined) would additionally need to be assessed as part of this process.

We further consider that there would be potential for revised planning assumptions in terms of capacity factors to be utilised, and, perhaps, for generators to be presented with the choice of a firm, unconstrained connection or alternatively a non-firm connection. The next stage in our work program is therefore to develop some options in these areas, and present these in the 2nd Interim Report.

As part of this work, we intend to examine the functioning of the locational signals in the WEM, particularly network charges. A feature of some of the potential connection models could also be improved locational signals, through the release of greater information relating to the availability of network capacity on a geographical basis. This could be communicated through the Statement of Opportunities (SoO) published by the Independent Market Operator (IMO). An ultimate conclusion might be the calculation of locational capacity credits in the Reserve Capacity Mechanism.

Questions for discussion:

- Are there any other factors that need to be considered under a potential move from an "unconstrained" network planning approach?
- What are the most appropriate locational signals for generation in the SWIS?

3.1.4. Retail price regulation

Updated position

In the 1st Interim Report we identified that the existing jurisdictional electricity price regulation arrangements in Western Australia are not sufficiently flexible or adequate to enable retailers to manage and recover costs. The potentially large and volatile changes in retailer costs driven by the CPRS and eRET will exacerbate this situation.

On the basis of our analysis of submissions, and further work, we remain of the view that we have appropriately characterised this as a material issue.

We have identified retail price regulation as an issue in most jurisdictions and have therefore progressed work on analysing the materiality of the likely impact of the CPRS and eRET. We are engaging with retail price regulators and other stakeholders across all jurisdictions.

We note that since the 1st Interim Report recommendations about future retail tariffs have been made by the Office of Energy and that the Government has increased retail tariffs, although not to cost reflective levels. We anticipate that analysis of options for managing this issue through the AEMC's Review will contribute constructively to the development of the price regulation process in Western Australia.

Reasoning and additional context

Electricity retail price regulation is already a major issue in Western Australia. Contestability has yet to be introduced for the majority of customers, and regulated retail tariffs are not cost reflective. Further, there is no independent process for regular tariff reviews and retail price setting.

The January 2009 Office of Energy report on Electricity Tariff Arrangements[4] identified the tariff increases likely to be required through to 2012 to enable fully cost reflective pricing. These included provision for the anticipated costs of the introduction of the CPRS and eRET. The CPRS costs included in these forecasts were based on analysis undertaken for the Office of Energy by Frontier Economics.

On 23 February 2009 the State Government announced significant tariff increases, but these will not be sufficient to restore cost reflectivity. Verve Energy will therefore remain heavily loss making.[5]

The CPRS is likely to introduce additional cost uncertainty and volatility to electricity wholesale costs. In part, this is because the imposition of a CPRS liability on generators may not result in consistent movements in wholesale energy costs. Additionally, carbon prices here will effectively be exposed to international carbon price and exchange rate volatility.

The CPRS will also introduce additional costs for gas retailers who will be directly liable under the Scheme. These costs will need to be reflected in gas retail tariffs.

Of those stakeholders who did respond to this issue in a specifically Western Australian context, most considered the impacts of the CPRS and eRET should be factored into the tariffs. Failure to do so would increase the financial pressure on retailers and weaken the price signal to encourage changes in consumer energy usage levels and patterns.

In considering this issue at a national level, we have concentrated on whether retailers will be able to effectively hedge against or otherwise manage exposure to volatile carbon related costs. We believe that this may be difficult for the initial period of the CPRS. It is therefore plausible that regulated prices set on reasonable expectations at the time will be revealed to be inappropriate as information on carbon prices emerges.

We are undertaking more analytical work to assist our understanding of the likely effects of carbon prices and volatility on wholesale energy costs and the instruments or strategies an efficient retailer may be able to use to manage the risks created by that volatility. Our initial view, however, is that hedging instruments available to retailers (at least initially) will be limited, given that the market does not yet exist and a number of the key policy parameters required for a forward market to emerge will not be set for some time.

Price regulation and regulatory frameworks outside of Western Australia vary significantly between jurisdictions and are a matter for individual jurisdictional decision. Most of the current frameworks enable an annual price review, an annual input cost review or some form of price resetting or pass through trigger in an extreme event. We will consider further with stakeholders whether these mechanisms would provide sufficient flexibility following commencement of the CPRS.

