TransGrid

Tasmanian Derogations,

NEM entry and Basslink

TransGrid Submission to ACCC

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Executive Summary

- TransGrid welcomes the opportunity to comment on the ACCC Draft Determination on the Tasmanian application for authorisation of derogations and vesting contract.

- The Basslink project is intuitively beneficial – the benefits derive from the complementary structures and demand and supply characteristics of the mainland and Tasmanian electricity supply industries. However, the existence of actual benefits from Basslink is an empirical question.

- The nature and scope of benefits of Basslink depend on the:
  - Market power of Hydro Tasmania; and
  - Manner in which Basslink is operated – as a regulated or unregulated interconnect.

- The greater structural market power Hydro Tasmania has, the less important Basslink's operation is to market outcomes in Tasmania. If Hydro Tasmania's market power is less than total, then depending on Basslink's mode of operation, Basslink may induce more efficient market outcomes than would otherwise be the case.

- It appears that over time, Hydro Tasmania's market power in Tasmania may fall, increasing the importance of the Basslink operating regime.

- The Tasmanian Government recognised the importance of Basslink's operating regime and undertook to impose restrictions on Basslink's bidding. Negative bidding was prohibited and positive bidding southwards was restricted to a number of circumstances, including:

  - Technical reasons;
  - Inclusion of short-run marginal costs; and
  - Preserving Basslink's dynamic rating.

- However:
  - These reasons are not exhaustive – there may potentially be other justifications for positive southward bidding; and
  - It may be possible to justify many instances of positive bidding under the allowable circumstances and thereby evade the intent of the restrictions. This could jeopardise the benefits of Basslink.

- If the Tasmanian Government's conditions were complied with, Basslink would effectively operate as a regulated interconnector. This raises the question of the value of the Safe Harbour provisions for market network service providers (MNSPs).

- There is a range of problems with the Safe Harbour provisions:

  - Economic problems – a market-based approach to network investment could lead to under-investment due to a number of possible market failures. The ACCC appeared to recognise this in its Draft Determination. However, the ACCC:

- did not consider the full implications of the market failures, eg. free-rider issues, economies of scale and competition benefits of free-flowing links that are not affiliated to a generator;

- applied an inappropriate counterfactual by assuming that if the Safe Harbour provisions were not authorised, there would be no interconnection – the appropriate counterfactual should be a regulated investment; and

- argued that regulated interconnectors place risks on customers that MNSPs do not – this would only be the case if the transmission regulator were not vigilant.

- Possible conflict between the Safe Harbour provisions and Code objectives; and

- MNSPs are not emerging overseas.

➢ The proposed Neptune project in the northeastern United States embodies a number of conditions that do not apply to the Safe Harbour provisions. These restrictions include:

- Auctioning of 100% of transmission scheduling rights (TSRs) relating to Neptune's unused capacity;
- Neptune and its affiliates would not be permitted to participate in the auctions; and
- A "use-it-or-lose-it" feature to TSRs that require them to be made available to the market through auctions for short-term capacity to the extent the TSRs are not used by their owners.

➢ These conditions make Neptune look very similar to a regulated interconnector in the NEM context (as well as similar to the modified Basslink regime).

➢ At a minimum, the Safe Harbour provisions should be modified to:

- incorporate the Neptune/modified Basslink conditions;
- prohibit generators, particularly in the importing region, from controlling MNSPs; and
- comply with the Code objectives of open access.

➢ At the same time, the regulated investment framework should be strengthened and streamlined.

1. Introduction

TransGrid appreciates this opportunity to make a submission to the ACCC on its Draft Determination on the Tasmanian derogations from the National Electricity Code and on the Tasmanian vesting contract.

As stated in the Draft Determination, the Tasmanian Government has argued that in considering the derogations sought by Tasmania for entry to the NEM, the ACCC should consider the authorisation applications in the context of Tasmania's broader energy reform framework. The ACCC agreed that this approach was consistent with the statutory test for authorisation, which requires the ACCC to consider the public benefits and anti-competitive detriments in "all the circumstances" (page 7).

It is for this reason that TransGrid draws attention to a crucial part of the Tasmanian Government's reforms – namely the development and operation of Basslink.

The operation of Basslink will have profound consequences for the public benefits that flow from the Government's reforms, and hence the public benefits of authorising the Tasmanian derogations. The National Electricity Code (Code) envisages a market with open access transmission links and no greater barriers to inter-state trade compared with intra-state trade. Basslink's operating regime should reflect these Code principles.

TransGrid also wishes to use an examination of the Basslink operating regime for a more specific purpose – to highlight the flaws in the regulatory regime for market network service providers (MNSPs) in the NEM.

