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February 26, 2009

Australian Energy Market Commission
AEMC Submissions
PO Box A2449
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Dear Dr John Tamblyn,

RE: Australian Energy Market Commission 1st Interim Report

Western Power welcomes the opportunity to comment on the Australian Energy Market Commission (AEMC) Review of Energy Market Frameworks in light of Climate Change Policies 1st Interim Report (AMEC Report).

The introduction of a Carbon Pollution Reduction Scheme (CPRS), in concert with a renewable energy target (RET) will have significant impacts on Australia's energy markets. This review into the impacts of these initiatives represents a significant opportunity to ensure that the market structure is aligned with climate change policies.

Western Power is responsible for operating and maintaining the electricity network in the South West Interconnected System (SWIS), a network that extends from Kalbarri in the North, to Albany in the South, and Kalgoorlie to the East. Within Western Power, the ring-fenced entity System Management operates the SWIS. The SWIS is an isolated system, separated from other Australian networks. Consequently the market and market structures have evolved to suit Western Australia's requirements.

On this matter, I would like to acknowledge the AEMC for their effort to understand and review the issues and challenges of the Wholesale Energy Market (WEM) in WA, as compared to the much larger National Electricity Market (NEM).

This submission highlights the most important issues which AEMC has raised in its Report. Western Power has put forward some of the solutions which are being discussed within the broader energy industry, many of which point to the need for an overarching State Energy Policy. The articulation of such a policy would help facilitate current renewable technologies connecting to the grid and could prepare the system to be able to accommodate the next generation of renewable and low carbon technologies.

Western Power remains committed to the delivery of sustainable energy solutions to meet the energy needs of the community. Western Australia and the WEM are uniquely placed to capture the benefits of renewable technologies, and respond to implementation issues much earlier than the NEM. Many of the issues identified in this submission are currently being discussed at a state level.

To assist WA fast track renewable connections, consideration should be given to accessing the Building Australia fund. Investment into critical infrastructure could prepare the foundations for the next generation of baseload renewable power sources.

A summary of Western Power's response to the issues articulated in the AEMC report is included below.

Issue B1: Convergence of gas and electricity markets: There is a convergence of gas and electricity markets, due to the increasing use of gas-fired generation including facilities supporting intermittent renewable generators such as wind. Whilst gas remains an important fuel for load following generation, in the long-term, gas should be viewed as an important transition fuel source to a carbon free economy with supporting infrastructure and market frameworks that encourage its use in the SWIS.

Issue B2: Generation capacity in the short-term: The disconnect between the Reserve Capacity Mechanism (RCM) and other regulatory and planning approval processes may delay the connection of new generators. There is a potential market failure in this area which could be accelerated and accentuated by new climate change policies.

Issue B3: Investing to meet reliability standards with increased use of renewables: It is expected that climate change policies will be the catalyst for significant early investment in wind generation within the SWIS. Noting the challenges associated with a strong bias to connecting large volumes of wind generation prior to other technologies being commercially proven, Western Power's view is that the policy, regulatory and market frameworks should encourage investment in other forms of renewable energy generation that, from a control perspective, is not as intermittent as wind, and facilitate the availability of gas or storage mechanisms to partner intermittent generators.

Issue B4 – System operation and intermittent generation: The encouragement of large scale intermittent generation may soon limit Western Power's ability to maintain electricity supply within technically specified levels. Distributed Generation, in conjunction with Smart Grid architecture, may address some of these issues.

Issue B5: Connecting new generators to energy networks: Adjustments to the existing queuing policy and the unconstrained philosophy which underpins network investment (augmentation) and access, without a review of the overall market structure, will yield marginal benefits at best or, in the worst case scenario, shift the burden of the core problem to administrators of the queue and System Management.

Western Power views a revision of the Reserve Capacity Mechanism which sends clearer locational signals to new generators, through the IMO Statement of Opportunities, or associated documents, as a useful step in matching new demand to new generation and the connection process.

Issue B6: Augmenting networks and managing congestion: Reviewing network augmentation and congestion problems without considering the broad parameters of a State Energy Policy will not address fundamental issues and only promote short-term solutions. Achieving the aims of climate change policies may require a new approach to network planning and connection of new generators.

Generation parks, Smart Grid technologies and the next generation of renewables may make augmentation and congestion issues less of a problem. Western Power views the aggressive trialling of new technologies and forming a State Energy Policy as important in supporting national climate change policies.

Detailed responses for B1 through to B6 are provided as an attachment to this letter.

For further information, please contact Gavin Forrest on (08) 9326 4700, or gavin.forrest@westernpower.com.au.

Yours Sincerely,

Gavin Forrest
Manager, Strategy

Detailed Responses: Issues B1-B6

Issue B1: Convergence of gas and electricity markets

B.1.1 Do you agree that the convergence of gas and electricity markets in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

This is a significant issue.

There is significant interaction between gas and electricity markets, as evidenced by the Veranus Island incident; however, the divergence of gas and electricity nomination timings restricts a more effective interaction between the two markets. The gas reliance is driven by the fact that a large proportion of the WA generation fleet is gas-fired.

The system is increasingly dependent on gas for dealing with fluctuations in wind power and experiences issues with how this impacts on the overall market.

The lack of firm access to gas by peaking plants — driven by the lack of a fluid short-term market — and limited economic incentives to build gas storage[1] and the short-term gas pipeline capacity constraints means that there are impediments for a convergence of markets which in turn reduces efficiencies and potentially security.

The gas/electricity interdependence manifests during low overnight loads (see B4). The contribution of wind power, up to 10 percent[2] of the total load, creates a reliance on gas peaking stations and physical availability of gas, to meet this immediate requirement when there is a rapid drop in wind power. The impact this creates is a major reliance on access to gas.

The merit order for "turning down" plants overnight and payment for wind farms being turned off[3] — a somewhat unique feature of the WEM — also sends market signals that further increases the commercial attractiveness for new wind farms which, in turn, increases the reliance on gas peaking plants. In this sense, it is not only the convergence of the gas and electricity markets but the market design which encourages large, new volumes of wind capacity. As this trend continues, there will be greater interaction and interdependence between gas and electricity without the markets necessarily converging or operating efficiently.

Without any changes, this problem will become exacerbated as the overnight load is growing approximately 50 MW per year, where as the peak demand (during the day) is growing by 150 MW. Thus, the market will need further capacity to meet the peak; but this will likely increase the amount of intermittent overnight load.

Furthermore, it should be noted that attempting to harmonise the short term markets of gas and electricity and the issue of creating a more fluid gas market[4] would impact on the dispatch planning required for certain coal-fired stations (see B4). With the current electricity market gate closure, System Management experiences pressure developing an adequate SWIS dispatch plan; a later gate closure would impose a significant additional burden on System Management.

[1] It should also be noted, aside from the 24 hour supply of gas held in the pipeline, storage capacity is extremely limited. This is because it would be extremely expensive to install and there is no incentive from the market to create this capacity.

[2] Current wind generation can fluctuate between 0-180 MW.

[3] The market mechanism for this process is detailed in B4.

[4] By bringing gate closures closer to real time and facilitating the trading of gas from entities with long-term contracts and pipeline capacity to gas fired peaking plants which would place a high economic value on gas during peak times (AMEC Report page 66).

