Electricity Network Regulation
Productivity Commission
GPO Box 1428
Canberra City ACT 26001

By email to: electricity@pc.gov.au

16 March 2012

Dear Secretariat,

Electricity Network Regulation Submission

International Power-GDF Suez Australia (IPRA) appreciates the opportunity to comment on the issues paper on electricity network regulation.

IPRA supports an effective and competitive energy trading arrangement which is underpinned by private investment. In this submission we have summarised a number of arguments that we have advanced in the last twelve months in response to major reviews of transmission, demand side participation and the draft Energy White Paper, and which we believe are pertinent to the Commission's current consideration.

Yours sincerely,

Stephen Orr
Strategy and Regulation Director

IPRA Submission to Productivity Commission

Electricity Network Regulation Issues Paper

16 April 2012

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1 Introduction

International Power-GDF Suez Australia (IPRA) welcomes the opportunity to comment on the Productivity Commission's issues paper on electricity network regulation.

International Power entered the Australian energy industry in 1996 and has grown to become one of the country's largest private energy generators, with assets in Victoria, South Australia and Western Australia. The International Power portfolio also includes Simply Energy, a significant second-tier gas and electricity retail business. The business has invested around A$5 billion in the Australian energy market.

In February 2011, International Power combined with the energy assets of GDF SUEZ to form a world leader in independent power generation, with more than 72,360 MW of power generation worldwide and further 15,500 GW under construction.

As well as power generation, GDF SUEZ is also active in closely-linked businesses including LNG terminals, gas distribution, electricity and gas retailing, energy services and water desalination.

In Australia, IPRA employs 920 employees, generates 12 per cent of the energy in the National Electricity Market (NEM) and retails electricity and gas to 300,000 accounts in Victoria, South Australia and (recently) New South Wales through its retail business Simply Energy.

2 General comments

IPRA acknowledges that this paper largely focuses on network regulation issues that are not at the core of its merchant generation and retail businesses. However, a number of the questions raised by the Productivity Commission ("the Commission") relate to generic aspects of regulation in the electricity sector, and a number, such as those associated with the effectiveness of regulatory arrangements for interconnectors, have much in common with core issues for generation and retail being addressed in a number of reviews currently underway.

Three such reviews to which IPRA has made significant submissions are the Federal Government's draft Energy White Paper (EWP), the AEMC's Transmission Frameworks Review (TFR) and the AEMC's Power of Choice consultation on demand side management.

In its submission to the draft EWP, IPRA raised the investment challenge facing the industry and how this is affected by the current NEM design. In its submission to the TFR, IPRA proposed an alternative model for transmission access arrangements in the NEM. In its submission to the Power of Choice consultation IPRA supported improvements in management of demand.

We repeat some of our key arguments here as they are directly relevant to many of the issues raised by the Commission.

IPRA's comments will focus on three key themes in the Commission's issues paper:

- Benchmarking;
- Demand side management; and

- Interconnector issues and the role of generators.

We have structured our submission around these broad themes rather than responding to each question raised. For simplicity we have extracted the questions from the Commission's paper and referenced each with a footnote where we have referred to a question or group of questions.

3 Benchmarking

Benchmarking can only be considered as a "next best" option where there is limited or no competition in the network sector. While we acknowledge that competition in many aspects of network provision is ultimately impractical or inefficient, to the extent that competition could be introduced into some aspects of network business, this is likely to yield greater efficiencies than benchmarking could. Benchmarking can be useful to inform the regulatory process but is no surrogate for genuine competition.

We see two possible areas where competition or a form of competition could impact on network businesses. Firstly, in Victoria where there are five distribution businesses, it should be possible for a regulator use the cost estimates submitted by each distributor to arrive at what is the likely true cost of the investment required, notwithstanding the differences between distribution networks.

Secondly, there is a very real sense in which the emergence of alternate technologies such as distributed generation, storage and smart grid technology, could provide the regulator with a competitive alternative against which to benchmark the costs of conventional network investments.

We acknowledge that information asymmetry may erode the ability of a regulator to make any practical use of benchmark data.

4 Demand side management

IPRA strongly supports a focus on delivering customer choice and achieving a "two sided market" as was originally envisaged for the NEM. However, in order for customers to have an incentive to respond, several elements must be in place[1].

Customers must have:

- An appropriate level of knowledge to choose or be able to access a service that can provide advice or manage a demand side response on their behalf;
- A pricing framework that incentivises demand response;

[1] *Commission Questions: What role could demand management play in reducing peak demand, how would it work, how much would it cost, and what network savings would be experienced? In which parts of the network are cost savings most likely and why?*

What are the regulatory and other obstacles to demand management or other approaches that give consumers choice? How are these changing?