This submission argues that the current Safe Harbour provisions for MNSPs are inadequate and unsatisfactory. There is little theoretical or empirical evidence of a market-based approach to transmission leading to optimal levels of investment. The Safe Harbour provisions, by and of themselves, will not encourage outcomes that are efficient and could serve to reinforce the existing market power of generators. This appears to have been recognised by the ACCC and the Tasmanian Government through the operating conditions that will be placed on Basslink. However, TransGrid's contention is that there is nothing in the Safe Harbour provisions that prevent sub-optimal or net-detrimental outcomes occurring for other MNSPs that may be developed in the future. The Safe Harbour provisions are seriously flawed and need to be fundamentally re-examined. At the same time, the arrangements for regulated transmission investment should be clarified and improved.

2. Basslink Drivers

Basslink could potentially bring a number of benefits to the NEM. These chiefly derive from the complementary characteristics of the Tasmanian and southern mainland NEM electricity supply industries (ESIs).

The Tasmanian ESI system can be characterised as an energy-constrained system, rather than a capacity constrained system. This is a function of being comprised primarily of hydro-electric plant that depend on adequate water reserves for generation. Consequently, although Tasmanian plant are presently capable of supplying Tasmanian peak demand if sufficient water is present, problems arise when water reserves run low, due, for example, to drought conditions. Further, the Tasmanian Government has argued that the remaining large-scale hydro developments that could be economically developed are located in World Heritage areas and are therefore unlikely to be pursued. Although the Bell Bay Power Station is often used as a back-up source of power when water reserves reach critically low levels, this is a relatively high-cost option. Without another significant and reliable source of power in the State, the risk of energy constraints in the future could lead to supply shortages and compromised reliability of supply, as well as discourage new industry from locating in Tasmania, with consequent loss of, or foregoing of increased, output and jobs.

On the other hand, the mainland NEM ESI could be characterised as a capacity constrained system. Thermal plant are the key source of power, with the exception of the Snowy scheme plant. The southern regions of the NEM, Victoria and South Australia, typically have enough capacity to satisfy demand for most of the year, but have recently fallen short of demand over peak summer periods.

In this context, the development of an interconnector, such as Basslink, between Tasmania and the southern regions of the NEM appears to be a project worthy of serious consideration. It would be logical for Tasmania to export power to the mainland at peak times, when mainland prices are relatively high, and import power at off-peak times when prices are relatively low. In this way, scarce Tasmanian water supplies can be conserved for peak times when the overall market's willingness-to-pay for energy is high. Meanwhile, mainland NEM peak demand can be satisfied by relatively low-cost Tasmanian exports. This would be beneficial for a number of reasons. Assuming competitive bidding, a free-flowing link should lead to:

- Lower mainland peak summer prices, particularly in Victoria and South Australia.
- Lower Tasmanian prices when water reserves are low.
- Postponement of the development of new peaking plant in Victoria and South Australia.
- Postponement of the development of new gas-fired generation in Tasmania following the development of the Tasmanian Natural Gas Project.

- Improved reliability of supply for Victorian, South Australian and Tasmanian customers, in light of the characteristics of the demand and supply balance in the relevant regions.

In short, Basslink could aid the efficient use of existing generating plant in the NEM and improve reliability of supply. These are the key motivations for the development of new interconnectors and, as such, the principles behind the development of an interconnector between Tasmania and the mainland are sound. However, whether the project actually creates net benefits is obviously an empirical question.

However, it should be noted that the benefits discussed above would be maximised if Basslink were bid at short run marginal cost (ie. zero price differential). To the extent that Basslink flows were constrained by positive bidding, the extent of the public benefits produced by the development of Basslink would be reduced.

3. The Basslink Operating Regime may be crucial

3.1 Initial Basslink operation

Under the Basslink Services Agreement (BSA) between Basslink Pty Ltd (BPL) and Hydro Tasmania (HT), BPL will be paid a fixed fee and HT will receive an amount of money equal to the value of the settlement residues accrued by the link.

The BSA provides HT with certain rights for the bidding of Basslink into the NEM. The BSA:

- requires BPL to bid the full import capacity of Basslink at zero price unless otherwise directed by HT;
- enables HT to direct BPL to bid Basslink at a positive price in either direction; and
- enables HT to request BPL to bid Basslink at a negative price in either direction, but allows BPL discretion as to whether to implement such a request.

The nature and scope of public benefits from Basslink depend on two variables:

- The market power of HT, which in turn is dependent on the Tasmanian market structure and HT's contracting position (discussed in section 3.2).

- The manner in which Basslink is operated – broadly, as an unregulated or regulated interconnect (discussed in section 3.3).

The greater the ability of HT to withhold capacity and increase prices in the Tasmanian region of the NEM under a wide variety of demand and supply scenarios, the less important is the issue of how Basslink operates. This is an almost tautological proposition – if it can be demonstrated that HT has a strong degree of market power in the Tasmanian region regardless of what flows are along Basslink, then the regime under which Basslink operates is of little importance to market outcomes and public benefits in Tasmania.

