Parsons Brinckerhoff Associates

Contracted Capacity Rights

Prepared for

ECONOMIC REGULATION AUTHORITY
OF
WESTERN AUSTRALIA

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EXECUTIVE SUMMARY

The purpose of this report is to provide recommendations to the Economic Regulation Authority of Western Australia with regard to 'contracted capacity rights' under third party open access regimes.

Contracted Capacity

A key concern is Western Power's proposal to unilaterally reduce contracted capacity. This proposal is contained in Western Power's *Electricity Transfer Access Contract (ETAC)*.

PB finds that the design of the *Western Australia Access Code 2004* is similar to that of the access codes in force in the United Kingdom, New Zealand and other Australian States.

PB observes that in the Access Code 'contracted capacity' refers to 'connection point capacity' only. This is clear from the definitions contained in the Access Code.

We consider that when the Access Code was drafted it was envisaged that generators and users would have an explicit contractual right to connection point capacity.

Indeed in Western Australia, the bilateral contract approach taken in the Wholesale Electricity Market makes it an imperative for Generators to hold a firm connection point contracted capacity.

In other jurisdictions, users invariably have a right to connection point contracted capacity and we consider that this practice should be adopted in Western Australia consistent with sound commercial practice.

However, we consider that the designers of the Western Australia Access Code did not envisage that such a right would extend to the shared transmission network - such contractual rights are not a feature of the access regimes in other jurisdictions due to technical constraints.

Accordingly, PB makes the following recommendations:

- Western Power's ETAC should not contain a right to unilaterally decrease contracted capacity;
- The question of who should determine the maximum contracted demand in the first instance is resolved by means of a good faith negotiation between Western Power and a generator or user in line with sound commercial practice;
- Western Power's approach to subsequent capacity adjustments should recognise that Generators have a need for firm capacity and users are faced with commercial pressures and should have a right of veto over unilateral adjustments proposed by Western Power; and
- Western Power should have a right to recover fair and reasonable costs included in connection agreements, consistent with the practice in other jurisdictions - such a right is supported by the Access Code.

Trading of Contracted Capacity

Western Power's ETAC contains a provision for transfer of connection point capacity in accordance with Section 5 of the Access Code.

PB finds that the transfer of connection point contracted capacity is supported under the relocation and transfer provisions of the Access Code. This mechanism is progressive in terms of economic efficiency measures, and advantageous to users. It is not an explicit feature of the Access Code in operation in other jurisdictions but that is not to say that this is a good reason to argue against this approach.

PB considers that the transfer and relocation policy should be fully exploited in the interests of economic efficiency as there are minimal technical difficulties in doing so.

PB observes that Western Power has expressed a concern regarding the possible introduction of market-based trading of 'shared' network contracted capacity, however it does not appear that such a scheme was envisaged by designers at the time the Access Code was developed. There are no international precedents whereby users have rights to shared network capacity.

PB makes the following recommendations:

- Exploit the transfer and relocation policies of the Access Code in relation to connection point capacity in the interests of economic efficiency;

- Ensure that Western Power specify clearly in the proposed ETAC how they propose to facilitate the transfer of contracted connection capacity between generators and users in order to maximise the economic benefits of all grid investment consistent with the role of a facilitator of access; and

- The ERA role should include monitoring of the effectiveness of the transfer and relocation policy to ensure that Western Power is meeting their obligations.

Anti-Competitive Behaviour

Western Power has expressed concerns over anti-competitive behaviour related to trading of capacity rights, i.e. users pricing capacity at market premiums and withholding capacity from rivals for competitive advantage.

Western Power has proposed to hold a unilateral right to reduce contracted capacity to circumvent such anti-competitive dealings.

PB concurs with Western Power that such anti-competitive behaviour is a possibility. However, we consider that anti-competitive practices employed in the UK are preferable to reduction of contracted capacity by a Service Provider on a unilateral basis.

PB recommends that the ERA consider the introduction of a capacity rights trading approach similar to that established in the United Kingdom, extended to encompass users as well as generators. Under such a capacity transfer scheme, Western Power would determine an 'exchange rate' applicable to the transfer (trade) of connection capacity.

In relation to withholding of capacity, the UK Access Contract requires generators and users to provide regular maximum demand forecasts to the Service Provider. Should the Service Provider disagree with the forecasts, a dispute resolution process is available whereby the Regulator can arbitrate over the reasonable needs of the generator or user. This practice mitigates anti-competitive capacity withholding.

PB considers that both approaches would require amendments to the Western Australia Access Code. According to the assessed urgency of the problem of anti-competitive behaviour, such amendments could be made at a time convenient to the ERA, or in the event such anti-competitive behaviour emerged as a significant problem.

1. INTRODUCTION

Parsons Brinckerhoff Associates ("PB") has prepared this report at the request of the Economic Regulation Authority of Western Australia ("ERA") who wishes PB to use its general knowledge of the electricity industry and readily available information to provide recommendations with regard to 'contracted capacity rights' under third party open access regimes.

1.1 BACKGROUND

The *Electricity Networks Access Code 2004* ("Access Code") was approved by the Minister for Energy for the State of Western Australia on 30 November 2004 under part 8 of the *Electricity Act 2004*.

