Market Access

Report to National Generators Forum

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In conducting the analysis in the report Synergies has used information available at the date of publication, noting that the intention of this work is to provide material relevant to the development of policy rather than definitive guidance as to the appropriate level of pricing to be specified for particular circumstance.

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1 Introduction

In October 2005, the Ministerial Council on Energy (MCE) directed the Australian Energy Market Commission (AEMC) to consider the requirement for and scope of enhanced trading arrangements in relation to congestion management and pricing in the National Electricity Market (NEM). This investigation is referred to as the Congestion Management Review (CMR).

One of the key issues being investigated by the AEMC within the context of the CMR is whether incremental changes to transmission regulation (in particular transmission pricing) might reduce the financial and physical trading risks associated with network congestion or enable participants to manage these risks more efficiently.

Synergies Economic Consulting (Synergies) has been engaged by the National Generators Forum (NGF) to review the current regulatory framework and to develop options to address concerns regarding the nature of generator's which are consistent with the NEM framework.

The purpose of this report is to explore whether there are options available that will increase the firmness of access to the transmission network within the current framework of the NEM. The report is structured as follows:

- section 2 provides an overview on the limitations of the current regulatory framework;
- section 3 summaries the key challenges of firm access;
- section 4 discusses the level of access rights provided within the current regulatory framework and the key challenges for market participants; and
- section 5 identifies two options for reform.

2 Limitations of Current Arrangements

Transmission regulation can have a significant impact on generator investment decisions, the timeliness and efficiency of investment and ultimately the level network congestion. In addition, access rights can facilitate more efficient and timely investment to relieve network congestion and ultimately encourage more efficient investment in the market generally.

Under the current NEM framework a key driver[1] of the location of new generation is the projected impact of transmission congestion. Congestion can have an adverse impact on the financial performance of a generator through restricted capacity, reduced reliability and the increased cost of evacuating power from that location.

While the current arrangements provide some signals of the consequences of locating at specific points in the network, they cannot reasonably be expected to result in optimal investment decisions that are in the long term interests of consumers. This is primarily due to a lack of instruments (regulatory or market) to price and manage the impact of intra-regional congestion on the operation of the market whether on a daily basis or in the longer term.

A new generator may face some congestion costs as a result of its investment decision, for example, in the form of higher risks of being constrained off (that is lost output) and/or higher average marginal loss factors. These costs are very unlikely to reflect the full economic costs of their location decision.

Once investment has been made, generators have few options available to manage the impact of intra-regional congestion. This is largely due to a lack of any *practical* right for generators to undertake network augmentations that might address network congestion that arises after the generation investment is made.

Although the current regulatory framework does not specifically prohibit generators funding network augmentations to relieve congestion, generators face formidable challenges in seeking to do so. For example, generators that chose to fund a network augmentation would face the risk of also providing more reliable access to other competing generators without compensation for so doing – in augmenting the network they would be attracting other generators to also take advantage of that enhanced

[1] There are other important drivers, of course, such as fuel supply, planning restrictions, land availability and broader policy considerations.

market access. As a result, the new investment would be prone to free riding. It is therefore not surprising that generators have avoided this option.

In addition to the above inefficiencies other market participants (and ultimately consumers) are likely to face the following costs that further exacerbate generation investment risks[2]:

- *Network Congestion* – if a new generator (with comparable costs and technology specifications) causes an increase in congestion in the area, but does not affect system reliability, it is unlikely the transmission network service provider (TNSP) will augment the network to mitigate the resultant increase in congestion[3]. Both the new and incumbent generator/s are therefore affected through increased congestion which may result in reduced access, reduced viability of existing plant and/or inefficient dispatch due to lower cost generation being constrained-off.

- *Transmission Costs* – if the entry of a new generator results in increased congestion and reduced network reliability the TNSP will be required to augment the network to increase capacity. Given the new generator is only subject to shallow connection charges, the cost of increased congestion is borne by all users through increased transmission use of system (TUOS) charges. In some instances, although the augmentation would be seen to be efficient (in terms of the Regulatory Test), it may be questionable whether this is the most efficient use of network funds.

  Also, given the new generator will not incur increased costs through higher loss factors or being constrained as a result of its investment decision - as a result of the TNSP building out the constraint - it effectively removes one of the few signals under the current framework for the efficient location of generation hence risking future allocative inefficiencies.