However, to the extent that HT does *not* have this ability, the operating regime of Basslink is potentially more important. For example, if HT is highly contracted, and therefore must bid a large proportion of its capacity in a manner so as to be dispatched, the more important the way in which Basslink is operated becomes, as this will intimately affect HT's behaviour and hence, market outcomes. Consequently, determining the public benefits that could flow from Basslink is a complicated interactive exercise contingent on HT's market power and the Basslink operating regime.

3.2 Market power of HT

The market power of HT depends on the Tasmanian market structure (section 3.2.1) and the level of HT's contractedness (section 3.2.2).

3.2.1 Tasmanian market structure

At this stage, the Tasmanian Government proposes to retain HT as a single hydro generation business in Government ownership. However, in addition, the Government will separate the Bell Bay power station from HT and convert it to gas over time. One unit of Bell Bay (approximately 114MW) will be owned and operated by a separate Government business from the date of NEM entry and should be operational as a gas-powered plant by mid to late 2002. The second unit will be owned by a joint venture between the Tasmanian Government and Duke Energy and will be converted to gas (234-365MW) by early 2006.

According to the Draft Determination, Tasmanian peak summer demand runs at approximately 1400-1600 MW, whereas summer off-peak demand is approximately 960 MW.

Leaving to one side the impact of HT's contracts, in basic structural demand and supply terms, it is clear that HT has a very large degree of market power in the Tasmanian market for a great deal of the time. With off-peak summer demand at 960 MW, it is clear that even with Basslink running at 300 MW and both Bell Bay units running at full capacity, HT will be required to generate. The Loy Yang Power submission to the ACCC argues that this will occur at least 60% of the time.

At such off-peak times, HT could have an incentive to:

- bid its run-of-river generation at very low prices to get dispatched;
- allow other generators to be dispatched and allow even a regulated Basslink to send southward flows up to their maximum; and
- use its 'must-run-to-meet-demand' status to set the regional price well above the competitive level.

The quantity that HT would lose to other on and off-island generators could be more than compensated by the higher prices it would receive on its limited output. HT, through Basslink, would have even greater ability to set high regional prices at peak times when mainland demand was higher and hence available flows from the mainland through Basslink were lower. This means that there may be little commercial incentive for HT to bid Basslink into Victoria at peak times as HT could apply its market power and sell at the higher prices it could set in Tasmania.

Under these circumstances, the manner in which Basslink operates is unlikely to make much difference to market outcomes in Tasmania. HT would be able to set very high Tasmanian prices regardless of the mode of operation of BL.

3.2.2 HT degree of contractedness

The scenario discussed above needs to be modified by HT's contractual commitments. HT has a vesting contract with the Tasmanian distributor, Aurora, for non-contestable load (approximately 40% of Tasmanian load). This amount should fall over time as the franchise opens.

At the same time, HT has other contracts for Major Industrial (MI) customers. Several submissions argued that the combination of vesting contracts and MI contracts leaves HT almost fully contracted until late 2003 and highly contracted until the commencement of full retail contestability in 2007.

To the extent that HT was both highly contracted and risk averse, in order to completely manage its risks it would need to bid in a way that ensured this large contracted quantity was dispatched (to completely avoid the risk of unfunded difference payments). This could mean that at these times HT would be more or less forced into competing for output and consequently the Tasmanian price would reflect the operation of a competitive market. Under these circumstances the mode of operation of Basslink would have a bearing on the outcomes in the Tasmanian market.[1] On the other hand, if HT were risk-seeking, it may be willing to risk unfunded difference payments for the purpose of forcing up the Tasmanian price. Under these circumstances, the operation of Basslink could have less impact on HT's behaviour.

3.3 Manner in which Basslink is operated

Depending on the effective market power of HT and HT's degree of risk aversion, the manner in which Basslink is operated could have implications for the benefits conferred by Basslink in both the current timeframe (section 3.3.1) and in the future (section 3.3.2). These implications have led to undertakings from the Tasmanian Government (section 3.3.3) that appear to reduce the scope for operational discretion over Basslink and effectively convert it into a regulated interconnect. This quasi-conversion in turn begs the question of the value of the existing MNSP framework (section 3.3.4).

3.3.1 Current implications

From the preceding discussion, it is clear that the level of HT's contract cover can be an important determinant to the appropriate operating regime for Basslink. Other things being equal, the greater HT's contractedness, the greater incentive HT will have to be dispatched. This means that whether Basslink is regulated or unregulated takes on more importance for market outcomes in Tasmania and the rest of the NEM. For example, if Basslink is unregulated, under the initial unrestricted regime,

[1] While contract cover could, in principle, alter HT's degree of market power, HT could neutralise this risk by entering into contracts with other generators (or even customers) to help manage circumstances that would give rise to unfunded difference payments, and thereby restoring its market power.

HT could effectively prevent Basslink being dispatched southward by requesting that it be bid at a positive price. This would allow HT to be dispatched in line with its (high) degree of contractedness, as well as maintain high prices for the remainder of its uncontracted load. This would also influence future contract prices. On the other hand, if Basslink were regulated and HT were highly contracted, HT would have to bid its contracted capacity at a relatively low price in order to manage its contract risk.