The Access Code establishes a framework for third party access to electricity transmission and distribution networks with the objective of promoting the economically efficient investment in, and operation and use of, networks and services of networks in Western Australia in order to promote competition in markets upstream and downstream of the networks.

The Access Code aims to be, where appropriate given conditions prevailing in Western Australia:

- consistent with the *National Electricity Rules* and *National Gas Code*; and
- capable of certification as an effective access regime under Part IIIA of the *Trade Practices Act 1974*.

PB understands that the ERA wishes PB to address the following issues in relation to contracted capacity rights:

- Review and comment on the reasonableness, and appropriateness of assigning capacity rights in the South West Interconnected System ("SWIN");
- Provide advice on the rights of access seekers with regard to the transfer of energy through the electricity network; given the technical constraints of the network;
- Review and comment on Western Power's views on the disadvantages of a capacity rights regime in Western Australia;
- The tradability of contracted capacity rights in the SWIN;
- The technical and economic difficulties of monitoring a secondary electricity market of contracted capacity rights; and
- Review and comment on Western Power's views on the disadvantages of a capacity rights trading in Western Australia.

This report is concerned with the allocation of capacity rights to downstream users (consumers) and up stream users (generators) connected at supply voltages of 66kV and above.

The issues surrounding contracted capacity rights of users connected to the distribution network are different as the distribution network is a system of radial feeders.

1.2 OVERVIEW OF PROCESSES AND METHODOLOGIES

The process used to prepare this report was to:

- conduct basic research and review the open access provisions in operation in other jurisdictions, notably in the National Electricity Market (NEM) jurisdictions of Australia, in other states of Australia, in New Zealand and the United Kingdom. In this regard PB consulted with our staff operating in those countries;
- review all of the Access Code consultation documents available on the ERA web site;
- attend a presentation made by Western Power Corporation (WPC) on 14 December 2006, to discuss their concerns and issues in relation to their proposed Access Contract; and
- discuss the concerns and issues of the ERA in relation to these matters.

We acknowledge the assistance of Dr Ray Challen of Allen Consulting Group in providing a briefing of the situation in Western Australia at the beginning of December 2006.

1.3 STRUCTURE OF REPORT

This report comprises an Executive Summary and 5 sections.

The **Executive Summary** is provided at the beginning of this report.

Section 1 comprises this brief Introduction;

Section 2 discusses contract carriage and market carriage models for gas and electricity;

Section 3 discusses international practice in 3rd party access arrangements;

Section 4 discusses contracted capacity rights in the SWIN; and

Section 5 discusses Western Power's proposed access arrangement.

2. CONTRACT & MARKET CARRIAGE MODELS

Two fundamental models exist that are used in association with the provision of essential energy services in open access regimes—the contract carriage model and the market carriage model.

In this section, we discuss the available models and how these affect the assigning of capacity rights.

2.1 ELECTRICITY & GAS

A fundamental difference affecting the design of electricity and gas transportation systems is that electricity cannot be stored economically in large quantities. This means that electricity must be bought and sold in real time in contrast to gas which can be bought and stored for future resale. Furthermore electricity is essentially homogeneous while gas is often 'treated' in order to meet a buyer's preference for composition, pressure, etc. requiring staging facilities.

As we shall see these physical characteristics of electricity leads to the adoption of a 'storage tank' or market carriage model instead of a 'railroad' or contract carriage model.

2.2 CAPACITY

It is useful to define the term 'capacity' as it is used in the gas and electricity industry.

Capacity is generally referred to as either a volumetric capacity, e.g. the capacity of a gas cylinder is determined by the volume of the cylinder and the pressure of the gas, or a discharge capacity, e.g. the gas flow rate is expressed as a volume per unit time.

In the electricity industry, it is usual practice to refer to capacity as a maximum demand, e.g. kilowatts. The demand rate (or supply rate) is specified in kilowatt-hours. In practice the electrical industry refers to the demand (supply) rate as 'energy consumption (generation)'.

We note that when the Western Australia Access Code refers to capacity it is referring to contracted maximum demand.

2.3 CONTRACT CARRIAGE MODEL

The contract carriage market model is commonly seen in gas markets, particularly in the United States.

The United States gas market is useful to illustrate the contract carriage system.

A natural gas transportation market is a marketplace where pipeline capacity and transportation services are traded. The supply side of the market consists of interstate pipeline companies, and the demand side of shippers that purchase pipeline capacity and transportation from the pipeline companies. Shippers are usually marketers, local distribution companies, producers, or large end users. Transactions take place through transportation contracts that define the conditions of transportation and the delivery of natural gas. In this regard

'contract carriage' refers to the contracted volume of gas delivered via the gas transportation system.

There are two main transportation markets in the United States: a primary market and a secondary market. In the primary market pipeline companies sell transportation contracts to marketers, local distribution companies, or end users. In the secondary market pipeline companies and holders of transportation contracts resell unused pipeline capacity in the form of firm or interruptible transportation. The operation of the secondary market is facilitated by the use of storage capacity at hubs. The economic benefit associated with such hubs is that the gas transportation system achieves a relatively high utilization.

