

25 February 2009

Dr John Tamblyn Australian Energy Market Commission Level 5, 210 Elizabeth Street SYDNEY NSW 2000

By email: submissions@aemc.gov.au

Dear Dr Tamblyn,

# AEMC REVIEW OF ENERGY MARKET FRAMEWORKS IN LIGHT OF CLIMATE CHANGE POLICIES - INTERIM REPORT

Origin Energy Limited (Origin) appreciates this opportunity to provide a response to the Australian Energy Market Commission's (AEMC) 1st Interim Report. From Origin's perspective this Review is critical given the considerable and immediate challenges facing the energy market in meeting the federal government's climate change policy objectives.

This submission will focus on three of the key priority areas identified by the AEMC in its Interim Report:

- 1. Origin's most pressing concern is the extent to which existing regulated retail pricing arrangements will be able to effectively pass through carbon costs associated with the new Carbon Pollution Reduction Scheme (CPRS). In Section 1 of the submission we discuss the urgent need to increase the flexibility of existing arrangements to accommodate fluctuations in carbon cost. It is imperative that the Council of Australian Governments immediately commences a process for bringing into practical effect amendments to the Australian Energy Market Agreement that will allow carbon pass through to be explicitly accounted for in retail pricing methodologies. This will be critical to ensuring the viability and sustainability of the energy market under climate change policies.
- 2. We strongly support the need to address remote generation issues in the context of a highly challenging expanded 2020 Renewable Energy Target (RET). Renewable resources near the existing network are quickly being exhausted, which means that more remote renewable resources will need to be accessed if the RET is to be achieved. However, the existing regulatory transmission framework does not support investment in remote generation. In Section 2 we discuss the benefits of AEMC's Option 2 for addressing the remote connection issue. This is likely to be the best option for achieving the more dynamic and strategic approach to transmission investment required for meeting climate change policy objectives. At the same time this option ensures the risks of asset stranding are appropriately shared between end users and market participants.

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3. Exposure to congestion is likely to become an increasingly material problem for market participants under climate change policies. We are concerned that the existing access and transmission investment arrangements may not be robust or responsive enough to manage it. This may discourage new entry and damage competition, which in turn may undermine the ability of climate change objectives to be achieved. Origin considers additional approaches to manage congestion may be needed. We outline one such approach in Section 3 of this submission.

The AEMC has also identified short-term supply reliability as a key issue for further review. We consider that resolution of the other key risk areas identified by the AEMC is the key to ensuring supply reliability will be maintained under climate change policies.

Finally, while we have some reservations about the AEMC removing gas market frameworks from further consideration under this Review, we expect that any further issues of concern to participants can be addressed through the separate consultation processes currently underway on various aspects of gas market design (with responsibility for managing these processes soon to be transferred to AEMO). However, we urge the AEMC to keep a watching brief on these processes to ensure they fully capture the evolving interactions between gas and electricity markets expected under climate change policies.

If you would like to discuss any aspect of this submission please do not hesitate to contact Con van Kemenade in the first instance on 02 8345 5278.

Yours Sincerely,

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# 1. Retailing

- Q1 Do you agree that the current inflexibility in the retail price regulatory arrangements is a significant issue that should be progressed further under this review? If not, what are your reasons for this position?
- Q2 Do you agree that the limitations with the current ROLR arrangements are a significant issue that should be progressed further under this Review? If not, what are your reasons for this position?
- Q3 Are there any additional options that could supplement the process currently under investigation to address these issues?

Origin strongly supports the AEMC's view on the problems incumbent in jurisdictional retail price regulatory arrangements. Even in an environment without the climate change policies, the current regulated retail price regimes are insufficiently flexible to ensure that the fundamental objective of efficient retail pricing is consistently achieved. Under the CPRS and expanded RET the situation is likely to become even more problematic.

Efficient retail pricing and specifically the ability of retailers to fully pass through carbon costs is important as it is central to delivering an appropriate price signal to consumers and stimulating an effective response. Additionally, efficient pricing has implications for the viability of retailers and the market as a whole. In an environment of escalating retailer costs due to for e.g. to the CPRS, expanded RET and the various energy efficiency schemes, the likelihood of retailer distress will increase if retail prices are not truly cost reflective.