In addition to further exploring the materiality of this issue we will consider, together with jurisdictional regulators, some principles that may be adopted to allow increased flexibility for dealing with any significant and unanticipated CPRS driven wholesale cost variation. These include the use of automatic 'flex' in the regulated price caps, and

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[4] Office of Energy, *Electricity Retail Market Review, Final Recommendations Report, Review of Electricity Tariff Arrangements*, January 2009.

[5] Losses are effectively passed from Synergy, the major retailer in the WEM, to Verve Energy, the major generator, under the terms of the Vesting Contract between the two parties.

provision for dynamic adjustments to be made if forecast errors are outside certain tolerances. We will update stakeholders on this developing work program in the 2nd Interim Report.

Questions for discussion:

- For retailers with a price capped customer base, what measures or instruments will be available to effectively manage their financial exposure to carbon related cost volatility in the first twelve months of the CPRS?
- Given the uncertainty about carbon related costs in the early years of the CPRS, how frequently should costs and retail prices be reviewed?

3.2. Issues identified as capable of being managed under existing frameworks

This section updates stakeholders on the two issues identified in the 1st Interim Report as representing risks that we considered could be appropriately managed within existing frameworks, or where changes to frameworks did not represent an effective policy lever to address the issue. The issues are:

- convergence of gas and electricity markets; and
- reliability in the short term and long term.

A summary of the updated position relating to each issue is provided in the following sub-sections.

3.2.1. Convergence of gas and electricity markets

Updated position

In the 1st Interim Report we identified a range of issues related to the convergence of electricity and gas markets in Western Australia. These included fuel switching by generators, the overall security of gas supply, and the requirement for additional gas generation to back up increased wind generation. It was identified that, due to the relatively high gas prices in Western Australia, there is unlikely to a material increase in base-load gas-fired generation. It was also determined that current levels of coal-fired generation in the SWIS and the ability of generators to utilise distillate fuel mean that the CPRS and eRET would be unlikely to exacerbate any security of supply issues.

In relation to the requirement for additional gas-fired generation to back up increased wind generation, a range of sub-issues were identified including the timing of market nominations and the relative inflexibility of pipeline capacity and gas supply. Our initial assessment was that all of these issues were not material, in that they were capable of being resolved through the existing market frameworks or were being adequately addressed by internal jurisdictional initiatives.

Several stakeholders who made submissions to the 1st Interim Report disagreed with our assessment that these issues were not material. These stakeholders considered that there was a lack of "flexible", or non-firm capacity available on the Dampier to Bunbury Natural Gas Pipeline (DBNGP), and that supply of gas was similarly inflexible, too expensive, or simply unavailable. They were concerned that these issues would adversely affect investment in new fast start gas-fired generation, and considered that this was particularly important given the likely need for increased back up generation as a result of the eRET.

In light of these submissions, we have reconsidered these issues. Capacity on the DBNGP is effectively underwritten by fully contracted, firm capacity shippers, hence the availability of flexible, non-firm capacity will continue to depend upon the commitments of such firm capacity shippers and their willingness to trade. A range of measures also exist whereby flexible capacity may be obtained by smaller shippers with a flexible demand profile, provided that the appropriate price signals are present.

In relation to the issues surrounding gas supply, the current shortage of domestic gas is likely to be mitigated as increased demand sees new gas fields opened for exploration and production, whilst expansion of Liquified Natural Gas (LNG) production may also lead to development of additional gas fields for domestic use. Other ongoing national and jurisdictional initiatives are also likely to contribute to improving issues of supply and capacity availability. These include the Gas Supply and Emergency Management Review, which is expected to examine the possibility of a gas bulletin board providing information on pipeline capacity and flows in Western Australia,[6] as well as the 15% domestic gas reservation policy and legislation designed to broaden the gas quality specifications in Western Australia. At a national level, the Short Term Trading Market (STTM) is being established, and Western Australia has the option to participate in this initiative.

We therefore continue to be of the opinion that any issues in terms of electricity and gas convergence in Western Australia are capable of being managed under the exiting market frameworks. The frameworks do not appear to pose any obstacle to the provision of new or more flexible services, provided that there is sufficient demand and adequate price signals. Given the small size of the gas market, and limited number of participants, in Western Australia, we do not believe that the introduction of more formal markets for gas supply or pipeline capacity would offer any significant benefits in terms of addressing issues highlighted by stakeholders over the existing arrangements.