For a given volume of gas, it is relatively straightforward to determine the capacity required of the transportation system and to contract accordingly.

In a contract carriage market, gas users contract for a specified volume of gas to be delivered over a specified time period, which in turn determines a required pipeline capacity. The gas pipeline company sells a pipeline capacity right in the form of a transportation contract.

2.4 MARKET CARRIAGE MODEL

The market carriage model is commonly seen in electricity markets where electricity is bought and sold in near 'real-time' in a spot market. The electricity market carriage model assumes a transportation system of unlimited capacity, although in practice congestion is often present somewhere in the shared system.

The reason that electricity markets do not use a contract carriage model is because it is not a simple matter to determine by which path electricity is delivered from a given supplier to a given end user because electricity flows according to the path of least resistance, and the path(s) vary with time according to the collective behaviours of generators and users. This problem is often referred to as a problem of 'loop flows'. As a consequence, a transaction-based cost allocation is difficult to implement as the cost borne by a given user are partly determined by other participants.

If the supply and demand of electricity was fixed in time, it would be feasible to compute an allocation of the shared network assets 'consumed' by each supplier and user. For radial lines the allocation is more straightforward although even in this case, the behaviour of a generator or user has some impact on the shared network and may alter loop flows.

This means that in a market carriage model, capacity at entry and exit points relates only to connection assets.

These assets are generally charged on the basis that the network company must recover the cost of providing the asset.

For the shared network a revenue requirement is determined on the basis of the costs of providing and maintaining the network assets. These costs are pooled and allocated amongst users through a particular pricing model.

Both of these network pricing approaches are based on actual cost recovery principles, rather than marginal costing.

The above network pricing model should not be confused with the energy pricing model that applies in a wholesale electricity market. Here the clearing price at entry points for a given trading period is determined on the basis of sell prices bid by the generators. At the exit point it is determined by the **short-run** marginal cost, which will be influenced by the losses in the network and the existence of constraints. This is because in order to buy the extra unit a buyer will need to pay a generator the unit required to meet the purchase as well as the generation required to supply the incremental network loss. If there is a network constraint then the buyer may have to pay more because it is not possible to supply the marginal unit from the cheapest available generator because of the constraint.

The key here is that the price buyers pay for energy is separate from the price they pay for transportation or the use of the network.

There are two different types of energy market:

- A real time spot market, where all generation is traded through the market and where buyers and sellers sign bilateral financial off–market hedge contracts to manage trading risks. Examples are the NEM in Australia, the wholesale market in NZ, and the WESM in the Philippine.

- A must-run market where generation is dispatched in accordance with bilateral contracts notified to the market operator and the spot market is used only for top up and spill. Examples are Western Australia and NETA in the UK.

In a spot market constraints are managed by scheduling out of merit generation to avoid the constraint.

In a must-run market it is necessary for parties to a bilateral contract to ensure that network capacity will be available so that they can meet their contractual commitments. In this regard the Western Australia market is very different from the NEM and this affects the approach to capacity allocation, particularly as the Western Australia wholesale energy market allows for trading of capacity credits between generators and retailers.

According to the Independent Market Operator administering the Western Australia Wholesale Electricity Market:

“To the extent that one of the parties cannot conform to their contractual requirements, because of generator outage, transmission or network security constraints, low demand or some other situation, then those parties will be individually liable to settle their deviations from the contract position.

This places discipline on the market to only form Bilateral Contracts that reflect a reasonable expectation of the ability of the network to facilitate the delivery of that energy.

Note that there is no concept of physical, path dependent, transmission rights in the SWIN, rather each network user is granted a right to inject or withdraw up to an amount of energy specified in their access contract with their network service provider.“

PB observes that these statements have significant implications for the contracted capacity rights of generators. Generators would need firm guarantees of connection capacity.

Further, there is an implication that the shared transmission network would provide greater transfer capacity than that required under a real time spot market environment and there is a higher risk of stranded capacity under this model.

3. INTERNATIONAL PRACTICE IN 3RD PARTY ACCESS

PB observes that international practice in assigning 3rd party access rights to shared transmission network and transmission connection assets depends mainly on commercial considerations set within trade practices regulations and consistent with competition policy.

In this regard, the key features of Access Codes that are of interest are the cost recovery principles, capital contributions and associated access rights.

In this section of the report we summarize these key features for each of the Access Codes in force in United Kingdom, New Zealand and Australia (NER regions) and in Western Australia.

From here on in the report, when we refer to a user we include generators unless otherwise noted.

3.1 UNITED KINGDOM CONNECTION AND USE OF SYSTEM CODE(CUSC)

The United Kingdom operates a bilateral energy market similar to that operating in Western Australia. In this regard the access policies and practices in force in the UK are of particular interest to Western Australia.

3.1.1 Grid Investment Tests

The general approach to full cost recovery in the UK begins by testing whether assets required in support of a new connection request result in a benefit for all users, or have sole-user benefits.

The costs of assets providing shared network benefits are recovered through use-of-system charges.

The costs of sole-user assets (connection assets) are recovered through standard user tariffs, unless it is determined that standard tariffs are insufficient to support full cost recovery in which case an 'up-front' capital contribution is levied.