- *Efficiency of Dispatch* - the fully co-optimised form of constraint equations can create inefficient drivers in terms of the bidding behaviour of generators in strategic locations within the transmission system. Namely, the generator is

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[2] It should be noted that there could also be *positive externalities*. A generator locating in a supply deficient area of the network would likely reduce congestion and marginal losses for other generators. Generally speaking, the NEM pricing rules deal with positive externalities much better than negative externalities from new generation investment, a new generator that reduces marginal losses and congestion on the network has the effect of validating the large zone model that the NEM has adopted. Generation than makes congestion worse tends to stress the NEM model. Accordingly, most concern relates to location decisions that worsen network performance as these are likely to have the more severe economic and financial consequences.

[3] This is due to most transmission investment decisions being driven by the reliability limb of the Regulatory Test. Such an augmentation would be justified on a market benefit basis.

able to strategically bid so that their load effectively gains preferential access to the transmission system. These outcomes can lead to reduced participant confidence in the integrity of NEM pricing outcomes. It may also contribute to poorly timed or placed investment.

Due to the physical nature of generation investments, the above limitations may have a long term adverse impact on the efficient location of investment as it effectively entrenches these inefficiencies for the life of the generation assets.[4]

Accordingly, there are two access issues that are of relevance to generators. First, prospective new generators face investment risk because they face uncertainty over their long-term access to customers — appearing as a risk of lower prices and reduced output even when the generator is not technologically outdated. Secondly, existing generators face revenue risks which they are unable to manage because it is caused by third party investment decisions, and because the consequences of those investment decisions may be massively 'leveraged' due to detailed and specific features of the transmission network.

Furthermore, lack of a clear mechanism for dealing efficiently with these problems means that new generators are likely to locate on the existing transmission network, because by so doing they will reduce the incidence of prospective congestion.[5] There are no grounds for believing this is efficient.

[4] In addition, negative externalities can arise from generation location decisions – such as where new generation results in significant changes in loop flow constraints.

[5] The effect has two components. First, locating close to a large network spine means that any congestion that does occur will be proportionately smaller (than that which would occur on a lower capacity network element). And second, congestion is likely to affect many more generators, so TNSPs have greater incentives to deal with it in a timely fashion.

3 Challenges to Firm Access

These problems would be alleviated if new and existing generators had some form of guaranteed *firm* access to the network.[6] However, this alternative has not been pursued given the terms of reference for the CMR review.

The equivalent of true firm access can be achieved if payments are equal to the foregone revenues from operation. To make this work:

- opportunity costs need to be determined — a difficult task when there is a high degree of price averaging in the market, or when there is concern over market power distorting market outcomes;
- some disinterested party in the system needs to be able to pay these compensation payments, and secure a revenue stream exactly sufficient to do so; and
- ideally, the consequences of these transactions should encourage more efficient investment in transmission and the location of new load and generation.

The *Principles Relating to Access to Negotiated Transmission Services* outlined in the National Electricity Rules (NER or the Rules) address to some extent the above principles, as section 6A.9.1 (8) requires that:

> any *access charges* should be based on the costs reasonably incurred by the *Transmission Network Service Provider* in providing *transmission network user access* and (in the case of compensation referred to in rules 5.4A(h) - (j)) on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in rule 5.4A(h)-(j) where an event referred to in those paragraphs occurs.

Whilst this mechanism provides some form of locational signal for new generators there are a number of enduring administrative and efficiency limitations. For example;

- the methodology for determining foregone revenue or likely costs has not been defined. It is therefore unclear whether the new generator will pay the full costs of its investment decision;
- it is not clear whether the TNSP is holding these monies in trust to be used at a later date to pay for compensation claims(under s5.4A), build out the resultant congestion or offset charges for end users;

[6] One approach to this is through the allocation of financial access rights (FTRs) in a nodal pricing environment – clearly this is not in current contemplation and the issue is not considered further here.

- no clarification has been provided on how compensation will be distributed amongst the parties affected by the new connection;
- it is not clear what form of property right (if any) a new participant will receive or whether existing generators may be able to pay for firmer access; or
- it is not clear how short falls between compensation paid (in accordance with contractual obligations) and monies received from new generators will be funded.

If a prospective entrant is willing to pay the full economic costs of its connection and existing generators are willing to pay for firmer access by 'building out' current levels of congestion then this will generally result in both private and social gains. The practical consequences would be greater investment certainty for generators which, in principle, should lower costs of entry and in the long run lower energy prices. All of which are consistent with the National Electricity Law (NEL) objective.