How do network providers model and make financial decisions about the impact of peak demand growth on network adequacy, including identification of the most cost-effective network investment solution (for a given reliability standard)?

What is the evidence about the effectiveness and customer acceptance of demand management provided by the various trials and experiments in Australia and internationally? What factors have inhibited the use of already installed smart meters?

- Effective and timely information to facilitate efficient economic decisions;
- A clear and simple way of identifying benefits arising (ie, cost savings/ increases); and
- Access to appropriate technology to facilitate a response.

The NEM currently operates as a one sided market, where generators are obliged to offer their generation into the market but loads are essentially absent from the competitive process.

The current tariffs/contracts for small customers contribute to inefficient use of networks and inefficient investment, with their focus on non-cost reflective energy-based structures rewarding poor network utilisation and penalising efficient network users.

IPRA supports the timely provision of cost reflective network charges as a matter of priority. The opaque nature of electricity retail pricing structures could be overcome through greater transparency and itemisation of the actual network costs in billing information. This would give greater information to consumers on how the nature of their usage influences network charges and costs.

Any rights to information and benefits of a demand side management capability must rest with the customer; however, these may be re-assigned to other parties by agreement and for a fee.

The use of the internet for delivery of market pricing information in real time and control of appliances need to be examined and, where effective, facilitated.

Any potential scheme designs should be as simple as possible with transparent information flows.

Technology is needed to enable demand side management. Unfortunately current "smart" meters are being implemented in a "dumb way" and do not provide price information to the consumer nor are they able to control appliances on the customer's behalf. Showcase applications are needed to show the way forward and deliver real benefits to consumers.

Expansion of smart meters to include a "soft fusing" arrangement to enable customers load to be limited to an agreed maximum demand (tariff or contract) should be considered, but control of this capability is problematic. Control by networks may facilitate improved network utilisation, but requires a contract between the end consumer and the network which does not currently exist directly. Control at the direction of the consumer's retailer is more aligned to the pricing philosophy of the electricity market, with cost-reflective network pricing applied through the retailer.

Before effective and practical demand side management arrangements are implemented, a public education campaign would be required to give customers the basic information on what they may benefit and some of the reasons behind it.

5 Interconnector issues and the role of generators

Transmission and interconnectors are a key element of the energy supply chain and efficient transmission frameworks will contribute to enhancing energy sector productivity and competitiveness.

The Commission's issues paper refers to the importance of the Transmission Frameworks Review (TFR) being conducted by the AEMC. IPRA has provided a submission to the AEMC on the TFR which includes a detailed and integrated proposal for improving the transmission framework itself.

Set out below is a brief summary of the key elements of our proposal:

- The NEM Rules relating to network connection and access are ambiguous and have not been applied consistently across the NEM regions. The original intent of the Rules was to protect generator network access and preserve overall transmission capability, but this has not been achieved to date.
- Locational signals for new investment are very weak and poorly timed and generators are exposed to commercial risks with no effective means of mitigation. Generators are currently unable to choose their preferred level of access, and transmission access within regions and between regions varies over time. There is neither protection from degraded access, nor any compensation if access degrades.
- The imminent increase in new connections arising out of clean energy policy will expose these limitations in existing arrangements.
- IPRA's proposal, set out in detail in its submission to the AEMC's TFR, provides a means for investors in generation plant to manage the risks associated with transmission access, and provides a means for the TNSPs to maintain existing connections and establish new connections.
- Generators should be able to choose their level of network access defined to a set of agreed planning principles. Generators pay for the required network augmentations, and transmission network service providers (TNSPs) ensure their access is maintained.
- The introduction of congestion pricing to remove incentives for the practice, pejoratively described as "disorderly bidding", which leads to inefficiencies in the market.
    - Under the current NEM dispatch arrangements, participants who are impacted by a transmission constraint can be incentivised to make offers at the floor price ($-1000 per MWh), resulting in inefficient dispatch. This is also noted in the Draft EWP in a different context.
    - An arrangement known as Shared Access Congestion Pricing (SACP) exposes constrained generators to their local node price, thus removing their incentive to bid below their short run marginal price. This is discussed in more detail in the AEMC TFR consultation document.
- Introduction of a single body responsible for determining efficient interconnector capability. TNSPs would then be required to implement interconnector capability in the most economic manner. Any new connections would not be permitted to reduce interconnector capability.

The NEM and the external environment have evolved to the point where we now see the progressively increasing impact of transmission issues on generator connection, network access, congestion and inter-regional trading. These issues have become even more critical

as the market attempts to respond to the transformational challenges arising from the shift to clean energy.

The Commission's issues paper also gives prominence to the issue of interconnectors in the NEM.