We are therefore pleased that the AEMC has identified this issue as a key priority for the remainder of this Review.

As discussed in our submission to the Scoping Paper, we believe that efficient retail pricing is achieved most effectively through promoting competitive markets, where market forces will ensure that retail energy prices reflect the efficient costs of supply. Whereas regulated pricing tends to create economic inefficiencies that depress rather than promote retail competition, deregulation would provide retailers with the latitude to adjust prices in response to the changing cost environment.

Unfortunately, however, it appears unlikely that retail deregulation will occur in all NEM jurisdictions before the start of the CPRS in 2010. We recognise that the AEMC has not yet completed its review into the effectiveness of retail competition across all jurisdictions, but even where these reviews have been completed (e.g. South Australia) there appears to be reluctance by State officials to commit to deregulation. In our view, a number of jurisdictions do not appear to have vigorously pursued the market and/or policy reforms that would support the progressive attainment of price deregulation objectives that were set out by Energy Ministers in the Australian Energy Market Agreement (AEMA).

As a consequence, this places a significant responsibility on relevant jurisdictional Ministers and/or their pricing regulators to ensure that the retail pricing framework



adequately provides for the costs and risks facing retailers in the provision of energy to their customers.

Origin stresses in the strongest terms to the AEMC and the MCE the critical importance that their decisions will have on the competitiveness of the retail market and ultimately on the viability of retailers to service retail customers. It is a matter that must be given the highest priority. Significant retailer failure arising from regulatory decisions will undermine the very foundations of the Australian energy market.

Regulated retail prices in a dynamic cost environment

Origin considers that the regulated tariff regimes used across jurisdictions will need to be improved as some key aspects of the approaches used in assessing retail costs and revenue requirements are inadequate or even irrelevant.<sup>1</sup>

Much of the trepidation regarding the retail prices is centred around (but not limited to) the wholesale electricity cost (WEC) component, particularly in light of the increasing dynamic cost environment as a result of the climate change policies. The WEC along with network costs make up the greatest proportion of the retail price (approximately 90% or more), and both cost components will be directly and indirectly impacted by the CPRS and the expanded RET.

The retail pricing methodologies rely on assumptions about inherently uncertain cost inputs (e.g. future demand, fuel prices, and contract prices). All that a regulated price can ever be in such an environment of deficient information is a best guess of efficient costs. The introduction of climate change policies will amplify these difficulties. Forecasting 'efficient' wholesale energy costs - particularly for 3 year regulatory periods-when historical market data is of very limited relevance and under conditions of considerable uncertainty and thin, volatile wholesale and contract forward markets, is highly problematic. There are significant risks for retailers that in this environment the components of wholesale cost will not be accurately assessed.

The consequences for retail market participants and their customers of the pricing regulator 'getting it wrong' would be significant. This could lead to financial difficulties and market exit of otherwise efficient retailers, which in the longer term will have negative implications for investment. In this context, we welcome the Ministerial Council on Energy's (MCE's) proposal to the Coalition of Australian Governments to amend the AEMA and specify that CPRS costs should be passed through to end-use customers.

It is concerning, however, that a timetable for a work programme to implement this policy position has not yet been established. Given the complexities of ensuring efficient pricing in a regulated regime, and the limited time available<sup>2</sup> it is imperative that this work programme commences immediately. Origin therefore encourages the AEMC to promote this necessary step as a key part of this review.

Origin considers that any work programme must address some of the main weaknesses of the current regulatory regimes and seek commitment from jurisdictional regulators to a

<sup>&</sup>lt;sup>1</sup> As an example, a number of the current modelling approaches require historical pricing inputs; however, these will be largely irrelevant to any consideration of costs post July 2010.

<sup>&</sup>lt;sup>2</sup> Given the lead time generally required plus the need for more extensive consultation, such a process would need to commence at the latest by mid 2009.



common set of principles to achieve this end. Our views on the broad make up of these principles are outlined below.