4 Section 5.4A of the Rules

Section 5.4A of the Rules purports to provide generators with an ability to achieve an access right that fits within the current regulatory framework.

Despite the inclusion of this provision, no generator has been able to negotiate firmer access with a TNSP in accordance with section 5.4A since the creation of the NEM. This may be attributed to one or more of the following, each of these factors are discussed further below:

- TNSPs believe that the provision of firmer access and/or compensation for intra-regional congestion is contrary to the principles of open access;
- the institutional and regulatory framework does not currently provide a clear mechanism for recognising the property right of the investing generator or resolving issues surrounding that right (for example the funding of compensation in the event of congestion); or
- TNSPs have no incentive to negotiate firmer access given a lack of transparency around the payment of compensation and the potential for increased regulatory and operational complexity associated with resolving intra-regional congestion issues.

4.1 Open Access

The allocation of firm access rights is not prohibited or restricted under an open access regulatory framework. For example, access frameworks in relation to the Australian gas transmission, rail and port infrastructure sectors provide users with a right to capacity (firm access) – as outlined in Appendix A. Access rights are non-exclusive contractual rights and do not give the access rights holder any right, title or interest of any proprietary nature in the infrastructure, only a right to use the infrastructure, and in some cases, to be compensated if it is unavailable.

4.2 Regulatory Framework

In accordance with section 5.4A (h) access arrangements can provide for compensation to be provided by the TNSP to the generator in the event that the generating unit/s are constrained-off or constrained-on during a trading interval. The provision also allows for compensation to be provided by the generator to the TNSP in the event that

dispatch of the generator's unit/s causes another generator's generating unit/s to be constrained-off or constrained-on during the trading interval.

A key limitation with this provision is how compensation will be provided by the TNSP to a generator or from one generator to another. In general the current provision would have the following efficiency and administrative limitations:

- unless these provisions are applied widely, compensation arrangements would prove to be ineffective as in some cases there would be no counterparty for the risk of being constrained-off or constrained-on to be hedged against.

  For example, Generator A caused Generator B to be constrained-off. Generator B has an access arrangement with their TNSP which is consistent with section 5.4A. As such Generator B will seek compensation from the TNSP. However, given the TNSP does not have a similar agreement with Generator A it will have to pay compensation to Generator B from consolidated funds.

- there is insufficient guidance provided by the regulatory environment as to the operation of the existing arrangements – for example there is no indication of the nature of the rights that can be expected to be secured under this provision. This creates uncertainty for both TNSPs and generators;

- there are no incentives for the TNSPs to negotiate such arrangements and the dispute resolution machinery has not been effective.

5 Adjustments to Section 5.4 A

Given these limitations, there is a strong case for clarifying the rights generators secure when they invest in transmission to alleviate congestion that they face (referred to in section 5.4A). This could be achieved by defining the nature of the property right, defining the funding mechanism for compensation payments, and clarifying the institutional and regulatory framework within which the property rights will be resolved.

Currently, section 5.4A of the Rules suggests there are circumstances where generators can secure legitimate (but only implicit) property rights[7] through the payment of compensation for network connections that are subsequently constrained (constrained-on or constrained-off) through the actions of a third party. However, the Rules do not define how this property right is conferred on the generator or the nature of the right, be it physical and/or financial (preferential dispatch rights). This lack of clarity means that, in practice, the Rules fail to deliver the outcome they are seeking.

In recognition of the current regulatory framework, there are two possible models for generator funded transmission.

5.1 Strong Model

Under this model, in the event of being constrained off, compensation would be paid to generators that are willing to and have paid for transmission augmentation that reduces the current levels of network congestion.

If a generator contributes to overcome transmission constraints, a property right (prescribed in the Rules) would be conferred on the generator.[8] In recognition of this property right, the generator would have a right to compensation if the pre-agreed access specifications are found to be inadequate (that is they are constrained-off more often than anticipated). These specifications, attached to the generator funded transmission augmentation, would be clearly defined *ex ante* in terms of agreed maximum frequencies, duration and timing of congestion (when the generator is

[7] Property rights can be enacted through preferential rights to use the asset in question (priority dispatch in power markets) or through compensation if access is denied. The latter is generally preferred in power markets because of the complexities that arise from physically dispatching the system to meet a large bundle of often conflicting physical access demands.