We therefore do not propose to progress this issue further in the 2nd Interim Report.

3.2.2. Reliability in the short term and long term

Updated position

In the 1st Interim Report we considered generation capacity reserve levels in the short-term together with the longer term ability of the existing frameworks to support the efficient and timely delivery of new generation capacity. We concluded that the capacity market that operates in the WEM has delivered adequate generation reserves in the short-term, and appears to be well placed to attract required new investment in the longer term.

However, we identified that the introduction of the CPRS and, in particular, the eRET is likely to lead to a significant increase in the amount of renewable generation, especially wind farms, connected to the SWIS. Wind generation is intermittent, and significantly less

[6] This was a recommendation of the State Senate's report into the explosion at Varanus Island. Senate Standing Committee on Economics, *Matters relating to the gas explosion at Varanus Island, Western Australia*, December 2008.

reliance can be placed on intermittent generation being available to generate at times of peak demand. We noted that, under the WEM Rules governing the Reserve Capacity Mechanism, Capacity Credits are assigned based on average generation – and that for wind generators this is likely to represent on over-estimation of availability at peak. However, we considered, in relation to Capacity Credits, that the market frameworks in Western Australia remain robust, given that the allocation methodology for these credits is contained in the WEM Rules and that the option of proposing a rule change is open to any party.

Submissions revealed some agreement from stakeholders with our position that Capacity Credits for intermittent generators should be reviewed, but that this could be done under the existing market framework. Indeed, it was highlighted that the REGWG had already undertaken to carry out such a review, although one stakeholder indicated that additional analysis from us would be welcome. Other submissions discussed the current apparent positive discrimination in favour of intermittent generators, but also expressed concerns that any changes in this area may impact on the ability of the state to meet eRET targets.

Stakeholders additionally raised other factors that may impact upon reliability, for instance that an increase in the amount of intermittent generation prompted by the eRET will require substantial mid-merit plant to provide frequency-keeping and balancing. This is plant that would most likely be gas-fired, if sufficient gas supplies and pipeline capacity was available. Such a reliance on gas would also present issues during gas curtailments. Reliability, through the efficient entry of new generation capacity, would also be impacted by the planning and approvals processes and the availability of credit, together with the application and queuing policy and unconstrained planning approach. It was further suggested that a disconnect between the Reserve Capacity Mechanism and the planning and regulatory approvals process to support network augmentation may also impact on reliability.

Some of these issues discussed by stakeholders are covered elsewhere in this review (for instance, the impact of the connections process and network augmentation on new entry), while others do not form part of the energy market frameworks (the planning and approvals process). We further note that the allocation of Capacity Credits to intermittent generators is now under consideration by the REGWG. No new matters, not identified in the 1st Interim Report, raised were considered material enough to cause us to reconsider our provisional view that this issue is capable of being managed under the existing energy market frameworks.

We therefore do not propose to progress this issue further in the 2nd Interim Report.

4. Next steps

The next formal step in the Review process is for the AEMC to publish its 2nd Interim Report at the end of June. This will present our final analysis on the materiality of different issues, and consult on the options for change that we propose to recommend in a number of areas. It will also update stakeholders on any ongoing analysis to establish whether changes are required, and what form they should take.

The discussion at the public forum is an important opportunity for stakeholders to assist in informing the AEMC's thinking for the 2nd Interim Report. If, following the Public Forum you have particular points you wish to raise more formally with the AEMC, then we are inviting written submissions. However, given the limited time available before the 2nd Interim Report is to be published, we would appreciate any such submissions being brief and focused, and submitted no later than Monday 18 May 2009.

The address details for written submissions are:

E-mail : submissions@aemc.gov.au
or in hardcopy to:

Australian Energy Market Commission

AEMC Submissions

PO Box A2449

SYDNEY SOUTH NSW 1235

Submissions sent via e-mail/mail should reference the following: Company/Organisation name, Reference EMO 0001 - Review of Energy Market Frameworks in light of Climate Change Policies: Discussion Paper, Public Forum Perth 8 May 2009.