## **Proposed principles**

## Increased flexibility

One of the major drawbacks of retail price regulation is the lack of flexibility. The rigidity of the retail price makes it difficult for retailers to adjust to changes in the WEC. The introduction of the CPRS increases the likelihood of significant fluctuations in the WEC due to changes in the carbon price. It is therefore imperative that the flexibility arrangements in the existing jurisdictional regimes be improved, which is implicit in the principles that follow.

## Duration of tariff Determination

Origin agrees with the AEMC's comments on the risks associated with regulated prices being set for between 1 to 3 years, when energy input costs are derived from a market where 12 carbon permit auctions occur each year.

Retailers are familiar with volatile spot markets and with the financial instruments needed to manage this volatility. However, particularly in the initial years of the CPRS, the volatility created across the year by the auction process is difficult to predict and will be difficult to manage with traditional risk instruments. Retailers will face this volatility either directly or through higher risk premiums paid to generators, whilst being bound by rigid retail prices.

Origin considers that this risk cannot be managed through the traditional 'pass through' mechanisms available under the current regimes. These arrangements are associated with formal approval processes that require extended time periods for review and consultation, and are therefore more suitable for managing exposures to measurable events such as a change in taxes or government charges.

In jurisdictions such as South Australia there appears to be scope to re-open a tariff determination if for example a change in the carbon price impacts the WEC. This process, however, is both time and resource intensive. There is also the drawback, that after the determination has been re-opened the new tariff must apply for a minimum of three years.

Given the inadequacies of the current flexibility mechanisms and the increased dynamism in the market, Origin recommends that limiting the duration of the retail tariff determination to one year should be considered. This would put less pressure on the various modelling methodologies to accurately forecast input costs too far into the future. It also avoids the problem of an inappropriate regulated price being locked in for too long - to the detriment of retailers. However, it is important to recognise that even a one year pricing determination in the context of monthly auctions raises contract risks for both retailers and the counterpart generators, and the "cost" of these risks will have to be fully captured in the regulated retail price.



## Transparency & Consistency

There is a general lack of transparency in some key areas of the jurisdictional tariff determination processes given their reliance in many instances on proprietary "black-box" models for determining regulatory allowances.

There is also unnecessary inconsistency in the general approaches to assessing retail wholesale purchase costs for supplying regulated tariff customers. Jurisdictions vary for instance on:

- The general methodology: For example, the relative reliance on long run marginal costs as an indicator of retail cost versus reliance on "market" based calculations.
- The definition of the relevant market for assessing WEC for tariff customers: Some jurisdictions assume the cost of servicing small customers is the same as the cost of servicing all customers. Others taken a more constrained (and more appropriate) view, that the relevant WEC costs are the costs associated with servicing the tariff market.
- Whether network costs are included as part of the cost calculation or sit outside the calculation (as a direct pass-through in the retail price). The current Queensland pricing formula includes forecast network costs for all of Queensland<sup>3</sup>. At the other end of the scale, in SA actual network costs are treated as a direct cost pass through<sup>4</sup>.
- The timing of the price-set period. Currently, Queensland focuses on annual retail price resets (based on annual change in costs<sup>5</sup>) while both NSW and SA have used 3-year price determination periods

Each of these approaches has significant (albeit different) limitations in reflecting actual efficient retail costs in the current environment. Such limitations will only be amplified in the environment of the CPRS and expanded RET.

Jurisdictions that have chosen to retain price regulation should be willing to critically assess their current methodologies and do so in a transparent and collaborative manner with the industry. Origin would urge the AEMC to provide leadership in this area and, to the extent possible, encourage harmonisation of approaches.

Such harmonisation is most important in the context of assessing the CPRS impacts, but as the CPRS costs under the proposed emissions trading scheme are linked in a highly interactive way to the "underlying" energy costs, a better approach would be to establish a nationally consistent framework for retail price regulation.

<sup>&</sup>lt;sup>3</sup> More accurately, it includes all network costs other than the TUOS costs associated with the direct connected customers and areas of the State not connected to the NEM.

<sup>&</sup>lt;sup>4</sup> The SA pricing formula is based on

<sup>&</sup>lt;sup>5</sup> Although there is provision in the Queensland Electricity Act for setting "fixed principles" for up to 3 years.