While there are a number of problems with the interaction of gas and electricity market, it should be noted that, prior to 2005, the relatively cheaper price of gas made this less of an issue until recently. This is driven by a number of historical legacies, not least the original framework to bring gas from the North West Shelf to the SWIS. However, WA has significant gas reserves, and, given the low-carbon future, gas will make up a significant part of the global energy mix over the transition period away from coal.

The main issue currently is the logistics of bringing gas from the North West Shelf to the SWIS and the higher costs and availability of domestic gas because of the linkage of global LNG prices and domestic gas prices.

Western Australia is uniquely placed because of its large gas reserves and by implementing innovative solutions to address the above issues it will help achieve a number of goals, not least the incorporation of higher levels of renewables.

In terms of existing mechanisms which are looking at some of the above issues, it should be noted that the Gas Supply and Emergency Management Committee[5] will be undertaking a gas supply review which is planned to commenced in March 2009 and report in September 2009.

Further research, trials and consideration of Smart Grid applications, as well as electric cars and storage devices, are positive options for the future. If successful, these technologies could deal with many of the problems raised and could potentially facilitate a much faster uptake of renewables, especially at the DG level.

[5] For a detailed description of this Committee see the WA Energy Minister's press release: http://www mediastatements.wa.gov.au/Lists/Statements/DispForm.aspx?ID=131221

Issue B2: Generation capacity in the short-term

B2.1 Do you agree that generation capacity in the short-term in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Short-term generation capacity is a significant issue and is a consequence of the current evolution of the market structure and design which assigns a total amount of annual generation required (for a period two years in the future) and achieves this through the Reserve Capacity Mechanism.[6]

Whilst there has been positive introduction of new generation in the SWIS, there remains a disconnect between the Reserve Capacity Mechanism and the planning and regulatory approvals process to support the network augmentation, which needs to be reviewed.[7] This causes many of the issues which have been outlined in this section.

The WA WEM is considerably different to the NEM. It is a small, islanded system that traditionally has been based on coal and more recently larger supplies of natural gas. Due to this legacy, the impact of the CPRS and RET scheme will impact the WEM much earlier than the NEM.

System Management must consider above all else, system security. When also considering market efficiency, its treatment of intermittent generation becomes difficult.

From a System Management perspective, the following issues arise from the current mechanisms providing future generation capacity:

- The IMO aggregates the total future demand for the SWIS which forms the basis for the Capacity Credit process. This does not send any locational signals and can result in new generation plant being located in areas which are not the most suitable for load requirements.
- The problems with management of the queue and its relation to the assigning of capacity credits is emerging as an issue which soon could impact on future availability of generation capacity.
- There is a mismatch between the long-term market framework and the physical requirements of networks and System Management The further the underlying objectives conflict, the greater threat that medium- and short-term generation capacity may not be achievable without significant costs to the broader industry, as evidenced by the costly work on the North Country Reinforcement.

While the above issues will start to impact generation capacity in the two-year forward window, the successful solutions applied in the WEM may prove to be a model for the NEM to incorporate. As the WEM is said to be more of an "administered market" with a bilateral focus, it may be easier to implement some of the necessary changes than in the NEM because of the

[6] The Reserve Capacity Mechanism is designed to meet forward needs of the WEM and is administered by the Independent Market Operator (IMO). This is based on 10 year forward forecasts and a 2 year forward planning window.

[7] The two-year lead-time for the Reserve Capacity Process may not be adequate to ensure timely network connections. There is significant risk that the two-year capacity auction window, run by the Independent Market Operator (IMO) will restrict Western Power's ability to build the infrastructure to allow unconstrained generation connection. The network currently does not have spare capacity for any significant generation. The planning of the network responds to the additional generation requirements once the project becomes firm. This often does not provide sufficient time for completion of the connection within two years. The timing of submissions for connection applications received by Network Management varies from a few months to a few years before the reserve capacity cycle. In the case of small generators, even with a few months notice, Western Power could possibly process applications in time for the reserve capacity cycle. However, in the case of large generators, 12 to 18 months notice would be the minimum required to process an application depending on the extent of approvals required. Construction of works to connect large generators can take two to three years, or longer, depending on the scope (timeframes can be significantly longer if major transmission line work is required).

more structured nature of the Reserve Capacity Mechanism when compared to the pure energy market.

From a System Management perspective, generation capacity in the short-term (less than 2 years) is a matter of concern as the type and availability of generation plants may not be at the optimal mix and reliability. The heavy reliance on gas presents capacity issues during gas curtailments, such as the Varanus Island incident. There were several incidents of gas curtailment in 2008.

However, as noted in B1, there are large reserves of natural gas in the north west of Western Australia and it will be an important part of the low carbon future which places the SWIS in a good long-term position.

Issue B3: Investing to meet reliability standards with increased use of renewables

B.3.1 Do you agree that investing to meet reliability standards with increased use of renewables in Western Australia is not a significant issue and therefore should not be progressed further under this Review? If not, what are your reasons for reconsidering this position?

No, reliability standards with increased use of current renewable technologies are a significant issue due to the intermittency of outputs.

At present, the dominant renewable technology is wind. The commentary below is based on this dominant technology. However, the potential for storage devices and base-load renewables may make some of these issues redundant in the medium- to long-term. There are significant advances occurring in storage devices and, while problems associated with wind are discussed, the main issue is the amount of wind penetration while it is the dominant technology and the time frame in which other renewables, with more desirable system management characteristics, can be encouraged to connect to the grid.

For example, the next generation of renewables, which could include wave, biomass and geothermal power, may not have the intermittency issues that current renewables such as wind face. Accordingly, the reliability issues associated with renewables should not be viewed as a permanent problem but rather a transitional issue, assuming a State Energy Policy promotes non-intermittent renewables.

The predicted increase in the amount of intermittent generation based on the expanded RET will require substantial mid-merit plant to provide frequency-keeping and balancing. Initial indications suggest a requirement of 50 MW of backup capacity for every 100 MW of intermittent generation added to the SWIS. It would only be cost effective for this plant to be gas-fired[8], and therefore due to tight gas availability it is unlikely that this plant will become available without substantial economic incentives.

Providing these incentives may involve substantial redevelopment of the Market Rules.

At present there is approximately 1,300 MW of wind capacity seeking connection to the SWIS. Many of the issues of connecting new intermittent renewable plants (addressed specifically in B5 and B6) stem from the challenges of meeting reliability standards, dealing with augmentation and System Management issues. Fundamentally, this is a result of the methodology of allocating Capacity Credits for intermittent renewables and the philosophy of an unconstrained system which was based and designed on the basis of a different mix of base-load and intermittent generators.

Impact of Additional Intermittent Renewables. While the current level of intermittent generation has been accommodated without any major problems, the next stage of installed intermittent capacity will impose a much higher quantum of costs than has previously been the case. Thus costs and issues surrounding reliability issues are expected to grow as well.

The broader costs of load following and additional spinning reserve impose indirect costs on all participants in the market which reduces overall market efficiency. Capturing the overall cost of individual intermittent renewable proposals may make the market processes more transparent. A mechanism such as this would provide greater visibility for renewables with the lowest total cost as compared to those renewables which have the lowest direct cost. This may be important as renewable generation evolves, such as geothermal, biomass and perhaps wave power and that existing solutions do not become entrenched.