3.1.2 Capital Contributions

Users can propose to make capital contributions up to 100% of the cost of connection assets, thereby reducing regular payments. Mandatory capital contributions are required for 'non-economic' connection asset proposals.

Capital contributions are not applicable to the shared network in the majority of circumstances.

3.1.3 3rd Party Access Rights

Third party access to the transmission network of the UK National Grid Company is regulated by the Connection and Use Of System Code (CUSC).

Generators and users must enter into bilateral capacity agreements (Appendix B of the CUSC) with the National Grid Company.

The Code provides for rights to contracted transmission capacity *at the point of connection*. This capacity is termed the 'transmission entry capacity' or 'TEC'.

National Grid Company must meet a contractual capacity commitment in accordance with Clause 3.4.2 under Section 3.4 – Rights to Use the GB Transmission System (pp3-6):

> "Subject to the provisions of the **CUSC** and the **Grid Code**, **The Company** shall, as between **The Company** and that **User,** transport a supply of power through the **GB Transmission System** to the level forecast by the **User** from time to time pursuant to the **Data Requirements** set out in Part IIB of this Section 3 submitted by that **User** together with such margin as **The Company** shall in its reasonable opinion consider necessary having due regard to **The Company 's** duties under the **Transmission Licence** except to the extent (if any) that **The Company** is prevented from doing so by transmission constraints or by insufficiency of generation which, in either case, could not have been avoided by the exercise of **Good Industry Practice** by **The Company**."

We note that the capacity (supply of power) is determined by the User.

Section 11 of the bilateral agreement contains the following stipulation:

> "Any restriction or information provision (as each of those terms are defined or construed in Section 43(1) of the Restrictive Trade Practices Act 1976) contained in this **Bilateral Connection Agreement** shall not take effect or shall cease to have effect:
>
> 11.1.1 if a copy of this **Bilateral Connection Agreement** is not provided to the Department of Trade and Industry ("**DTI**") within 28 days of the date of this **Bilateral Connection Agreement**;
>
> or
>
> 11.1.2 if, within 28 days of the provision of that copy to the **DTI**, the **DTI** gives notice of objection to the party providing it."

Taken together, the CUSC and model bilateral agreement are interpreted in practice to mean that the National Grid Company **cannot unilaterally reduce TEC**.

Generators and users must furnish regular forecasts of demand against which National Grid compare their own forecast. A dispute mechanism is available should the parties disagree regarding forecast TEC.

Users are not entitled to explicit rights to the shared transmission network due to the difficulty of identifying which assets are 'consumed' by which user (the problem of 'loop flow'). PB has not observed any debate in the UK regarding rights to the shared transmission network.

Generally speaking, the UK Access provisions are similar to those in force in the Australian NEM and New Zealand. However, a striking difference relates to the right of generators to trade transmission entry capacity with other generators and users. This right was introduced from 1st April 2005, apparently in response to a shortage of shared network capacity and in support of bilateral energy trading.

If a generator is seeking additional TEC or a new generator is seeking an initial allocation of TEC this may be done by completing an application and sending it to National Grid. National Grid has a licence obligation to offer terms to all parties

seeking access to its transmission system. If National Grid considers that the additional generator capacity would require network reinforcement for its system to continue to comply with its security standards then they would typically provide a connection offer on an invest-then-connect basis.

CUSC amendment proposal CAP068 (Competing Requests for TEC) provides an alternative approach. This amendment facilitates new arrangements whereby generators are able to trade Transmission Entry Capacity (TEC) rights on a permanent basis, *subject to an exchange rate set by National Grid.*

For a generator, Transmission Entry Capacity (TEC) is a CUSC term that defines a maximum allowed export capacity onto the transmission system. Under the CUSC, parties with TEC rights have the option of purchasing the same or less quantity of TEC in the following year.

If there is a willing seller of TEC, parties may wish to negotiate bilaterally for the purchase of TEC. National Grid does not put parties in contact directly but provides a TEC Register that parties can use to identify possibly capacity trading partners.

Upon receipt of a joint application from both parties of the TEC rights, National Grid calculates the appropriate Exchange Rate within the same Grid Supply Point (GSP) or between differing GSPs (as appropriate). The Exchange Rate identified by National Grid is used in the calculation of Transmission Entry Capacity available to a specific party as a direct result of a specific reduction in the Transmission Entry Capacity available to another party.

National Grid publishes the details of any such TEC Trade on its CUSC website.

3.2 AUSTRALIAN NATIONAL ELECTRICITY RULES (NER)

3.2.1 Grid Investment Tests

The Australian Competition and Consumer Commission ("ACCC") regulatory test is a grid cost-benefit test that was first published in 1999.

The test is used by transmission and distribution businesses in the National Electricity Market ("NEM") to assess the efficiency of transmission network investment. It consists of two limbs:

- the reliability limb; and
- the market benefit limb.

(i) Reliability Limb

This limb of the test is used for evaluating reliability driven augmentations. This requires transmission grid owners to:

"plan and develop its transmission grid in accordance with good electricity industry practice such that power quality and reliability standards in the NER are met for intact and outage conditions, and the power transfer available through the power system will be adequate to supply the forecast peak demand during the most critical single network element outage, unless otherwise by varied by agreement."