Another issue to consider is the value of the inter-regional settlement residues (IRSRs) for southward flows on Basslink. If HT could control Basslink flows, these units would be likely to have little value for other participants. This is likely to be an enormous disincentive to the development of competition in the Tasmanian contract market.

3.3.2 Future implications

Even if Basslink's status does not *currently* make a material difference to price outcomes in Tasmania due to HT's high level of market power, there are likely to be serious implications flowing from Basslink's status in the future under a range of scenarios, for example:

- if HT is disaggregated and control over the bidding of Basslink is allocated to one generator that does not otherwise have the degree of market power that HT currently has;
- loss of a major industrial customer creates excess supply in Tasmania, effectively reducing HT's market power; and
- new on-island generating plant is developed, again reducing HT's market power.

Under all these scenarios, giving HT (or the successors of HT) effective control over the bidding of Basslink as an unregulated interconnector would cause outcomes that were dramatically different from those that would be likely to occur if Basslink were a regulated interconnector. In other words, HT would be able to substitute the possible loss of structural market power with market power derived from the control of Basslink. In a reduced market power scenario, particularly if HT were effectively disaggregated, a regulated Basslink would provide competition to on-island generators, whereas an unregulated Basslink could be used to shut out competition from the mainland and provide HT (or its successors) with a market for any surplus capacity that would give it a competitive advantage over other on-island plant, by, for example, providing HT with extra funds to cross-subsidise sales in the Tasmanian contract market. Effectively, this would imply that Tasmanian small customers would continue to underwrite Basslink's costs and profits.

3.3.3 Tasmanian Government undertakings

A number of submissions to the ACCC's draft determination on the Tasmanian derogations argued that the Basslink arrangements would be seriously detrimental to competition. In response, the Tasmanian Government undertook to disallow HT from exercising its option to bid Basslink at negative prices, or at positive prices southwards unless there were technical or economic reasons, *including*:

- technical (including environmental) reasons associated with operating the link such as to prevent the link from rapid and multiple switches in direction;
- pricing efficiency to include any short-run marginal costs incurred in operating the link; and
- to preserve Basslink's dynamic rating.

In addition, the Tasmanian Government indicated that southward IRSRs associated with Basslink would be auctioned off in a manner similar to existing IRSR auctions in the NEM. HT would be excluded from the auction and an independent and unpublished reserve price would be set. One change from NEM arrangements would be that units would be sold at prices bid rather than a common clearing price based on the highest bid.

The ACCC appeared to accept that these modifications would be enough to ensure public benefits. Indeed, on face value, if these changes were properly implemented, they would effectively make Basslink a regulated interconnector. However, for two reasons it is not clear how rigorously these modifications would be imposed and enforced. First, the justifications for positive southward bids permitted by the Tasmanian Government are not phrased to be exhaustive – there could quite conceivably be other justifications that allow the exercise of market power by HT. Second, the allowed justifications themselves do not appear entirely robust or credible. For example:

- Technical reasons can often be used to justify all sorts of bidding behaviour – it is very difficult to disprove that certain positive bids were not made for technical reasons. This is a problem that also besets attempts to limit rebidding in the NEM and is behind NECA's attempt to reverse the onus of proof on generator rebidding.

- Short-run marginal costs in operating the link should be minimal and should not warrant positive bids. TransGrid's concern is that HT will use this exception as an opportunity to recover the annual facility fee to BPL that may not be covered by sales of IRSRs on the link due to the way the link operating arrangements are perceived by the market.

- If Basslink southward flows are limited to 300 MW, it is unclear why such flows would need to be reduced by positive southward bids to preserve Basslink's dynamic rating. If anything, this could justify positive bids on northward flows, to reduce such flows from 600 MW to 300 MW. However, the ACCC has stated that it believes that there are few major competition concerns from allowing Basslink to bid positively into Victoria.

If Basslink is properly held to the Government's conditions, then it will effectively operate as a regulated interconnector. However, to the extent that HT/BPL can evade the conditions, it can effectively operate as an unregulated interconnector. Even if Basslink were to comply with the conditions, it would be necessary for a body such as NECA to engage in costly near-constant monitoring of Basslink's bidding behaviour. Therefore, the 'best' case scenario is that Basslink operates similarly to a regulated interconnector with higher monitoring costs.

3.3.4 Value of the MNSP concept

Assuming that the ACCC approves of the Tasmanian Government's conditions – which appears to be the case from the text of the Draft Determination – this brings into question the value of an unregulated approach for Basslink, other than getting around clumsy processes for regulated interconnects. This interpretation is supported by the Tasmanian Government information paper entitled "Meeting Tasmania's Energy Needs for the 21st Century, A Competitive Future". This publication states that the uncertainty associated with the definition of the (then) NEMMCO test for the approval of regulated interconnectors under the Code and the timing of the approval process for a regulated interconnector effectively ruled this out as a viable option for Basslink (page 21).