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[8] It should be noted that it is possible to use liquid fuels for some plants, however, this would be very expensive

Methodology of Assigning Capacity Credits. The methodology of assigning capacity credits to intermittent renewables such as wind farms is based on average output. This is approximately 40 percent of installed capacity. The actual firm capacity, at peak times, can be as low as around 5 percent of total capacity. This means that the market, and state as whole, has to be able to make available up to 35 percent of capacity during specific periods of the year to function. This also results in a higher balancing requirement which has an indirect cost currently to Verve Energy, state owned generator, through additional fuel use by the balancing generator and a faster rate of wear and tear of assets.

Network Access: While, on average, a wind farm will have an output of 40 percent of capacity, the planning and access requirements require the network to be able to deal with 100 percent of output. Changes to the planning criteria (i.e. not modelling for 100 percent) could be considered, although consideration would need to be given for the rare occasions when they do run at, or close, to capacity. This also relates to the options of constraint equations. However, any shift to a constrained system would impact on how the system is planned and operated.

At the distribution network level, increased penetration of distributed microgeneration (e.g. photovoltaic systems) will impact voltage profiles along the network. Western Power suggests network infrastructure upgrades will be required to facilitate multi-directional power flows (including tap changing transformers) and increased information flows (enabled by Advanced Metering Infrastructure, including smart meters).

Higher levels of distributed generation (DG), such as intermittent, household-level intermittent renewable generators, if concentrated in particular areas, could impact on overall reliability standards.

It is important to consider that the AEMC Report noted that much of the new generation entry into the market is coal fired, a good deal of the pending access queue are wind farms and gas generators in WA. Thus while the AEMC Report points to the economics of coal-fired generators, even with a carbon price, being better than gas; there are limited proposed coal-fired generators. As this is the case, the prospect of a joint wind/gas connection needs considering, since under certain circumstances, this could address some of the reliability issues which wind, by itself, causes.

As the current network access mechanism does not consider gas availability (see B1) there would be need to consider this arrangement if joint connection arrangements (the linking of wind farms and load following gas plants) came to fruition. This concept could improve the ability of the network service provider to assess the connection application and make an informed system study, reducing the need for augmentation. This approach would also need to be backed up by some sort of bilateral arrangements, if they were not part of a single entity, for market dispatch sharing arrangement.

Additional Solutions: There are also other system-related solutions which can address some of the shortcomings of the present reliability standards associated with intermittent generation.

A "smart network"[9] which allows bi-directional flow of electricity and is able to manage, amongst other matters, small scale distributed intermittent generation could be a very useful investment to deal with some of the current issues of reliability. Initially, this may be able to handle a greater level of DG solutions without disrupting the broader system functioning.

Advanced metering infrastructure is also an essential component of Western Power's "smart network" strategy, and approach to transforming the customer experience. Western Power has already deployed a range of initiatives to progress smart networks as part of its energy solutions business strategy. These include distribution automation, improved network visibility, demand side management information and control, and advanced communications and metering.

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[9] Characteristics of a smart network include improved supply reliability, interaction with consumers and markets, self-healing and therefore adaptive capability, and integration with other systems enabling greater network security. These changes will create an intelligent energy highway that will facilitate sustainable development outcomes for the future

Emerging technologies such as smart meters used by consumers in homes, commerce and industry will support change in demand and patterns of energy use that will open up greater value opportunities for customers and networks alike. Specifically, network technologies are being developed to better manage network systems and reliability of supply as more diversified forms of energy are connected to networks.

The greater use of price signals to manage the supply of diversified energies as well as the increasing demand for energy from consumers are strong drivers of innovation and research and development in the whole energy supply chain.

The spread of smart technologies, combined with improved price signals, will establish much improved flows of information between generators, networks and consumers that will open up opportunities for all stakeholders to develop energy solutions that contribute to sustainable development.

One of the key limiting factors in the further expansion of renewables is the mismatch between when energy is needed by the consumer and when it is produced. Storage of this energy, on a commercial scale, is now limited to pumping water into dams. The introduction of new storage devices, facilitated by a smart network, would address many of the current issues associated with the integration of renewables into the network and could facilitate the majority of energy actually produced from renewable sources within a few decades.

Storage technologies could include large scale batteries and electric vehicles, which, once aggregated could serve as additional peak, fast response capacity. While these are still in development stages, with the right market signals and technological advancements it is conceivable that their introduction could be accelerated.

As the quantum of investment required for network solutions and support infrastructure associated with intermittent renewables will be significant, it is worth considering a range of solutions rather than simply reverting to traditional approaches based on expanding the network.

There have been a number of studies on this issue and it should be noted by AEMC that the Independent Market Operator, in conjunction with the Office of Energy and System Management, is undertaking a similar study titled "Impacts of Intermittent Generation".

Furthermore, the Market Advisory Committee[10] Renewable Energy Working Group is presently considering a number of these issues.

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[10] For a description of the Market Advisory Committee and its membership see: http://www.imowa.com.au/market_advisory_committee.htm

Issue B4 – System operation and intermittent generation

B.4.1 Do you agree that, given an increasing amount of intermittent generation, system operation in Western Australia is a significant issue that should be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Yes, this is a significant issue and one which needs to be considered in depth

It is evident that the current impact of existing intermittent generation is having an impact on system operation. Some of the impact on the broader system includes; an accelerated decline in the life-span of older generation assets; increased load following requirements; difficulties with frequency control; and problems managing overnight wind farm output.

It should be noted that there have been a number of earlier external studies and Western Power submissions on this matter. A summary of these issues has been included in Appendix 1: *Extracts from Western Power's Submission to the Australian Senate's Select Committee on Fuel and Energy.*

The initial, large connections of intermittent renewables have, to date, been accommodated without any major problems, although the overnight role of wind and turning down of wind stations has earlier been flagged by Western Power as an emerging issue and one that could be exacerbated as future wind generation connects.

As a result of the CPRS, expanded RET and market incentives discussed below, it is anticipated that up to 2,000 MW of wind farms will seek connection to the SWIS, although not all of these applications will proceed to build stage. This will have a pronounced impact on the system operation and the market framework may need to be adapted to successfully accommodate this energy source. A number of studies and prior reviews have examined components of this issue; however, because System Management has successfully dealt with the problem in the absence of a clearer market framework, addressing the fundamental drivers of the problem has been deferred. This approach is no longer sustainable.

In preparing the specific responses to this question, it is worth noting that many of the proposals to deal with the problem quickly impact on broader aspects of market design. And while the NEM has been able to deal with a number of these issues in a relatively easier manner, in the case of the SWIS, many of the pure market responses may not be suitable.

Overnight System Management Issues/ Curtailment of Wind farms: One of the main issues noted by System Management is dealing with the high output of wind during the low load overnight periods. While the peak load is increasing at an average of around 4 percent per year (or an increase of 150 MW), the system low load is growing more slowly at around 1.5 percent per year (or an increase of 50 MW). Thus in 5 years the system low load can be expected to increase from its current value of 1,200 MW to 1,450 MW, while installed capacity will increase substantially. Currently, the amount of "industrial process-based"[11] generation coupled with high penetrations of wind generation, which can comprise up to 10 percent of total generation, is such that at times, the load rejection margin is insufficient at the load trough. This has at times led to the need to curtail wind farm generation. As intermittent generation capacity, such as wind farms, increases the need for curtailment can be expected to increase.