Grid augmentations evaluated under the reliability limb must minimise the net present value (NPV) of the cost of meeting the required reliability standard, compared with a number of alternative options in a majority of reasonable scenarios.

(ii) Market Benefits Limb

In this limb of the regulatory test, the proposed augmentation should maximise the NPV of the market benefits to all those who produce, distribute and consume electricity in the NEM. Similar to the reliability limb, this needs to be demonstrated by a measure that can produce a ranking of alternatives based on most credible scenarios.

In passing we note that in Queensland, the transmission grid company Powerlink has not justified any capex projects under their 2006 price determination review using the market benefits limb of the regulatory test because the reliability criteria prescribed by Powerlink's jurisdictional Transmission Authority requires a lower threshold for grid augmentation and is non-discretionary.

3.2.2 Capital Contributions Policy

In the NEM jurisdiction, capital contributions policy in relation to connection assets is the same as that found in the UK.

The notion of capital contributions towards the shared network is not a prominent feature of the NER, and PB observes that there has been no debate regarding shared network capacity rights, whether capital contributions were required or not.

3.2.3 3rd Party Access Rights

In the NEM jurisdiction, generators and users have rights to contracted capacity, and transmission service providers do not have a right to unilaterally reduce capacity.

Trading of contracted capacity is not supported, although in principle, the existing regulations do not rule out a transfer or relocation of contracted capacity.

3.3 NEW ZEALAND ELECTRICITY CODE

3.3.1 Grid Investment Tests

The Grid Investment Test principles applicable in New Zealand are specified in Part F of the Transport Rules.

In summary the Grid Investment Test has two limbs:

- Economic investment test; and
- Reliability investment test.

The Economic Investment test is satisfied by a proposed economic investment if it maximises the net market benefit, compared with a number of alternative projects, in the greatest proportion of reasonable scenarios.

The Reliability Investment test is satisfied if a proposed reliability investment, intended to maximise probabilistic reliability standards, maximises the net market benefit, compared with a number of alternative projects, in the greatest proportion of reasonable scenarios.

The regulatory framework also allows for 'contracted investment' in which case the grid owner and a third party can enter into an agreement for grid services according to commercial terms and conditions agreed between themselves.

The New Zealand approach is consistent with the approach in the NEM. The NEM and NZ Electricity Code distinguish between projects proposed to meet load (augmentations and extensions) and those proposed to meet grid reliability standards. These are the two limbs of the regulatory test.

3.3.2 Capital Contributions Policy

Capital contributions policy towards connection assets is the same as that found in the NEM and UK jurisdictions.

As in the NEM, in New Zealand the notion of capital contributions towards the shared transmission network is not a prominent feature of the Access Code, nor has PB observed debate regarding the merits of shared transmission network capacity rights. In fact, PB has observed that generators and users have been very reluctant to make capital contributions towards sole-user connection assets and for their portion of shared connection assets.

However, capital contributions are very much part of the scene in respect of the distribution network.

3.3.3 3rd Party Access Rights

In New Zealand access rights are the same as those in the NEM jurisdiction. Generators and users have rights to contracted capacity, and the transmission service provider (Transpower) does not have a right to unilaterally reduce capacity.

Trading of contracted capacity is not supported, although again in principle, the existing regulations do not rule out a transfer or relocation of contracted capacity.

3.4 WESTERN AUSTRALIA ACCESS CODE

3.4.1 Grid Investment Tests

The tests that are applicable to shared network reinforcements and third party access applications are contained in the Access Code. These tests are known as:

- the Regulatory test; and
- the New Facilities Investment test.

These tests are described below:

(i) Regulatory Test

The Regulatory test applies only to major augmentations. The objective of the Regulatory test is encapsulated in the following clause taken from Section 9.1 of the Access Code.

"*(a) to ensure that before a service provider commits to a proposed major augmentation to a covered network, the major augmentation is properly assessed to determine whether it maximises the net benefit after considering alternative options*;"

(ii) New Facilities Investment Test

The New Facilities Investment test is defined in Section 6.52 of the Access Code as follows:

"New facilities investment may be added to the capital base if:

(a) the new facilities investment does not exceed the amount that would be invested by a service provider efficiently minimising costs, having regard, without limitation, to:

(i) whether the new facility exhibits economies of scale or scope and the increments in which capacity can be added; and

(ii) whether the lowest sustainable cost of providing the covered services forecast to be sold over a reasonable period may require the installation of a new facility with capacity sufficient to meet the forecast sales;

and

(b) one or more of the following conditions is satisfied:

(i) either:

A. the anticipated incremental revenue for the new facility is expected to at least recover the new facilities investment; or

B. if a modified test has been approved under section 6.53 and the new facilities investment is below the test application threshold the modified test is satisfied;

or

(ii) the new facility provides a net benefit in the covered network over a reasonable period of time that justifies the approval of higher reference tariffs; or

(iii) the new facility is necessary to maintain the safety or reliability of the covered network or its ability to provide contracted covered services.

3.4.2 Capital Contributions Policy

The Capital Contributions Policy is set out in Chapter 5 of the Access Code under Section 5.12 to 5.17.