AEMO's National Transmission Network Development Plan (NTNDP) has shown that large investment in an interconnector back-bone running the length of the NEM is not economic.

The ability to trade power contracts between regions with confidence is a highly desirable outcome for the NEM. To do so currently requires a market participant to bear significant inter-regional price risk. A large component of this price risk is related to transmission, over which generators and retailers have very little or no control.

Price differences between regions are inevitable and economic due to differences in generation technologies and fuel sources. Price differences themselves are not a problem, but rather their highly volatile nature. A major component of this volatility is introduced by transmission congestion – both within regions and between regions.

This overall price difference volatility is a deterrent to inter-regional trading. A generator or retailer that seeks to contract in a region outside its own faces significant risks if it is left unable to defend these contracts in the event of transmission congestion or inter-regional separation.

The settlement residue auction (SRA) process for interconnectors is intended to provide a mechanism to manage this risk. However it is unable to do this effectively because the auctions are linked to the physical availability of interconnectors with highly variable capability. Unpredicted changes in the physical availability of interconnectors therefore undermine the ability of these products to adequately manage inter-regional trading risk.

We offer the following examples to demonstrate some of the practical frustrations experienced with interconnectors in the NEM. These relate to the steady erosion of inter-regional capacity between Victoria and South Australia, and the erosion of some generators' access following the introduction of Basslink.

All the above considered, IPRA supports rational interconnector investment that is underpinned by sound economic cost-benefit analyses. Any move to change the basis of assessment of interconnection delivers yet another change in regulation that undermines the basis of investment decision-making and risk, and potentially undermines investments made for the specific purpose of responding to the current investment signals.

We recommend that the Commission "tread carefully" with any proposal to modify the basis of interconnection investment to artificially increase the level of interconnection beyond that which is truly economic. Preservation of interconnection capability in the face of new connections and network augmentation is, however, quite another matter.

5.1 Heywood Interconnector capacity and constraints in South-East South Australia

IPRA has observed a decrease in the Heywood interconnection capacity, particularly for flows from Victoria to South Australia. This downward trend has become pronounced over the last

several years and has coincided with a large increase in wind generation in South Australia, and the commissioning of the South East to Mayura to Snuggery line in South Australia (December 2007).

This vanishing Heywood interconnector capability is highlighted by Figure 1 which shows the average quarterly limits on the interconnector from 1999 to the 2011. The export limit is shown by the red line and the downward trend is obvious.

The South East 132kV transmission system in South Australia supplies loads in the South East region of South Australia and has generation at Snuggery (gas turbines and a distribution connected wind farm at Canunda), Lake Bonney (wind farms) and Ladbroke Grove (gas turbines).

The gas turbines at Snuggery (78MW) were installed in 1980, the gas turbines at Ladbroke Grove (86MW) in 2001, Lake Bonney Stage 1 wind farm (81MW) and the Canunda wind farm (46MW) in 2005, Lake Bonney Stage 2 wind farm (159MW) in 2008 and Lake Bonney Stage 3 wind farm (39MW) in 2010.

From 1980 to 2001, there was 78MW of generation in the South East 132 kV transmission system in South Australia. By 2008, this has increased to over 400MW and is now 489MW with the increase almost exclusively due to new wind projects.

Load in the area has not grown as rapidly and this has created conditions where South East generation is frequently greater than local load and hence is exported via the transmission network to supply demand more widely in South Australia and Victoria.

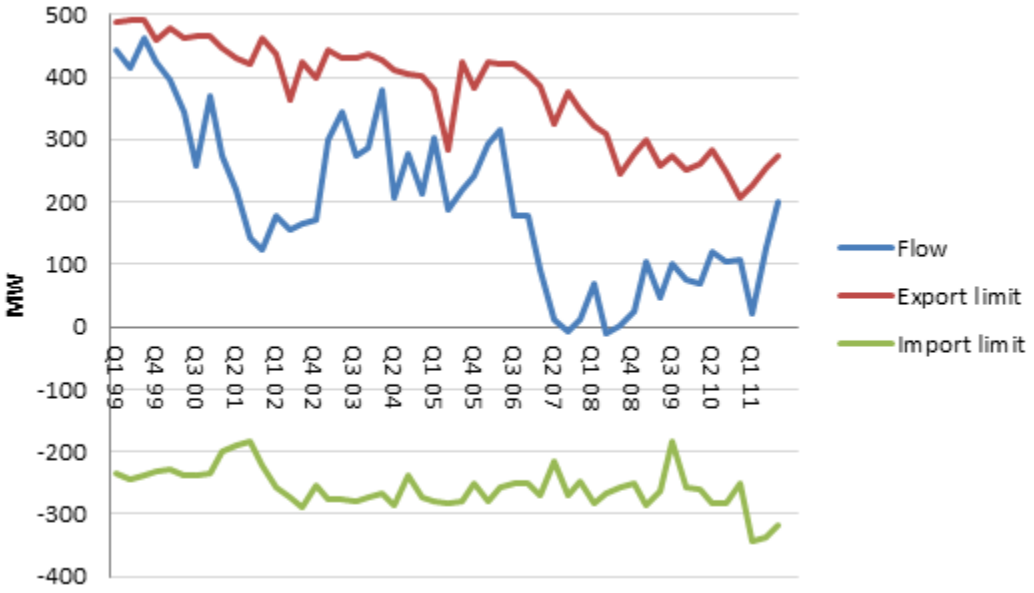
These changed circumstances have created transmission congestion problems which need to be managed by the Australian Energy Market Operator (AEMO), and impact on other generation in the area and also the Heywood interconnector between Victoria and South Australia.