[11] For example, cogenerators, exist to provide steam which is used in a commercial process. The electricity is basically a by-product, but to produce the steam, the electricity must be produced. If the steam is not produced the plant which relies on it (often an extremely expensive refinery process), must shutdown. In addition to commercial reasons, the may also affect safety. Consequentially, the generator producing the steam will not respond to an instruction to turn off, and may not respond to an instruction to be curtailed past a certain point, which may, in turn, affect system security.

System Management also experiences some difficulty in ensuring security over a 24 hour time frame as the Market Rules require Verve Energy to balance the SWIS. With the current levels of "industrial process-based" generation, System Management must de-commit Verve Energy before curtailing other Participants. As much of Verve Energy's plant is coal or gas fired thermal generation it is not well suited to daily cycling. Therefore, there is a risk that the facilities may not be available for the morning peak, creating a security concern. This risk escalates with an increase in "industrial process-based" plant.

As the Market does not discriminate between generation types the quantity of "industrial process-based" generation on the SWIS may increase, leading almost inevitably to cycling of Verve Energy thermal facilities coupled with curtailment of wind generation. Neither of these measures is likely to be introduced without difficulty.

The above discussion has indicated several consequences for scheduled generators on the SWIS. The quantity of "industrial process-based" and wind generation on the SWIS has been increasing each year, and current market conditions are resulting in Verve Energy base load generation being cycled at night. As coal and gas fired thermal generators are not suited to thermal cycling, there are several short- and long-term effects.

In the short-term, cycling may cause the thermal generators to not be available at the times required the next day, which will result in increased consumption of gas and may reduce system security and reliability through insufficient generation available to meet the system peak, or insufficient gas available to meet the daily requirements.

In the long-term, thermal cycling may well result in increased wear and tear, increasing generator maintenance which may reduce the reliability of the facilities.

Market incentives. As raised in other areas of this submission, wind farms are currently provided Capacity Credits based on an average output which is approximately 40 percent of installed capacity. A number of issues may be resolved, were the assignment of Capacity Credits for intermittent generation based on the firm output level at peak periods. For wind farms this firm capacity may only be 5 percent, which in addition to relieving operational issues at peak times, would reduce the level of augmentation required. This would also vary the locational signals for wind farms, which, in the current market, tends to favour large scale wind farms situated a long way from load centres.

Another issue which must be addressed is the subsidisation of wind farms which are paid to turn off (discussed in detail in Appendix 2) during times when for system security and operational reasons they are not able to be accommodated onto the grid.

It is suggested that the methodology of the capacity credit process and the broader market design account for the broader system costs, to attract the most economic solution. For example, small scale renewable distributed generation or hybrid renewable/ non-renewable solutions, or some other format, may achieve a better market and environmental outcome. In particular, non-intermittent sources of renewable generation would resolve most issues, however are not currently the available technologies that fill this role at an economical price.

One of the important considerations to future frameworks is to encourage a market which does not favour one particular technology, as the technologies which emerge may make some of the current problems redundant. It is important that future frameworks do not end up being overly favourable to the first generation of large scale renewable plants such as wind generators to the detriment of later technologies that take a period of time to commercialise.

In the absence of clearer market frameworks System Management, who needs to consider system security above all else, is forced to make decisions that may lead to a negative environmental and an inefficient economic outcome to a greater extent than if there were no renewable plants on the system.

At present, the Market Advisory Committee[12], Renewable Energy Working Group is considering a number of these issues.

B.4.2 Would any of the options identified in this chapter improve the efficiency of the balancing process in the WEM? In particular, we would welcome views on:

- *the practicality of introducing a competitive balancing[13] regime;*

  Cost efficiency resulting from generation dispatch: this approach may provide increased cost efficiency for all generators, as there may be room for efficiencies in use of fuel. For example, some non-liquid private generators may be less expensive than the most expensive Verve Energy non-liquid generators. Implementing this may be difficult as some Verve Energy facilities are considered non-liquid, but with liquid support.

  Market cost efficiency: All things being equal, the result of a competitive balancing regime may lead to a significant cost increase for the market. At present, Verve Energy is remunerated at the average MCAP which is around $30 p/MWh. In contrast, the maximum non-liquid pay-as-bid price (Maximum STEM Price) is $286 p/MWh. The liquid pay-as-bid price is currently $463 p/MWh.

  Furthermore, the impact of such a regime on the manual dispatch processes of System Management would be problematic. The cost of introducing such a regime would also be significant.

  An alternative model could be to develop a merit order based on bid price, with settlement at a clearing price. This would remove the balancing burden from Verve Energy, and would not result in the market cost increases of the model discussed in the report. However, the administrative costs of introducing this regime would also be substantial.

  Despite the current market parameters, it would be important to ascertain the overall cost of implementation and the value of a competitive balancing regime to the system. It should be noted that the net cost/benefit may change over time and it may be better to not undertake this immediately.

- *other solutions (such as moving gate closure or introducing centralised wind forecasting) that could reduce the impacts in the balancing market of forecasting errors; and*

  Gate Closures: The fact that bilateral contracts form such a large component of the SWIS means that the day-ahead market is a very small part of the market. However, the STEM is important for sending a price signal to the broader market. Managing gate closures could be useful, but would incur a significant short term cost to the system.

  In itself, gate closures closer to real time would place additional pressure on System Management. This is because the scheduling of coal-fired generators (operating on 12 hour forward plans) and lack of fluidity in gas markets to respond (see B1) reduce options. This could mean greater costs associated with curtailment (see Appendix 2) and unscheduled changes required for system security.

  System Management is currently investigating measures to provide more time for the creation of the commitment plan.

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[12] For a description of the Market Advisory Committee and its membership see: http://www.imowa.com.au/market_advisory_committee.htm

[13] The competitive balancing regime considered in the Interim Report was for every generator to be dispatched on the basis of a "pay-as-bid" price. Thus, Verve Energy would be treated as any other Participant and have a Resource Plan.

Centralised Wind Forecasting: These measures may assist identification of variation such that the SWIS can be balanced more effectively. System Management is already in the process of developing an improved wind forecasting method.

However, with current manual dispatching systems, better wind forecasting would only enable better planning of resources, however, this would not deal with the fundamental issues associated with the ability of wind farms to spill onto the network and also be financially advantaged to be curtailed.

The Independent Market Operator, in conjunction with the Office of Energy and System Management, is undertaking a similar study titled "Impacts of Intermittent Generation".

- *the most appropriate charging regime for ancillary services in the WEM.*

  The most efficient regime would be causer pays (for ancillary services of Spinning Reserve, Load Following, & Load Rejection). However, this will not actually improve the efficiency of the balancing regime, other than possible long-term disincentives to future intermittent generators which may, in the long-run, limit the impacts of the CPRS/RET.

B.4.3 Are there any other potential models that we should consider to mitigate this issue?

- The Irish system is considered similar to the SWIS in terms of size and also because of its experience with the penetration of wind should be reviewed to ascertain how solutions can be implemented.
- Distributed Generation (DG): Encouraging DG has been one solution which has been raised as a lower cost solution with a significantly lower impact on the system than large, remote intermittent generation. It should be noted that the following description is predicated on the fact that DG may make balancing easier, rather than necessarily more efficient.