"5.14 Subject to section 5.14A a capital contributions policy must not require a user to make a capital contribution in respect of any part of new facilities investment which meets the new facilities investment test."

5.14A A capital contributions policy may provide for a user to make a capital contribution in respect of a new facility whether or not the new facilities investment meets the new facilities investment test, if an approved extension and expansion policy provides for the user to pay in respect of the new facility an amount specified in, or determined under, the policy.'

These clauses specify that a user may make a capital contribution irrespective of whether or not the new facilities investment test is met. This policy approach is consistent with that observed in other jurisdictions.

3.4.3 3rd Party Access Rights

PB has reviewed the Access Code from the standpoint of contracted capacity rights. We find this topic is treated primarily in Appendix B – Capacity Provisions.

In particular contracted capacity is defined as follows:

Contracted capacity *for a connection point means:*

(a) for the electricity transferred into the network, the Declared Sent Out Capacity; and

(b) for the electricity transferred out of the network, the Contracted Maximum Demand.

Sections A3.12 and A3.13 make it clear that the Service Provider must provide the contracted service at a connection point.

"A3.13 Subject to this contract, to the extent that a service at a connection point relates to capacity, service provider must provide the service up to the contracted capacity for the connection point."

With regard to variations to contracted capacity, Sections A3.15 to A3.18 deal with the user's right to increase contracted capacity.

Sections A3.19 to A3.24 specify the right of a user to reduce capacity in one location and increase capacity in another location. This is referred to as relocation.

With regard to reductions in contracted capacity, Sections A3.27 to A3.30 deals with the Service Provider's rights to curtail the capacity at a connection point. Such curtailment is only allowed for the reasonable purpose of meeting broader obligations in line with good electricity industry practice, e.g. maintenance network outages.

In summary, a generator or user has the right to contracted connection point capacity from the Service Provider unless there are reasonable circumstances that would necessitate a temporary curtailment.

Section 5.18 to 5.24 of Section 5 relates to the conditions under which transfers and relocations of capacity take place between users or in respect of a single user's premises.

There are two forms of transfer identified – a 'bare transfer' and 'other transfers'. In the former case, the bare transfer supports a change of ownership of a facility. Other forms of transfer between legal entities are subject to approval by the Service Provider.

Relocations are envisaged to apply to a single user relocating contracted capacity from one point to another point in its access contract.

PB considers that the effect of a trade in the UK is the same as that envisaged under the Western Australian Transfer and Relocation policy.

However, in the UK users cannot participate in trades unless they are generators seeking additional contracted capacity. In this regard the transfer and relocation policies outlined under Section 5 are a unique feature of the Western Australian Access Code, as all generators and users can transfer (trade) capacity with minimal constraints.

4. CONTRACTED CAPACITY RIGHTS IN THE SWIN

In this section, we discuss the following issues in relation to contracted capacity rights in the SWIN:

- review and comment on the reasonableness, and appropriateness of assigning capacity rights in the SWIN;
- provide advice on the rights of access seekers with regard to the transfer of energy through the electricity network; given the technical constraints of the network; and
- review and comment on tradability of contracted capacity rights in the SWIN.

4.1 CAPACITY RIGHTS IN THE SWIN

The assigning of capacity rights in the SWIN should be considered in terms of a new connection requests which would trigger the need for some of the following elements:

a) Connection Asset Works (at the customers point of connection to the Grid);

b) One-off works (typically a radial line extension and substation);

c) Sole Reinforcement Works (typically at the point of connection to the Grid);

d) Shared Reinforcement Works (when other applicants seek access to the same Grid connection point); and

e) Wider Reinforcement Works (typically in the shared network).

4.1.1 Connection Asset Capacity Rights

In the SWIN it is to be expected that generators and users would expect to hold firm capacity rights at the point of connection related to works covering items a) through d) above.

PB observe that industry practice in the United Kingdom, New Zealand and the NEM (other states of Australia) is to specify a maximum contracted demand at the users point of connection and to consider this demand as a 'contracted capacity' right in line with sound commercial practice.

It is particularly important for generators in Western Australia to have a firm contracted capacity in support of their bilateral contracts and for trading of capacity in the Western Australian Wholesale Electricity Market and the Access Code facilitates this requirement.

The Western Australian Access Code provides for such contracted capacity rights for generators and users consistent with international practice in UK, Australia (NEM Regions) and New Zealand.

According to observed international practice it is reasonable for generators and users to have an explicit right to contracted connection point capacity in the SWIN.

4.1.2 Shared Network Capacity Rights

A commonly encountered question is “why shouldn’t a user have an explicit right to capacity in the shared transmission network, particularly in the case where they have paid a capital contribution in support of wider reinforcement works affecting the shared transmission network?” - item e) in the above list.

As previously discussed in Section 2.4 of this report, the generally accepted answer to this question in jurisdictions outside Western Australia is that the shared transmission network is defined as a shared network precisely because of ‘loop flows’ wherein the paths by which energy is delivered to a given user are not constant over time. This means that the notion of a physical capacity right in the shared network is not sensible due to technical considerations.