[8] Consistent with the *status quo* if an existing Generator does not pay to augment the network - that is remove the resultant level of congestion - no access right would be provided.

constrained-off) *at a zero offer price.* This right would extend to circumstances where the generator's access is reduced do to the action of a new generator accessing the network or the TNSP implementing a significant network change.

Of course, once transmission has been constructed with generators' support, it is not easy (or desirable) to stop new generators connecting to the network and making use of it, even though this new connection will inevitably impact the access rights of the generator that made the contribution.[9]

The impact of a new generator connection could be addressed in a number of ways, each of which would alter the allocation of risk and the cost that the generator would face in securing the network augmentation (noting that the augmentation is, in a real sense, the secondary outcome of the arrangement, the main outcome being the provision of insurance against being constrained off).[10] For example:

- the TNSP could charge the new generator a sum equal to the anticipated increase in the costs of insuring the incumbent generator against the risks of being constrained off;
- the new generator could compensate the existing generator directly for the diminution of value consequent on its decrease in access, and the congestion limits for the incumbent would be increased in accordance with a prescribed formula;[11] or
- some compromise position could be established in which the new generator pays (in effect) a proportion of the change in insurance costs and the incumbent generator faces some increase in the quantum of uninsured constrained-off operation.

Irrespective of the method of compensation used, the parameters for negotiation and minimum obligations would need to be established *ex ante* in the Rules or by negotiation between the TNSPs, the incumbent generator and the Australian Energy Regulator (AER).

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[9] It is possible that the augmented transmission system is able to meet the immediate needs of the incumbent and new generator without causing immediate congestion. However, to the extent that the new generator increases the capacity utilisation of the network, it increases the likelihood of future congestion or, equivalently, reduces the time before congestion does arise for the generator that paid for the augmentation. Accordingly, the incumbent generator does face a real cost — a reduction in value related to increased future congestion — even if there is no immediate cash consequence.

[10] Under the **strong** model, if the TNSP agrees to bear the risk of compensating the generator, it is possible to envisage the case where it decides not to build new transmission immediately. The TNSP might decide to follow this path if it determined that the costs of new transmission were more than the costs of compensating the generator.

[11] The generator could, at its discretion, pocket the funds or use them to further augment transmission to obviate the increase in congestion.

5.2 Weak Model

Under this model, a generator's right to contribute towards a transmission augmentation would be clearly prescribed in the Rules and the level of generator contribution clearly defined.

Generators would be able to fund network augmentations that are *privately* rather than *socially* efficient (i.e. justified in terms of reliability or market benefits) and have that contribution formally recognised.[12] This could be achieved by allowing the generator to recommend an augmentation to the TNSP in the form of a negotiated connection agreement.

The level of contribution paid by the generator should be just sufficient to ensure that net present value of the proposed augmentation (after deducting the generator contribution from the cost) is zero.[13] Once the augmentation is completed the generator would have no formal property right in terms of guaranteed access specifications or in terms of compensation for being constrained off.

However, if a new generator connects to the network and reduces the availability of the augmented network components to the contributing incumbent generator, it would be required to pay either:

- if a backward looking approach were adopted, a contribution to the cost of the original augmentation to the generator that augmented the network[14]; or
- if a forward looking approach were adopted, a contribution to the generator that augmented the network based on the forward looking cost of augmenting the network so that the impact of the new connection is removed.

This approach could be established in the Rules through a formalised capital contribution process as part of the principles for negotiated transmission services to allow generators to nominate and contribute to the cost of a network solution.

Given no constrained-off compensation is paid directly to the existing generators, the *Weak* model removes the administrative and regulatory complexities associated with

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12 The generator would payi the TNSP the difference between the cost of the augmentation and the sum that could be justified being spent in accordance with the regulatory test for the augmentation.

13 That is, end customers (who currently pay transmission charges) would not suffer any disbenefit as a result of the generator funded augmentation. At worse, they would be no worse off. Most likely, they would benefit from the increase in competition and access to power that the increased network capacity delivers.

14 This approach is generally consistent with the obligations outlined in section 6A9.1(8) of the Rules. That is any access charges should be based on the costs reasonably incurred by the TNSP in proving the user access and (in the case referred to in section 5.4A (g)-(j)) on the revenue that is likely to be foregone and the costs that are likely to be incurred by a person referred to in section 5.4A (g) – (j) where an event referred to in those paragraphs occurs.

the *Strong* model, and can be implemented with no material change to the normal rules of operation of the NEM. The *Weak* model can also be put in place with no NEMMCO involvement.