  In the SWIS, this is categorised as small generation plants less than 10 MW that are connected and fed directly onto distribution networks and have little individual impact on transmission lines. At present, there is around 50 MW of DG installed in the SWIS and once this reaches approximately 100 MW[14], it will need to be incorporated into System Management considerations for operating the market.

  As DG expands it will have an impact on operations and network planning leading to a need to change methodologies for both. If DG is rolled out in conjunction with a Smart Grid, there could be a significant overall market benefit if it avoids additional network build and augmentation. At present, DG is treated differently to larger projects in the queue and has the potential to be fast-tracked.

  Further research, trials and consideration of Smart Grid applications, as well as electric cars and storage devices, are positive options for the future. If successful, these technologies could deal with many of the problems raised and could potentially facilitate a much faster uptake of renewables, especially at the DG level. Western Power is currently investigating the practical implications of a Smart Grid and is undertaking trials. Furthermore, Western Power is also working with tertiary institutions and centres of academic excellence to consider the longer-term potential of disruptive technologies as well as electric cars and storage technologies and how this may create what Western Power has termed a "dance partner" for intermittent renewables.

[14] This is an approximate number and it should be noted that the impact of a geographical location and number and size of units that this value may be higher or lower.

Issue B5: Connecting new generators to energy networks

B.5.1 Do you agree that the connection of new generators to energy networks in Western Australia is a significant issue and therefore should be progressed further under this Review? If not, what are your reasons for reconsidering this position?

Yes, this is a significant issue but one which can not be divorced from the related matters of the increase in renewables and overall market design.

It should be noted that some of the issues have been raised and highlighted in the 2008 Annual Wholesale Electricity Market Report submitted to the Minister for Energy by the Western Australian Economic Regulation Authority.

At a high-level, the long regulatory process and disconnect between the queuing approval process and IMO Reserve Capacity Mechanism, create a substantial impediment to fast-tracking new developments, including renewables. Many of the issues discussed stem from the disconnect from the two processes.

Three of the ongoing queuing issues are listed below;

1. Long processing times, exacerbated by what can be categorised as "speculative" applications who do not expedite their applications in a timely manner. The 'first come, first served' nature of the management of the queue can be exploited by customers who perceive a market advantage in maintaining a position in the queue regardless of whether their application is at a stage where it can progress to completion;
2. Unconstrained operation of the network requires Western Power to consider all contingency events when modelling their system and augment the network to cater for such events regardless of impact duration or probability; and
3. Maintaining confidentiality of applications and their associated works which may prevent Western Power from being able to optimise augmentation scenarios by forming a combined approach, further transparency of the length of the queue would also provide a clearer signal to applicants as to available capacity and amount of competition.

1. **'First come, first served'**

The 'first come, first served' connection approach in connection may considerably hold up other forms of generation more readily able to connect while extensive augmentation is undertaken to cope with intermittent generation connected in remote rural areas.

A potential solution could be a mechanism to integrate network connection with the market allocation of capacity credits, and potential for two queues to network access: intermittent and non-intermittent to account for the different technical implications and degree of difficulty in processing these applications. In addition, there could be a formal codification of capacity credits assigned to particular regions, or an IMO-led process which disaggregates the overall allocation of capacity credits according to particular system locational requirements.

Alternatively the 'processing in pairs' including load following and wind farms, as described earlier, could improve queue management (as outlined in B3). This would not discriminate on fuel source or renewable/non-renewable status.

2. **Unconstrained Operation**

System planning models cater for 100 percent firm capacity and often require extensive augmentation for situations that have a low probability of occurring, such as N-1, N-2 contingency events to meet technical requirements. Due to the unconstrained network planning policy, and the major investment required to achieve this, a number of proposed projects take significant time to pass planning, environmental and regulatory approvals and reach practical completion. As the queue deals with applications in order, other projects are held up until there is certainty of timing and cost with the first project.

The North Country transmission access queue and associated project is an example where there is a limitation in being able to offer any Access contracts until the 330kV line to Geraldton passes the New Facilities Investment Test (NFIT) to determine the levels of capital contributions, or if they are indeed required. As this process passes through the necessary approval steps, the queue builds up, further exacerbating the modelling issues.

B.5.2 Should incentives be provided for Western Power to ensure the timely delivery of connections, and, if so, how should risk be most appropriately shared under such a scheme?

- It was noted in the Western Power's 2008 submission to the Annual Wholesale Electricity Market Review that:

  "Network Management suggests that one way of dealing with network connection delivery risk is the use of liquidated damages. However, there are concerns around the risk it imposes on the business in certain instances. Further work would be required to ensure that the use of liquidated damages does not simply result in a transfer of risk from network connection delivery to Network Management.

  For instance, if Network Management was to factor in an allowance in the customer's capital contribution to cover liquidated damages, then any over-recovery of revenue from the customer would be taken off Network Management's allowable revenue (given that Network Management's allowable revenue is fixed) resulting in a tariff decrease to other customers. Conversely, any under-recovery would be made up under the revenue cap resulting in other users picking up the shortfall via network tariffs. Network Management's huge works program over the next few years exacerbates the difficulty in providing guaranteed connection dates.

  Network Management suggests that it does not make commercial sense to take on such risk, including the potential to jeopardise other projects and customer supply (existing and growth), without commensurate compensation.

  Network Management has embarked on a balanced portfolio approach to delivery options of major capital to manage the connection risk."

B.5.3 Could improvements be made to the queue management process in Western Australia which do not conflict with the non-discrimination provision in the Wholesale Market Objectives?

It should be noted that Western Power has undertaken the following:

- Clarification of the queuing process and associated rules through a defined document which can be used by applicants (see Appendix 3)
- Several initiatives to improve the administration of the queue are being actioned:

  Western Power has been rigorously tightening up the application of the queuing rules post release of the Queuing Rules fact sheet to applicants. By making use of the bypass rule and formal requests for information Western Power is aiming to ensure that only viable candidates are present on the access queue and therefore not negatively impacting later applicants by allowing applicants at the front of the queue to delay the process.

  Western Power has begun emailing the current state of the access queue to current applicants to make queue positions transparent and highlight the large number of applicants on the queue, and which geographical regions hold the most requests for capacity. This is providing a market signal to applicants of where greatest competition is, and allows applicants to understand the likelihood of their applications being progressed in desired timeframes. While Policy prevents viewing of the access queue to non-applicants, Western Power will propose as part of our second Access Arrangement submission to allow for publication of the queue, in order to provide a market signal to prospective applicants as to geographical regions with little competition for capacity.

It is essential that Western Power is able to provide accurate system models to avoid over investment in the network triggered by customer applications. Western Power aims to change the system planning approach in order to model a realistic outcome of the access queue to ensure the most efficient investment and use of the network. Western Power is currently formulating a proposed approach to changes to system modelling, which would see a greater alignment between the IMO's predicted generation needs (as per the Statement of Opportunities), and the modelling of generation applicants in the queue. The proposed approach will be put to an industry reference group during second quarter 2009 for feedback and input by current generator applicants, the ERA, IMO and Office of Energy. If the proposed approach triggers a policy change this will be accommodated through the usual process with the ERA.

B.5.4 In a Western Australian context, would any of the models identified in Chapter A5 ensure the more efficient delivery of network connection services?