Indeed, by creating uncertainty for regulated interconnector projects, the current MNSP framework could actually have detrimental impacts on the NEM. Neither the Safe Harbour provisions, nor the ACCC's Draft Determination on the Transmission and Distribution and Pricing Review, nor the regulatory test are geared towards resolving a consistent and workable framework for interconnection in the NEM. The failure of the market and Code arrangements to at least enable *evaluation* of interconnector projects properly and within reasonable timeframes has become a major concern of the NEM Ministers, the National Competition Council and groups such as the Business Council of Australia.

The Loy Yang Power submission to the ACCC argued that the Basslink situation would be entirely different if Basslink were operated by an independent entity. If this were to happen, it is argued, the link owner would operate Basslink to maximise link revenues rather than HT's profitability.

However, this raises two issues. First, as discussed below, maximisation of link revenue may not be consistent with economic efficiency. Second, it should be noted that the Tasmanian Government argued that part of the reason HT was not further dis-aggregated was to maintain an entity of sufficient size to underwrite the Basslink project.

If this explanation is taken at face value, it appears to place the Basslink MNSP concept in a catch-22 position: Basslink would only be developed if it could be operated by a large entity with market power. But the development of Basslink under these conditions does not lead to the maximisation or even creation of public benefits, thereby necessitating conditions that effectively force it to operate as a regulated interconnector. Perhaps Loy Yang Power or other proponents of the MNSP approach could argue that there are sufficient incentives for parties who are either truly independent or have an interest in maximising power exports to underwrite MNSPs. However, that is an argument that needs to be made and examined both in theory and against practical experience.

4 MNSP arrangements are sub-optimal

Basslink will be operated as an unregulated interconnector by BPL, who will be registered with NEMMCO as a MNSP. The ACCC gave interim authorisation in mid 1999 to the 'Safe Harbour provisions' for MNSPs and considered the provision again in its Draft Determination on Network Pricing and MNSPs published in December 2000.

TransGrid believes that the Safe Harbour provisions are deeply flawed for two key sets of reasons. These are:

- Economic problems afflicting MNSPs (section 4.1).
- Possible conflict with NEM objectives (section 4.2).

4.1 Economic problems with MNSPs

4.1.1 General concerns

The problems with an unregulated approach to network investment in the context of a nodal or near-nodal pricing market model are well known. The key issues were raised in a paper by the Regulator-General of Victoria, John Tamblyn, in a recent speech in Malaysia.[2] In summary, they were:

- Transactions costs of organising user coalitions to pay for new investment – in the absence of a significant coalition, there is likely to be under-investment in the grid.

- Practical difficulties of defining financial transmission rights (or transmission congestion contracts) due, for example, to the possibility of loop flows in a meshed network.

- Economies of scale or scope in grid investment mean that the market may under-invest in the grid.

- Externalities caused by investment in a network – an augmentation or new link will affect flows in other parts of the grid, which could distort investment decisions unless taken into account.[3]

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[2] See Tamblyn J, Managing Electricity Transmission Network Congestion, APEC Energy Regulators Forum No. 9, Kuala Lumpur, May 17-18 2001, pages 9-10. See also Cameron L, Transmission Investment: Obstacles to a Market Approach, Electricity Journal, March 2001, pages 25-38.

[3] Some of these difficulties (eg. flow externalities, bullet point 4) may not exist under the Safe Harbour provisions, due to the direct current (DC) nature of the links permitted (see Hogan, W.W, Market-based transmission investments and competitive electricity markets, Centre for Business and Government, Harvard University, August 1999, page 33).

Further, under the Safe Harbour provisions, there is no restriction on generators, even in an importing region, controlling MNSPs. Therefore, instead of generators in an importing region competing with a linked competitive market, the generators in the importing region are effectively competing with, *at best*, only one additional generator.

None of these problems imply that an unregulated approach to network investment cannot work. Also Tamblyn's paper does clearly set out the not-inconsiderable problems associated with a regulated approach. However, it is clear that an unregulated approach does have flaws that are not adequately addressed by NECA's Safe Harbour provisions.

4.1.2 ACCC approach in Draft Determination

The ACCC conceded in its Draft Determination that the Safe Harbour provisions may not be consistent with optimal investment decisions:

> *"…the Commission recognises that the incentive placed on the proponents of a market network service will be to preserve price differentials between regions, either by constructing a link of smaller than socially-optimal capacity and/or by restricting flows between the regions. Further an MNSP may bid its capacity into the NEM at high prices, though such strategies will be constrained by the bid prices of competing generators and interconnectors. As such the MNSP will possess a degree of market power and may be able to influence spot prices, especially by withdrawing capacity from the spot market."* (page 97)

Nevertheless, the ACCC argued that public benefit could flow from the introduction of MNSPs for the following reasons:

- MNSPs' incentives to withhold capacity or under-invest could be diminished by contracts;
- MNSPs provide a source of competition for generators in the importing region that would not exist without the MNSPs; and
- risks of MNSPs fall on investors rather than customers.