While no constrained-off compensation is paid directly to existing generators under the *Weak* model, it is important to recognise that the out-of-pocket cost to the generator to support network augmentation would be less than would be the case under the *Strong* model (which is characterised by clear property rights). Accordingly, it cannot be argued that the *Weak* model is inferior, in an efficiency sense, to the *Strong* model. The *Weak* model is clearly more readily developed and implemented in the current NEM framework.

5.3 Preferred Approach

Both of the options identified would represent a substantial efficiency improvement compared to the *status quo,* as incumbent generators would face the cost of alleviating congestion on the network thereby providing clear investment signals of congestion. They also provide a transparent mechanism for the determination and payment of compensation to generators that have contributed to the removal of congestion. Furthermore, it would eliminate the potential for incumbents to receive any windfall gains by virtue of their geographic location.

Given the administrative and regulatory complexity associated with the *Strong* model — it would require substantial adjustment to the existing market mechanisms — and the given the identified limitations of *status quo*, the *Weak* model (appropriately parameterised) is preferred because the *Weak* approach:

- will require a limited level of regulatory and operational change as a result of the increased level of transparency provided in determining the level of contribution to be paid by a generator when augmenting the network, and in the nature of the contribution to be paid by a new entrant. It is also broadly consistent with current regulatory precedent in terms of generators paying shallow connection charges, unless they voluntarily agree to higher charges;

- will ensure a more timely response to investment decisions as generators will be able to nominate and fund projects that would have previously not be justified in terms of reliability or market benefits. That is augmentations will be undertaken that are privately efficient as well as solely socially efficient, and the difference between the socially efficient and privately efficient costs will be entirely borne by the generator, and not by customers;

- ensures that funds received from new entrants will be used to augment the network, encouraging generators to undertake network augmentations as envisaged by, but impractical under, the current regulatory framework;
- ensures that the contribution made by the new entrant is a simple transfer payment that does not affect the operation of the market; and
- removes the inherent complexities associated with the provision and subsequent funding of compensation payments, in particular compensation for generators being constrained-off as a result of a third parties actions (generator or TNSP).

This approach will have a minimal impact on TNSPs. As in the case of a negotiated connection agreement for network augmentation, it would limit the TNSPs liability to the incremental costs associated with a new connection. Furthermore, by not conferring any property rights on generators[15] it removes the inherent challenges associated with the provision of compensation, notably the risks associated with payments not being fully funded and/or hedged.

Given the *Weak* model will form part of the negotiated connection agreement, it will be subject to the dispute resolution provisions outlined in Chapter 6A, Part K, of the Rules. These provisions provide for the commercial arbitration of disputes about terms and conditions of access for prescribed and negotiated transmission services[16]. In determining such disputes, the commercial arbitrator will apply the TNSP's approved pricing methodology (for prescribed transmission services) and negotiated transmission service criteria for negotiated transmission services (which directly addresses access charges and compensation paid by new entrants), the relevant provisions of the Rules and decisions of NEMMCO or AER. Also the decision of the commercial arbitrator is binding on the parties.

[15] Other than the limited rights to some payments from new entrants that use the augmented assets.

[16] Such disputes are notified to the AER, which must then appoint a commercial arbitrator to determine the dispute. The AER's decision to appoint a commercial arbitrator is binding on the parties to the dispute.

6 Conclusion

Section 5.4A of the Rules suggests that generators can secure rights for their access to the transmission system but in practice this provision has proven ineffectual. This report has considered the limitations in the current arrangements and how these limitations can be overcome by describing a *Weak* and a *Strong* model of access right.

Under the *Strong* model, generators who contribute to network augmentations would secure firm access to the network and be entitled to defined compensation in the event of being constrained on or constrained off. It would require substantial modification to the existing Rules.

Under the *Weak* model, generators would be able to fund network augmentations that are *privately* rather than *socially* efficient (by paying the TNSP the difference between the cost of the augmentation and the sum that could be justified being spent in accordance with the regulatory test). Under this approach, where a new generator connects to the network and reduces the availability of the augmented network components to the contributing incumbent generator, the new generator would be required to compensate the incumbent generator. It thereby overcomes one of the key limitations of the current approach whilst minimising the changes required to the existing NEM architecture.