Attempting to replicate NEM specific access solutions could result in a greater number of problems for a successful functioning of the market. In this sense, a clean sheet approach may be useful rather than trying to harmonise solutions for what are two very different markets.

Issue B6: Augmenting networks and managing congestion

B.6.1 Do you agree that network augmentation in Western Australia is a significant issue that should be further progressed under this Review? If not, what are your reasons for reconsidering this position?

Yes, this is a significant issue and is inherently linked to the queuing issue discussed in depth in B5. In essence, this relates to the unconstrained nature of the network and the potential for a shift to a partially constrained network, or specific connections.

B.6.2 Would any of the options identified in this chapter improve the efficiency of network augmentation in the SWIS? In particular, we would welcome views on:

- *the practicality of including an evaluation of congestion costs in planning network augmentations;*

  A number of implications of evaluating congestion costs are related specifically to the philosophy of an unconstrained network.

  Evaluating network costs follows the eastern states approach in assessing the right time to augment at a particular transmission node. However, congestion is not static, it depends on capacity requested as to whether a particular point will be congested. In other cases the fault uprates are significant and they are caused by the characteristics of the generators. To move down the path of transmission headworks would require a way of determining in advance the augmentation costs per transmission node or nodal area that are defacto 'congestion costs'. Calculating these costs would rely on knowing where the congestion is and would require forward planning.

  This process could be assisted by the IMO and Western Power aligning the generational needs of the SWIS by major load area, as it would provide a more transparent price indicator of connecting and augmentation costs to potential generators.

- *other assumptions made as part of the planning process (such as the capacity factor of wind generation); and*

  - See B4 response which discusses assigning capacity credits to intermittent generators in depth and discusses the economics incentives which favour wind farms, from a profit making perspective, to be turned off rather than generating electricity.

- *the most appropriate locational signals for generation in the SWIS.*

  - Locational signals are difficult to deal with in the WEM because the capacity credit mechanism is skewed towards assurance of future supplies. In larger networks, traditionally network charges and loss factors provide these signals. Locational pricing is updated annually, and after major augmentation in the area, or a significant generation connection, the pricing of the nodes changes. Also, as the access costs to the network are based on an amortisation of capital costs, it is reflective of historical costs and prior structures. Shifting to a variable cost charge for network connection may improve the overall market and not discriminate against "first movers".

    In addition, it may be cheaper to connect in a more congested area if you went by charges and loss factors (they are less where the assets are being made more use of) so the locational indicators are considered to be very weak.

  - The WEM's current ability to give reliable signals may be limited. This is due to the current system modelling approach allowed to be used by Western Power within the current market/regulatory framework. This methodology does not align with the 'purpose' of generating plant (peaking/base load) in that it does not give appropriate market signals and can paint an unrealistic picture of required system augmentation.

Introduction of constraint equations may result in faster access application processing, reduced augmentation and more efficient use of the network. However, this would result in significant modification of the market design and the operation of the SWIS by System Management.

B.6.3 Are there any other potential models that we should consider to mitigate this issue?

The 'open season' approach combined with known future generation hubs would be a sound model for the future. If Western Power and the IMO could align and publish by broad geographical region the expected future generation on an annual basis, then Western Power could begin planning deep network reinforcement prior to applicants committing and improve the likelihood of works and approvals being completed on time. If this were combined with an 'open season' or gated approach for capacity on an annual queue basis to align with the SOO or other mechanism, then the number of applicants requiring use of the deep network would be ascertained, and the costs appropriately shared amongst those applicants. Once known applicants were committed to connection, the deep network project would commence construction along with any individual connection works required.

Appendix 1: Extracts from Western Power's Submission to the Australian Senate's Select Committee on Fuel and Energy

Impact of increased penetration of intermittent generation on the SWIS

Generally and unless specified, the comments provided relate to intermittent sources of supply, notably wind generation, as this is the most likely type of new renewable capacity in the short- to medium-term.

Intermittent sources of energy, such as wind, can have significant impacts on the management of an interconnected system and create additional costs and potential risks to the security and stability of supply. These costs should be identified, appropriately attributed to causers and users and efficiently recovered, with implications for the market rules, technical codes and funding arrangements.

Western Power suggests that the main impacts of increased penetration of intermittent generation will be as follows:

- **Generator dispatch:** Except during times of peak demand, intermittent unscheduled generators can only be dispatched by displacing other plant. This can be a particular problem overnight when cogeneration units and baseload plant normally supply the load. As this plant is designed for continuous operation above certain levels of output, reducing production to accommodate intermittent generation will generally increase total generating costs in the short and long-term and will result in lower efficiency of production.

- **Load Following and Frequency control:** In order to maintain system frequency, within the prescribed limits, aggregate generation and load must be kept in balance in real time. Consequently, instantaneous changes in highly variable sources of generation, such as wind, must be balanced as they occur. Being an isolated grid the SWIS is not able to alter tie line import levels to assist with frequency control. Baseload generation plant being slow acting is only partially able to carry out load following duty.

  Load following is generally achieved by maintaining additional gas turbines in reserve to provide sufficient fast response capability to accommodate the positive and negative changes in wind generator production. Given the spasmodic operational requirements of the load following plant, it runs at very low efficiency and hence high cost, compared to more regular use. Based on data from the wind farms in the SWIS, Western Power estimates that for current levels of almost 200 MW of wind capacity, around 60 MW of gas turbine capacity would be required for load following purposes.

  Load following capacity must be made available at all times. The necessary gas turbine plant also adds to the displacement of baseload generation plant overnight. This can be reduced by restricting the maximum allowable output of the windfarm but the energy foregone reduces the production of Renewable Energy Certificates. This not only impacts the economics of windfarm operation but also reduces the abatement of greenhouse gases which would otherwise be achieved.

  Energy storage could help enable higher penetration of intermittent renewable generation in a number of ways:

  1. Increasing the base load, so the need for taking generation offline overnight is reduced;

  2. Allowing energy produced at a time non-coincident with system load peaks to be stored and recovered at a time when system load is peaking; and

  3. Providing fast acting load following and frequency control through the storage and release of energy counter to the changes in intermittent renewable

generation output.

- **Other operational requirements:** Intermittent generation will also have specific requirements in order to maintain voltage control and fault recovery capabilities and to acquire and transmit the operational data needed to efficiently run the turbines and integrate them in the power system. These costs are typically borne by the project developers, but must be included in determining the overall financial impacts.
- **Network management and investment:** Locations for new plant are usually based on the availability of fuel sources, and in the case of renewable generation, these are typically in areas that have either constrained transmission capacity or are electrically "weak" (i.e. have limited ability to withstand additional power flows without producing large voltage variations or power quality disturbances). Virtually all of the areas where projects have been proposed will require significant capacity upgrades.

Given the potential magnitude of these impacts, it is vital that they are assessed through detailed system modelling. Based on the results of this, the market rules and regulatory arrangements should also be reviewed to ensure that they are consistent with and will support increased renewable penetration.

Western Power suggests that some savings could be made by assuming that intermittent generators and scheduled generators are not simultaneously operating at full output. However, this would involve the development and management of network constraints, which would require a market mechanism to determine which generator runs if both intermittent and scheduled generators were available.

Western Power suggests that the increased penetration of intermittent renewable generation will also require an increase in the level of spinning reserve. Increased wind penetration will also tend to force off conventional generation overnight, which will increase the cost of generation as conventional generators would require a restart on the next day to cover system load.