It is worth examining each of these in turn.

4.1.3 Contracts

The ACCC argued in its Draft Determination on MNSPs that the incentive on MNSPs to withhold capacity will be muted where proponents have sold the rights to the revenue stream, particularly where the bulk of the MNSP's revenue derives from long term contracts.

Whilst contracts for the operation of MNSPs may help to underwrite investment and diminish incentives to withhold capacity or under-invest in the grid, this is subject to a number of caveats:

- Coordination/free-rider problems and transactions costs;

- Economies of scale;
- Limitations to the number of links that can be established across a constraint; and
- Neglect of competition benefits of transmission links.

Coordination/free-rider problems and transactions costs

As outlined in both John Tamblyn's and Lisa Cameron's papers cited above, there may be little incentive for any given customer in an importing region to sign contracts with an MNSP proponent where the customer is only one of many beneficiaries. The customer may be better off by allowing the MNSP to operate as a merchant link earning revenue from arbitrage, rather than underwriting the cost of the link itself to ensure that the MNSP operates to minimise price differentials between regions. However, from the point of view of all customers in the importing region and overall economic efficiency, the best outcome is likely to be a link that is free-flowing.

Economies of scale

Where there are increasing returns to scale from transmission investment – which is typical – it is almost impossible to fund transmission investment through rights to transmission residues. These increasing returns derive from the high fixed costs of transmission investment. One study finds that congestion residues will only cover about one-third of total investment costs.[4]

Limitations to the number of links that can be established across a constraint

Whilst there may be relatively few limits on the number of generators that can be built in, say, South Australia or Tasmania (although it is understood that there may not be any new hydro plant in Tasmania), there are limits on the number of links that can be developed between these regions and others. These limits arise from:

- System constraints – the upstream and downstream capacity of networks may be insufficient to accommodate more than, say, one link between New South Wales and South Australia.

- Legal constraints – need for property rights and environmental regulation may restrict the number of links that can be built.

Therefore, allowing an entrepreneur to build an interconnector that cannot be duplicated allows that entrepreneur an opportunity to potentially control a cheap source of power that cannot be duplicated – in other words, there are high barriers to entry for such investment in the future. This scenario creates a substantial value on ensuring the initial investment is of an efficient size in the long run. Consequently, there is a tension between 'lumpy' investment (that capture scale benefits but involve some risks of over-capitalising) and smaller incremental investment (that are more flexible, but potentially more costly in the longer term).

[4] Perez-Arriaga et al, cited in Cameron, page 30.

Competition benefits

Extended or augmented regulated transmission links increase the size of the overall market and thereby enhance competition for delivered electricity in a way that additional generation or MNSPs do not. It has been suggested that where market power is an issue, it is optimal to expand transmission investment by more than the savings in dispatch costs (see Cameron article page 29). A free-flowing transmission link reduces the relative power of any one generator by exposing it to competition from a range of generators in other regions rather than to a single additional generator. Further, as discussed above, there is no prohibition in the Safe Harbour provisions on an MNSP being owned or controlled by a generator in an importing region. This means that at best, an MNSP will lead to a single additional competitor in the importing region and at worst, no additional competitor.

Therefore, a regulated transmission investment could lead to lower prices, other things being equal, than an equivalent increase in generation or MNSP capacity. Whilst prices changes in themselves do not equate to overall welfare benefits, they may lead to increased consumption, which would increase overall consumer and producer surpluses.

Further, transmission augmentations provide a number of benefits such as improved reliability, reduced reserve requirements and savings in ancillary services costs.

4.1.4 Source of Competition

The Draft Determination states:

> *"Thus while it is clear that the proposed arrangements may be sub-optimal, the Commission considers there will be increased availability of electricity in the importing regions compared to the pre-existing circumstances where the market network services do not exist."* (pages 97-98).

However, in TransGrid's view, the ACCC did not apply the appropriate counterfactual. Rather, the ACCC applied a simple 'with or without' test. In the absence of MNSPs, the likely counterfactual is a regulated investment. This is because in almost all, if not all, cases, the public benefits of a link will exceed the private benefits to any one proponent or a group of investors or underwriting contractors. The Regulatory Test provides scope for MNSPs to game the test by posing as committed or anticipated projects when they are at best tentative. Therefore, the absence of MNSPs could enhance the prospects of proposed regulated links passing the regulatory test. It is accepted by the ACCC that free-flowing regulated links are more likely to be socially optimal in size than market links and cannot effectively withhold capacity. Therefore, the counterfactual to the authorisation of the Safe Harbour provisions could actually be greater competition for generators in importing regions and hence more efficient market outcomes in the long run.

This conclusion leaves the public benefits of the Safe Harbour provisions in substantial doubt.