Assuming system normal conditions, when power is flowing from Victoria into South Australia on the Heywood interconnector, the overloading of a South East 275/132 kV transformer would occur if the second transformer under conditions of high import, high load and low 132kV connected generation.

Conversely, when power is flowing in the opposite direction into Victoria on the Heywood interconnector, the level of generation in the South East 132 kV sub-network is occasionally constrained at times of low load and high wind to ensure operation within thermal limits of South East 275/132 kV transformers.

South East 275/132kV transformer for the loss (trip) of the other South East 275/132 kV transformer has bound for an average of 56 hours per month. This problem has been acknowledged by both ElectraNet and AEMO.

Figure 1: Heywood average quarterly interconnector limits (1999-2011)



Since December 2007, the main constraint equation related to overloading a

As the company with full commercial responsibility for the Snuggery Power Station for over a decade, IPRA offers this case study as an example of the difficulty it has experienced in relation to transmission access for Snuggery under the current transmission frameworks, where access is rationed without compensation as a result of congestion.

This example highlights how new investments in generation and transmission undermined the level of transmission access for generators in South East in South Australia, and also degraded the interconnection between Victoria and South Australia. Interconnectors give customers the ability to access lower cost-generation in neighbouring regions and reductions to existing interconnector capacity detracts from this.

This example has led IPRA to call for the Rules to ensure changes to generation or transmission topology do not result in degraded interconnector capacity as an indirect consequence (Refer to section 6 above).

5.2 Basslink

At the time of the connection of Basslink, it was acknowledged that a better economic result would have been to connect to the mainland near Western Port instead of the Latrobe Valley. However there were no effective signals to achieve this and the proponents of Basslink took the least cost route. The TNSP used a loose interpretation of the open access regime (undefined in the Rules) to facilitate this connection.

At times of high Victorian demand when Loy Yang B, Loy Yang A and Valley Power are generating and Basslink is flowing into Victoria, transmission congestion arises and access is rationed to manage congestion. To compound the problem, the current bidding arrangements for scheduled market network services can be used in a manner which gives Basslink dispatch priority over some Victorian generation.

A rule change has been lodged with the AEMC recently by IPRA seeking to prevent Basslink from exploiting a loophole in the current Rules.

This example highlights how transmission access has been degraded for incumbent Victorian generators following the commissioning of a transmission asset designated as a Market Network Service Provider but now operating as a regulated interconnector.

6 Glossary

Abbreviation	Description
AEMC	Australian Energy Market Commission
AEMO	Australian Energy Market Operator
AER	Australian Energy Regulator
CO_2	Carbon Dioxide
CPI	Consumer Price Index
CPT	Cumulative Price Threshold
DPRG	Dispatch and Pricing Reference Group
EOM	Energy Only Market
ETS	Emission Trading Scheme
FCAS	Frequency Control Ancillary Service
FIT	Feed In Tariff
GFC	Global Financial Crisis
IPRA	International Power-GDF Suez Australia
LNG	Liquid Natural Gas
LRMC	Long Run Marginal Cost
MPC	Market Price Cap
MWh	Mega Watt Hours
NEL	National Electricity Law
NEM	National Electricity Market
NEO	National Electricity Objective
NER	National Electricity Regulation
NSP	Network Service Provider
O&M	Operation and Maintenance
PGG	Private Generator Group
RET	Renewable Energy Target
RIT-T	Regulatory Investment Test - Transmission
ROC	Renewable Obligation Certificate (UK)
RRP	Regional Reference Price
SACP	Shared Access Congestion Pricing
SCER	Standing Council on Energy and Resources
SRMC	Short run marginal cost
STTM	Short Term Trading Market
TFR	Transmission Frameworks Review
TNSP	Transmission Network Service Provider

TUOS	Transmission Use of System
VEET	Victorian Energy Efficiency target