At the distribution network level, increased penetration of distributed microgeneration (e.g. photovoltaic systems) will impact voltage profiles along the network. Western Power suggests network infrastructure upgrades will be required to facilitate multi-directional power flows (including tap changing transformers) and increased information flows (enabled by Advanced Metering Infrastructure, including smart meters).

The nature and impact of these changes should be identified, appropriately attributed and efficiently recovered.

Further details can be found in the following Western Power submissions:

- Western Australian Office of Energy on the proposed RET scheme design for WA, available online at http://www.sedo.energy.wa.gov.au/pdf/ret-western_power.pdf.
- CoAG Working Group on Climate Change and Water consultation paper on the design options for an expanded national RET scheme, available online at http://www.climatechange.gov.au/renewabletarget/consultation/pubs/076westernpower.pdf

Appendix 2: Financial Impact of Wind Curtailment

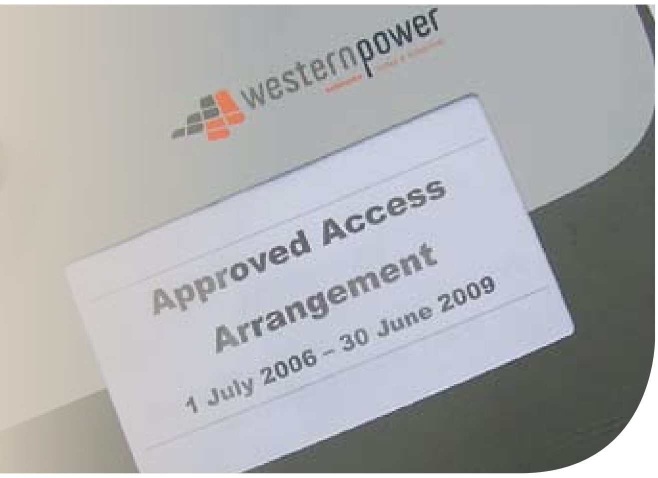
To paraphrase the Market Rules, this is due to the fact that all market participants are remunerated at their daily pay-as-bid Balancing Price for the amount of MW curtailed over the selected time period. The pay-as-bid Balancing Price for supply decrease (curtailment) is selected by the Participant for each facility, from a maximum value of the STEM Price (currently $286) to a minimum value of the Minimum STEM Price (currently - $286). Note that a negative value implies that Participants are paid to be curtailed.

The time period and quantity (curtailment level in MW) is decided by System Management. The amount of curtailment (MW) for wind farms is calculated ex-post, based on System Management's estimation of the difference between the level of curtailment (eg no more than 40 MW) and, either, the Resource Plan of the facility, or the projected output based on wind speed (at the Participant's option).

Many wind farms bid at the Minimum STEM Price. As such, they are paid for turning down. In this scenario, they are paid bilaterally for the energy, plus pay-as-bid price of $286 per MW curtailed, less RECS of $45 per MW. Compared to the standard bilateral contract price, plus the REC, the financial benefit is heavily in favour of being curtailed.

However, as wind farms are generally contracted to produce RECS, there may be some (indeterminate) long-term effects, should the wind farm be curtailed too frequently. As an example, a bilateral contract may not be renewed due to perceived insufficient benefit to the retailer.

Appendix 3: Queuing Information (Attached)



Queuing Rules: frequently asked questions

The Applications and Queuing Policy defines the requirements for processing connection applications for major customers in the South West Interconnected System (SWIS) and explains the operation of the Access Queue, including the Queuing Rules.

Why does Western Power have a connection application process?

Before connecting a generator or major load (an 'applicant') to the SWIS, Western Power must run system studies to ensure the new plant will meet guidelines for operation, including when the power system is under stress (such as a contingency event).

Processing connection applications determines the possible works, costs, timing and terms of connection to the SWIS for each applicant, as per the results of the system studies. Having a connection application process, in combination with the Queuing Rules under the Applications and Queuing Policy, allows Western Power to prioritise and process applicants in an equitable and consistent manner.

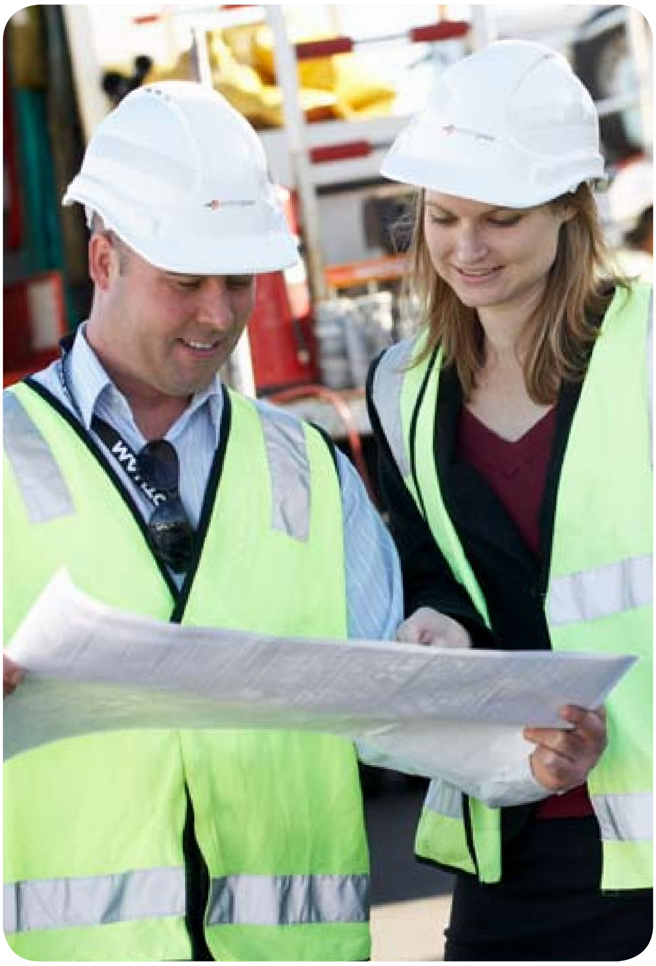
What are some of the costs associated with processing my connection application?

Each connection application attracts an application fee of $1,260 payable on submission. The estimated costs of processing a specific application and the schedule of rates for 2008/09 will be outlined with an Initial Response to the connection submission.

As a general guide, system studies for a 200 MW green-field generator currently range from $50-$60k.

Costs to generate a scope of work, estimates, approvals and draft contracts vary depending on the type of submission.

If you would like a copy of the hourly rates for 2008/09 please contact an Access Solutions Manager on **(08) 9326 6647**, or email **access.services@westernpower.com.au**.



How long does Western Power take to process my application?

One of the key objectives of the Electricity Networks Access Code 2004 is for the Network Service Provider (Western Power) to process connection applications expeditiously and diligently.

Specific timelines will vary depending on the type of application. As a general guide, connection application will take 52 weeks from submission until an Access Offer.

What are the Queuing Rules?

The Queuing Rules apply only where there are competing applicants for the same network capacity or assets, and define the priority of the applications in the queue. They are outlined in the Applications and Queuing Policy (AQP).

How do I get on the Access Queue?

Before preparing to submit an application read sections 3.2 and 3.3 of the Technical Rules for valuable information.