PB observes that as a result of these considerations, there are no explicit rights to capacity in the shared networks in operation in the United Kingdom, New Zealand or in the other states of Australia.

The assignation of contracted capacity at the point of connection suggests an ‘implied’ right to capacity in the shared network. Capacity in the shared network is not explicitly contracted in jurisdictions outside Western Australia, i.e. the Access Code provisions are consistent with access codes elsewhere.

In the SWIN it is reasonable for generators and users to have an ‘implicit’ right to capacity in the ‘shared’ transmission network due to the difficulty associated with charging for ‘consumption’ of the network, consistent with international practice.

4.2 TRADABILITY OF CONTRACTED CAPACITY RIGHTS IN THE SWIN

4.2.1 WA Access Code Design Principles

PB has reviewed the Access Code from the standpoint of trading of contracted capacity rights.

PB understands that the Access Code was prepared by consultants possessing a background in the design of gas market frameworks.

Furthermore, it has been suggested that this background may have contributed to the perception that the ERA has contemplated the introduction of a secondary market for ‘shared network’ capacity rights in keeping with a contract carriage model.

After reviewing the Access Code, PB is of the opinion that the consultants that prepared the Access Code were not unduly influenced by the practices related to physical capacity trading that are observed prominently in US gas markets.

We find nothing untoward in terms of the general principles and detailed approach to contracted capacity rights as it appears that the intention was to establish capacity rights in terms of a maximum demand at a connection point.

Overall, the underlying design principles are therefore similar to those adopted in other jurisdictions with one exception – the inclusion of a Transfer and Relocation Policy.

The relocation and transfer policy provisions fall well short of prescribing a secondary market of contracted capacity rights, however such a market is not specifically ruled out. The Service Provider can oppose transfers on the grounds of commercial disadvantage to itself, but not on the grounds of commercial disadvantage to an access seeker.

The right to determine the 'exchange rate' and dispute resolution procedures in relation to maximum demand forecasts (of the type specified in the UK CUSC) are not stipulated in the Western Australian Access Code but such approaches could be readily introduced into the SWIN.

4.2.2 Technical & Economic Difficulties of Capacity Trading

Connection capacity trading in the United Kingdom was described in Section 3.1.3 and illustrates the degree of difficulty involved in capacity trading in the SWIN.

The process is administrative in nature and determination of the 'exchange rate' is straightforward. We note that National Grid Company in the UK does not proactively match participants in supporting of TEC trading. This means that the administrative burden is less than it would be should the Grid Company be expected to match participants pro-actively. Furthermore, TEC trading in the UK is limited to new or increases in capacity sought by Generators and does not include user-to-user trading, meaning that the administrative burden is further limited to what it would be under the current transfer provisions of the Western Australian Access Code.

With regard to trading of shared network capacity, PB considers that such trading is not viable due to the difficulties highlighted in Section 4.1.2. Such trading is not a feature of any access regime surveyed by PB.

5. WESTERN POWER'S PROPOSED ACCESS ARRANGEMENT

In this section, we discuss and comment on our understanding of Western Power's views on the disadvantages of a capacity rights regime in the SWIN.

5.1 WESTERN POWER'S CONCERNS

PB has reviewed Western Power's proposed Access Contract – the Electricity Transfer Access Contract ("ETAC").

In this contract, Western Power has included a provision (Clause 3.2) to **unilaterally reduce the contracted capacity** (demand) of a user should Western Power decide that the user's electricity demand has not peaked at the expected level envisaged when the connection contract was established.

We understand that Western Power wish to maintain this right in order to achieve several outcomes:

- To maximise the utilisation of the 'covered' network; the network may not be economically efficient if planning was based on a misleading forecast of capacity needs by a generator or user;
- Ensure that a generator or user does not block another access seeker from access to spare capacity for competitive advantage by holding onto a capacity right for which the generator or user had no continuing need; and
- Ensure that users do not trade capacity rights at premiums to the regulated tariffs that would otherwise be available to access seekers – effectively creating a secondary market.

The latter two bullet points are examples of anti-competitive behaviour.

With regard to Transfer and Relocation policy, we understand that Western Power is not disputing the right of a user to relocate or transfer contracted capacity subject to the provisions of the Access Code. However, Western Power is disputing any proposal whereby users would have rights to trade shared network capacity.

5.2 UNILATERAL CONTRACTED CAPACITY REDUCTION

PB has reviewed the practices followed in the United Kingdom, other states of Australia and in New Zealand. We observe that there are no precedents in these jurisdictions whereby a network Service Provider has a unilateral right to reduce contracted capacity. We consider that such a right would constitute a restriction of fair trade and could conceivably violate the Trade Practices Act.

Accordingly, PB considers that Western Power's proposed contract stipulation allowing for unilateral reduction of contracted capacity is not tenable.

Western Power has also proposed that a reduction in contracted capacity (demand) would trigger a right to recover a capital contribution from a User (Clause 3.7 of the ETAC).

Taken together with the proposal to unilaterally reduce contracted capacity, it appears that Western Power proposes a heavy-handed right to unilaterally reduce contracted demand and to ask a user for a capital contribution to recover the investment costs associated with connection assets that Western Power considers are no longer required.