4.1.5 Risk

One of the purported benefits of MNSPs is that the risks and costs associated with the investment are borne by the investments proponents, rather than customers. However, TransGrid understands that regulated investment proponents bear the risk of asset stranding and optimisation, not customers. If, in practice, under-utilised investments are not written down by regulators, that is an issue pertaining to the performance of the regulator, not to the regulated investment framework. Moreover, the risk of regulatory asset stranding is arguably very low due to the requirements of the regulatory test (arguably more rigorous than many private investment evaluation processes).

At this stage, NECA maintains that regulated transmission investment would continue to play a role in the market. However, given the well-known flaws in the regulated investment process in the Code, (as identified by the Interconnector Process Working Group), it is difficult to have any confidence in this proposition. Moreover, the NEM jurisdictions have and would argue that the nature of the NEM transmission investment regime is a matter that they should have strong input into, as it relates to a several key objectives of the NEM as discussed below.

4.2 NEM objectives

In terms of NEM policy principles, it is necessary to reconcile MNSPs with the objective of an open access transmission regime. The market objectives in clause 1.3(b) of the Code state that, *inter alia*:

(2) customers should be able to choose which supplier (including generators and retailers) they will trade with;

(3) any person wishing to do so should be able to gain access to the interconnected transmission and distribution network; and

(6) the provisions regulating trading of electricity in the market should not treat intrastate trading more favourably or less favourably than interstate trading of electricity.

There is a real issue whether these objectives will be satisfied by MNSPs operating within the Safe Harbour framework. Whilst the Basslink conditions effectively convert Basslink into a regulated interconnector, with settlement residue auctions open to all, there is no inherent requirement in the Safe Harbour provisions for this to occur in relation to a possible future MNSP proposal.

5 MNSPs not emerging overseas

The Tamblyn paper notes that an unregulated regime for network investment has not been properly tested anywhere in the world. While nodal pricing markets exist in several places – the Pennsylvania-New Jersey-Maryland (PJM) system in the United States, Argentina and New Zealand – no significant network investment has taken place in any of these systems. In some cases, investment has not yet been required (eg. PJM), but in others cases (New Zealand and Argentina), FTRs have not even been defined or worked effectively.

Further, no equivalent of MNSPs are part of the framework in the recent UK reforms where market power was a key concern.

One possible exception to the dearth of international experience of unregulated transmission investments is the proposed Neptune project discussed in section 6 below.

In light of the lack of experience or evidence of a market-based approach to transmission investment elsewhere around the world and the many theoretical concerns surrounding a market-based approach discussed above, the question arises – is Australia engaged in a global experiment on the basis of highly questionable analysis? TransGrid would argue that it is inappropriate for Australian regulators to conduct experiments in such circumstances, particularly when NEM jurisdictions and other important stakeholders have raised such serious concerns about the lack of progress on interconnection processes and development.

6 Neptune project

The Neptune project provides an example of a massive unregulated transmission project that could provide many of the benefits of both regulated and unregulated projects with few of their respective drawbacks.

The Neptune project consists of several thousand miles of undersea HVDC cables between capacity-rich areas in Maine, New Brunswick and Nova Scotia in Canada and capacity-constrained markets in Boston, New York City, Long Island and Connecticut. It will also provide additional interconnection between the NEPool, New York and PJM regions and facilitate inter-pool trading, thereby providing the basis for an integrated north-eastern RTO.

6.1 Benefits

The key stated benefits of the Neptune project are as follows:

- Lower prices and increased reliability.
- Neptune will assume risks of entire project.
- Neptune arrangements will be open access and for entire capacity.

6.2 Neptune application to FERC

In its application to the Federal Energy Regulatory Commission (FERC), Neptune argued that it would be funded and would operate through the sales of Transmission Scheduling Rights (TSRs). TSRs for the *entire Neptune capacity* were proposed to be sold through negotiated contracts and 'open season' auctions that would be for both long and short-term capacity. There would also be a secondary market with TSRs being able to be broken down to increments of as little as 1 MW for 1 hour.

Up to 30% of TSRs for Neptune's total capacity were proposed to be available through negotiated contracts between Neptune and non-affiliated parties. A further 50% of TSRs would be auctioned on a long-term basis (TSRs extending for at least one year). The remaining 20% of TSRs would be for short-term capacity (less than one year). Capacity would also be auctioned on a non-firm basis for "overload" capacity and counterflows.

Neptune also argued that it should be compensated for system benefits such as increasing existing transfer capacity, voltage support and improved reliability.

6.3 Addressing market power

Neptune agreed to restrict the potential market power of the project by offering the following undertakings:

- Auctions would cover 100% of Neptune's unused capacity.

- Neptune and its affiliates would not be permitted to participate in the auctions.

- A "use-it-or-lose-it" feature to TSRs that require them to be made available to the market through auctions for short term capacity to the extent the TSRs are not used by their owners.

- Limits on Neptune's pricing – it appears that the price of TSRs would be capped at the cost of 'regulated' transmission expansion by the relevant independent system operators.