Complete an Access Application form from Western Power's website and submit with the connection application fee. The information that is required as part of the Access Application includes:

- Company/name details of the Applicant, the Market Entity, and the Controller
- Technical data for the generator, prime mover, exciter, motors and transformers (as applicable)
- Capacity in MW and the black start load
- Requested Connection/in-service date
- Expected length/life of operations
- Whether part of a tender process, the name of the tender and who is running it
- Any exemptions from the Technical Rules
- Single line diagram(s)
- Block diagram in IEEE format of the dynamic model of the turbine/generator (for generators)
- Dynamic model of turbine/generator shaft system in lumped element form (for generators)

Western Power will respond with an Initial Response in 20 business days on the timing and cost of processing your application.

Need more information?

Western Power can help you answer these questions during the Enquiry process until you are ready to submit a complete Access application.

What if my requirements change?

If there is a material amendment to the application and Western Power determines that a competing applicant will be materially prejudiced in terms of the likelihood, timing, cost and terms of their obtaining access, then the connection application will have priority as follows;

1. If it is possible to separate the amended connection application into a combination of the original and the supplementary connection application, the original connection application retains its priority and the supplementary connection application has priority according to the time of amendment, or
2. The amended connection application has priority from the date of amendment.

Western Power will discuss with you the available options for how to treat your amended application.

Available queuing position options for an increase in capacity are demonstrated in the following example:

Case Example

Access Queue	Capacity	Place in Queue
Original application	100 MW	1st
Applicant A	X MW	2nd
Applicant B	X MW	3rd

If you were to amend application to 150 MW at this point:

Option 1:

Access Queue	Capacity	Place in Queue
Original application	100 MW	1st
Applicant A	X MW	2nd
Applicant B	X MW	3rd
New application	50 MW	4th

Option 2:

Access Queue	Capacity	Place in Queue
Applicant A	X MW	1st
Applicant B	X MW	2nd
New application	150 MW	3rd

Some examples of what Western Power will consider a material amendment include changes to;

- Technical data particularly to do with the dynamic model, output values and impedance values
- Capacity by > ± 5 %*
- Connection or in-service date
- Physical location of connection point (such that the electrical point of connection changes) or
- Other changes to scope which would result in revising or redoing steps in the application process.

* The applicant may request 2 applications; the !st application for the originally requested sent out capacity and a 2nd application with a priority date for the increased capacity amount.

What is a bypass?

Bypassing refers to re-prioritising or changing the order of applications in the Access Queue.

Western Power will bypass applications in the Access Queue to the extent necessary to better achieve a code objective. This includes bypassing an applicant in order to fulfil our obligation to process applications expeditiously and diligently, and to ensure economic and efficient investment in, use, and operation of the network.

What could cause my application to be bypassed?

An applicant may be bypassed for conducting any of the following when a competing applicant(s) is present;

- Not progressing to an Access Offer for reasons of seeking financial, environmental, government or other approvals. Generally Western Power will allow for a period of 30 business days for applicants to gain approvals
- Undergoing arbitration of an access dispute
- Failing to use reasonable endeavours to progress an application
- Where an application is frivolous, vexatious or not made in good faith.

A bypass may also occur when a latter applicant is able to proceed to an Access Offer and your application cannot proceed as quickly (if you cannot proceed at all you will be withdrawn).

What happens if my application is bypassed?

Western Power applies the 'bypass test' in order to determine whether bypassing an applicant will achieve the code objectives defined above.

When Western Power determines the bypass test has been satisfied a notice will be sent stating why, and giving the applicant an opportunity to show why they should not be bypassed. At least 20 business days after sending the notice Western Power will make a fresh determination.

If, as a former applicant, you are deemed to be bypassed, any latter applicant(s) deemed to be able to progress to an Access Offer before you, will be given earlier priority in the Access Queue than your application.

A change in priority in the queue may result in a revision to system studies or the scope of work allocated to the application.

What is a withdrawn application?

Withdrawn applications are no longer on the Access Queue.

What could cause my application to be withdrawn?

Occasionally Western Power will have reason to send an applicant a notice that they are withdrawn from the Access Queue. This may include;

- Where a formal request for information has not been fulfilled in 20 business days
- Where a request to correct or resubmit modelling data has not been fulfilled within 20 business days. Generally Western Power will withdraw an application after 3 repeat submissions of erroneous modelling data
- Where an application has been in the queue for more than 12 months ('dormant' application) and is judged by Western Power as being unlikely to proceed to an Access Offer
- Where an applicant fails to accept an Access Offer or negotiate an amended Offer in 30 business days
- Where an applicant cannot satisfy Western Power's request for reasonable proof of intent that they will be or intend to be a market participant at the connection date; or
- Upon request by the applicant.

What happens if my application is deemed 'dormant'?

When Western Power determines your application;

- Has been on the queue for greater than 12 months;
- A competing applicant has latter priority in the queue; and
- It has been deemed unlikely your application will proceed to an Access Offer;

A notice will be sent stating the above in detail, and giving the applicant an opportunity to show why they should not be withdrawn. At least 30 business days after sending the notice Western Power will make a fresh determination on whether to withdraw the application.

What happens if my application is withdrawn?

After being withdrawn, if you wish to continue to pursue an application for connection to the network the following are some of the options available to you:

- **Submit an enquiry** – enquiries are not subject to the Queuing Rules, allowing flexibility to pursue different options until a complete access application is able to be submitted;
- **Resubmit your application** – the application will be assigned priority from the date the application is resubmitted in full; or
- **Resubmit an amended application** – the amended application will be assigned priority from the date the amended application is submitted in full.

What's the difference between a Study Proposal, an Access Proposal and an Access Offer?

A Study Proposal is sent to an applicant with the Initial Response, 20 business days after submitting an application.

The Study Proposal outlines the cost and timing to process an application through to an Offer.

An Access Proposal is sent to an applicant after system studies have revealed the extent of any network augmentation required for successful connection to the SWIS. The Proposal outlines a high level scope of work, timing, costs to complete the works, and the expected annual access charges (tariffs). After acceptance of a Proposal the applicant will move to signing an Access Offer.

The Access Offer is the contract that governs connection to the SWIS and the transfer of electricity at the connection point. If any works are required to be undertaken by Western Power for connection, an Interconnection Works Contract (IWC) will need to be signed by the applicant as well.

What do I need to have in place before I sign an Access Offer?

Western Power requests that applicants have finalised;

- All approvals; government, development, environmental and financial
- The Engineering/Procurement/Construction/Management contract, or at least confirmed procurement of all major plant and delivery
- Procurement of the development site, including line routes or substation sites
- Granting of a generating licence from the ERA (where required);
- Be ready to submit an application to the IMO for receipt of capacity credits (where required) and
- Be, or intend to be a market participant.

What if I disagree with the queuing rules?

The Applications and Queuing Policy is approved by the Economic Regulation Authority. If a dispute arises over the implementation of the queuing rules that is not able to be resolved with Western Power, you can contact the Energy Ombudsman, **www.ombudsman.wa.gov.au**.

Further Information

For more information on the Applications and Queuing Policy, Technical Rules or the Access Arrangement please refer to the Western Power website at **www.westernpower.com.au**, send an email to **access.services@westernpower.com.au** or contact a Solutions Manager - Access on **(08) 9326 6647.**