PB considers that Western Power should have a right to fully recover costs in line with user pays principles adopted in other jurisdictions. It appears, however, that Western Power may not be recognising that their role should be to proactively support generators and users to transfer their connection capacity as a preferred means of discharging their financial obligations.

More broadly, we consider that this issue is one of risk management rather than a technical issue. Unilateral altering of access contracts is heavy handed and is not consistent with the objectives of the Access Code in that competition is best promoted if parties deal with one another on an arms length commercial basis and both parties to the contract have similar negotiating power. Furthermore, a well managed Service Provider should ensure that it has sufficient commercial tools available to effectively manage the risk.

5.3 TECHNICAL UTILISATION

With regard to maximising the technical utilization of the network, consistent with grid investment test and license requirements, we highlight that in the United Kingdom it is accepted by the Regulator that an open access regime may lead to inefficient outcomes in some instances, i.e. sub-optimal shared network technical utilization. However, such instances are expected to be rare given that generators and users are unlikely to pay for a service that is not required. The fundamental concern of the Regulator is to ensure that the Grid Company can recover sufficient revenue to cover the costs of their grid investment and a reasonable return. This requirement can be covered through commercial agreements and is supported by charging policies. PB suggests that Western Power should be concerned with economic utilisation of connection assets in the first instance, and technical utilisation of the shared network as a secondary consideration.

5.4 ANTI-COMPETITIVE DEALINGS

It appears from the proposed ETAC and from discussions held that Western Power is not opposed to transfer/trading of connection capacity, but is concerned that 1) a secondary market could develop whereby access seekers would trade capacity rights at premiums to actual cost (to those costs implicit in the earlier calculation of regulated tariffs pertaining to a connection point) for competitive advantage or 2) a generator or user may withhold a capacity reduction or transfer for competitive advantage over a rival.

Western Power proposes that a unilateral right to reduce capacity would ensure that excess capacity would be reduced before such anti-competitive behaviour could arise. PB concurs with Western Power that this approach would mitigate anti-competitive behaviour. However, such mitigation would be at the expense of open access principles and in conflict with the needs of generators to hold firm capacity in support of bilateral energy trading contracts.

With regard to Western Power's first concern, that an access seeker may have to pay a premium for capacity offered by an existing user, there appears to be no

restriction in the Access Code to prevent a Service Provider from disclosing the minimum 'exchange rate' for cost recovery during a transfer of connection assets to an access seeker. While this disclosure on its own would not guarantee that an access seeker could avoid being forced to pay an unfair premium for access; it could reasonably be expected to improve the access seekers' ability to negotiate a fair and equitable price for the capacity in question, or to seek legal redress should negotiations fail.

Such an improvement in outcomes could only happen if an access seeker can obtain information that demonstrates that a generator or user is acting anti-competitively in terms of pricing of access. In this regard, Western Power is well placed to provide costing information or an 'exchange rate' as is the case in the UK. Section 5.19 (b) provides a basis for such information disclosure as Western Power could specify circumstances in which consent will be given in terms of the minimum required costs for recovery of investment. An access seeker would then be able to assess what premium has been applied to an offer.

"5.19 For a *transfer* other than a *bare transfer*, a *transfer and relocation policy*:

> (a) must oblige the *service provider* to permit a *user* to *transfer* its *access rights* and, subject to section 5.20, may make a *transfer* subject to the *service provider's* prior consent and such conditions as the *service provider* may impose; and
>
> (b) subject to section 5.20, may specify circumstances in which consent will or will not be given, and conditions which will be imposed, under section 5.19(a)."

In this approach, however, information disclosure on its own would not overcome the problem of a generator or user holding onto contracted capacity as a transfer would not be initiated.

An extension of the information disclosure approach would be to formalise the right of the Service Provider to determine the 'exchange rate' cost of the transfer and to base the commercial arrangements between access seekers on such a rate. PB considers that such an approach would require an amendment to the Access Code to conform with similar principles to those governing the UK practice of capacity trading. Such an amendment would ensure fairness and equity in the price paid for access.

However, once again on its own, such an approach would not ensure that a generator or user would not hold onto spare capacity in exchange for a competitive advantage over a rival access seeker. In the UK, the problem of withholding is mitigated by a requirement for generators and users to provide regular demand forecasts. If the generator or user cannot agree on the demand forecast with National Grid, a dispute resolution process can be initiated by either party. A further amendment would be required to the Access Code to bring the rights of generators, users and Service Providers into line with those granted under the CUSC.

More broadly the common problem in both of these scenarios is one of anti-competitive behaviour. With regard to anti-competitive behaviour, we consider that this issue should not be of concern to Western Power in its role as a facilitator of access. The primary concern of Western Power should be to recover investment costs and PB considers that such recovery is supported under the Access Code. Anti-competitive behaviour should ideally be dealt with through

laws and regulations under the auspices of a competition watchdog, rather than by granting Western Power heavy-handed rights to reduce capacity unilaterally.

5.5 TRADING OF SHARED NETWORK CAPACITY

PB has addressed this issue in Section 4.2.2 of this report, and concurs with Western Power that there are no national or international precedents for users to have rights to the shared network. PB considers that such trading is not viable.