A Comparative Open Access Frameworks

A.1 Gas transmission pipelines

Capacity of a pipeline is usually measured in terms of its maximum reasonably deliverable throughput given the pipeline's technical configuration.

Pipeline access services are generally expressed in terms of those for which users have firm access (for example a forward haul service) and those for which firm access is not provided but may be available on an ad hoc basis depending on capacity availability at the time the service is requested (for example non- firm forward haul service or a backhaul service). The firm forward haul service is usually the most important service provided by a pipeline. Also in recognition of firm nature of a forward haul service a user may be provided with additional services such as a *make-up service*, which allows the user to recoup interrupted or curtailed forward haul services at a later date.

Under the National Gas Rules, the majority of Australian pipelines are defined as contract carriage pipelines, where most (if not all) of available capacity is contracted to specific users. Generally in Australia, pipeline development and its associated initial maximum available capacity is subject to foundation contracts between the pipeline developer and major users.[17]

Where a pipeline is a contract carriage pipeline, the Rules state that the access arrangement must include a trading policy which explains the rights of a user to trade their right to obtain a service to another person. For transmission pipelines, the Rules also require an access arrangement to contain a queuing policy, by which the right of access to a pipeline is determined where capacity is fully, or close to fully, utilised.

Under the contract carriage model, where pipeline capacity is sold, the access is firm – if the pipeline fails to deliver the contracted capacity due to causes within its control it will become exposed to liability under the terms of its contract.

A.2 Rail infrastructure

The capacity of rail infrastructure is usually measured in terms of the maximum available number of train paths, which can be used by train operators to run train

[17] The alternative to a contract carriage pipeline is a market carriage pipeline that relies on spot prices based on actual usage of services.

services. In addition, rail infrastructure providers can be subject to meeting transit time requirements.

Access rights of train operators in relation to usage of rail infrastructure (track and the associated infrastructure, such as signalling) are generally expressed in terms of a specified number of train services that can be operated in a given time period together with a defined transit time, subject to constraints agreed between the rail infrastructure provider and the train operator.

It is possible to define a 'timetabled' service meaning a service whose access right is defined in terms of a specified train path on a particular day and/or week (for example for intermodal operation). In contrast, a 'cyclic' service is one whose access right is defined in terms of a number of train services within a particular period of time, for example a year, month or week. For heavy haul railway infrastructure (for example coal), the nominated train services, reflecting assumptions about the operational characteristics of those services, will be used to deliver the contracted tonnage to a port.

An access right may also identify constraints that apply to train services, including maximum and minimum time periods between train services, average transit times, agreed threshold for on-time running and regularity of timetable reviews and modifications. The infrastructure provider will generally also have an ability to resume contracted capacity that is consistently under-utilised. Similarly, an access rights holder may have the right to relinquish underutilised capacity.

Depending upon the specification of the access right, there may be compensation payable where the infrastructure provider fails to deliver the access right (in frequency or transit time). In certain circumstances liability may arise where a rail infrastructure provider fails to provide a contracted path. It is fundamental to the planning and operation of a rail system that the paths assigned to a user are delivered. In this respect, access rights to rail infrastructure are firm.

A.3 Port infrastructure

A bulk port's capacity is typically defined in terms of the maximum reasonably achievable throughput capacity in a year. This level of reasonably achievable throughput will be affected by a number of factors beyond the rated capacity of individual elements of port infrastructure. For example, it will be affected by weather conditions, port operating procedures governing the interface with rail and ships, particular handling and storage requirements of cargoes and achieving standards consistent with good operating and maintenance practice.

Capacity rights are the core of an access entitlement, and are typically expressed in an access agreement as an obligation by the port to ship a specified quantity of the product in a given year. This may be supplemented by a commitment by the user to ensure, as far as practicable, even shipments of product through the terminal throughout the year (while still recognising that factors outside the parties control may result in some short term variability) and vessels of a given size presenting at the port. As for rail infrastructure, access right resumption and relinquishment arrangements may apply.

Congestion has occurred at major coal ports in recent times as a result of unexpected growth and the performance of other components of the logistics chains. However, where queue management systems have been established and implemented, congestion has been maintained at efficient levels.

In any event, a port infrastructure provider will only sell the tonnage capacity that it is physically able to deliver.