Interestingly, it appears that Neptune would not have any strict "firm access" obligations. Capacity curtailments due to scheduled or forced outages would cause TSRs to be reduced on a pro rata basis – first non-firm TSRs and then "firm" TSRs.

6.4 FERC decision

FERC approved Neptune's application on a number of conditions:

- Neptune would be required to joining an adjacent regional transmission organisation (RTO) and work with the North-eastern RTO to develop tariffs.

- Neptune must comply with approved protocols if its facilities connect with existing transmission grids.

- Negotiated contracts will not be permitted – FERC required that all capacity for merchant transmission projects be made available solely through the auction process.

- FERC refused to compel payments to Neptune for system benefits – these could be negotiated privately or else Neptune would lose its merchant status.

6.5 Conclusion

The Neptune project embodies the claimed benefits of market discipline on transmission investments, whilst attempting to address many of the concerns surrounding an entrepreneurial approach to unregulated investment. Capacity withholding opportunities are minimised and although it is impossible to tell whether an alternative 'regulated' proposal would lead to greater capacity being developed, Neptune at least involves the sale of the *entire* capacity of the project, including unused TSRs on a use-it-or-lose-it basis.

Notably, however, Neptune does not offer firm access. Therefore, the notion that a market approach to transmission investment combined with nodal pricing is required in order to, or would, offer firm access if implemented in Australia is not supported. Further, Neptune would not receive automatic payments for any 'system benefits' it may confer. This approach is instructive to the treatment of MNSPs, embedded generators and other parties that may relieve constraints through their activities in the NEM and have argued for similar 'automatic' rebates or rights.

The amendments to the Basslink regime, if complied with, make the project look very similar to Neptune. The Basslink conditions/Neptune approach could provide a positive way forward for the development of an entrepreneurial interconnector framework for the NEM, if combined with necessary improvements to the framework for regulated interconnectors to prevent the gaming of regulated proposals. Indeed, it should be noted that TransEnergie (the proponents of Neptune) accepted these restrictions in the United States. Therefore, there appears to be no reason, in principle, why TransEnergie should not accept full authorisation of the Safe Harbour provisions being made conditional on FERC's Neptune conditions.

7 Conclusions

The operation of Basslink is, by the Tasmanian Government's own admission, fundamental to the public benefit assessment of the Tasmanian derogations.

This submission examines Basslink as a case study for questioning the appropriateness of the existing Safe Harbour provisions for MNSPs. What is clear is that the existing Safe Harbour provisions need further review and reform in order to provide a reasonable level of confidence that they are likely to lead to net public benefits.

The key problems associated with the Safe Harbour provisions are:

- Potential market failures associated with a market-based approach to transmission due to:
    - free-rider effects/coordination difficulties;
    - economies of scale in transmission development;
    - natural monopoly characteristics such as limited scope for developing links between any two regions; and
    - neglect of market power benefits of transmission links;
- No in-built restriction on generators, particularly those in importing regions, from controlling MNSPs.
- Possible conflict with Code objectives, particularly where a region is only connected to the NEM via an MNSP.

Further, if the Safe Harbour provisions were not authorised, the appropriate counterfactual that should applied examined is a regulated alternative rather than no investment at all. In this context the regulatory test for transmission investment:

- addresses most (but not all) of the problems that affect market-based approaches to transmission; and
- if the transmission regulator performs adequately, does not subject customers to significant risks of paying for uneconomic investments.

The approach to market-based transmission indicated by the FERC decision on the Neptune project offers a reasonable solution to a number of the problems associated with a market-based approach. The modified Basslink regime, if complied with, would encompass many of those benefits. Therefore, a generalisation of the Basslink conditions should, at a minimum, be written into Safe Harbour provisions. This would include a prohibition on generators, particularly in an importing region, controlling the bidding of MNSPs, auctioning all settlement residue rights and most importantly, prohibited or highly restricted non-zero bidding.

However, even if the Safe Harbour provisions were modified in this manner, MNSPs would still:

- probably be smaller than socially optimal;
- require constant monitoring of bidding behaviour;

- not provide firm access;
- would be paid for by customers/taxpayers in importing regions rather than all customers across the NEM; and
- provide uncertainty for proponents.

The Tasmanian Government itself concedes that it pursued an MNSP framework for Basslink because of the uncertainty and delays surrounding the process for regulated interconnects. This provides clear guidance to the jurisdictions, NECA and the ACCC as to what matters require attention for CoAG and NEM objectives to be achieved.

In this context, TransGrid supports:

- Review of the Safe Harbour provisions to:

    - reflect recent international developments;
    - ensure transmission capacity cannot be controlled by generators; and
    - explicitly address known transmission market failure issues (refer paper by John Tamblyn to APEC); and

- Streamlining of regulated interconnect development processes by:

    - linking the investment framework to transmission network service provider accountabilities – this should be at least partially achieved by the recent Network and Distributed Resources package;
    - finalising transmission pricing arrangements; and
    - ensuring adequate regulated returns for proponents.