## Pass through of Network Costs.

In addition to changes in the WEC, the CPRS and expanded RET will also have direct and indirect impacts on both distribution and transmission costs. These costs make up some 40% - 60% of the regulated retail price for electricity and gas.

In SA, the current electricity pricing formula allows the direct pass through of "actual" distribution and transmission charges in the regulated electricity prices. This enables the retailers to manage the risk around changes in network prices. However, the South Australian gas retail price controls do not currently provide such flexibility in that transmission costs form part of the regulatory determination and actual costs are not passed directly through to customers.

Origin therefore urges all jurisdictions adopt the SA electricity approach to setting regulated retail prices. This will assist retailers in managing risks associated with a substantial proportion of their cost base under the new regime.

We note here that while the NSW approach does attempt to accommodate changes in network prices through using a "R+N" formula, restrictions on rebalancing the overall retail price effectively limits the effectiveness of the currently regulatory pricing formula to capture changes in network costs in the regulated retail price.

## Retail Pricing Structures

Jurisdictional regulators have also varied in their willingness to allow reform in pricing structures and removal of cross subsidies. Origin has long argued that retail competition will only become fully effective when the embedded cross-subsidies in regulated retail prices are addressed.

If the CPRS is to change energy consumption behaviour in the ways intended by its designers it is also important that each jurisdiction aggressively unwinds existing cross subsidies and ensure future regulatory frameworks allows sufficient flexibility to ensure they do not re-emerge.

As a simplistic example of this, if regulated retail price caps protect customers with high peak period loads from the true cost of their load, then customers with the worst load will progressively concentrate in the regulated retail market segment and avoid cost reflective market offers.

Origin considers that jurisdictional regulators must commit to making their retail tariff methodologies more transparent, notwithstanding that certain commercially sensitive information is likely to be kept confidential.

## Timing and path going forward

Origin considers the regulatory retail arrangements to be transitory as we anticipate that State Governments will honour their commitment to implement retail price deregulation in keeping with the AEMA.



Given that the CPRS and expanded RET will start next year a work programme to further develop these or any other principles necessary to facilitate the efficient pass through of the carbon costs should commence immediately.

It may be necessary to get MCE commitment to any agreed principles prior to the publication of the AEMC's final report in September, given the tight timeframes involved.

#### Retailer of Last Resort

There has been only one RoLR event in the NEM to date. This event occurred at a time of high wholesale market prices, the experience revealed significant shortcomings with the RoLR processes, the inconsistent nature of regulation across state boundaries and the fact that a retailer wishing to exit could exploit the RoLR process.

However, Origin notes that the MCE Standing Committee of Officials (SCO) is reviewing the RoLR framework as part of its work to develop the National Energy Consumer Framework. Origin is generally supportive of the framework approach under consultation, and believes that the work of the SCO to replace the existing plethora of jurisdictional schemes with a single national scheme that recognises the costs and risks to retailers and customers of a RoLR event is of critical importance.

The CPRS/RET program will significantly increase the risk of retailer failure. This risk will be compounded further in a context of on-going retail price regulation. The prospect of any further delays in the RoLR work program is a matter of great concern to Origin.

Origin believes retailers with last resort responsibilities need certainty that the additional costs incurred in taking on customers of a failed retailer are recovered, to avoid the risk of cascading retail business failure. The precise framework for RoLR is being considered by the SCO but Origin would encourage the AEMC to seek to minimise the impact of unplanned exit from the market as it reviews the regulatory and rules framework in the context of the CPRS.

## 2. Connecting new generators to energy networks

- Q1 Do you agree that connection of new generators to energy networks is a significant issue and that should be further progressed under the Review? If not, what are your reasons for reconsidering this position?
- Q2 Would any models identified in the Chapter ensure the more efficient delivery of network connection services? In particular, with relation to these models:
  - How should the risks of connection be most appropriately spread across new connection parties, network businesses and end use consumers?
  - How do the connection charges change for connecting new generation plant and what benefits may arise?
  - How do the costs for end use customers' change and what benefits may arise?
- Q3 Are there any other potential models that we should consider to address the issue?



As we discussed in detail in our submission to the scoping paper, Origin strongly agrees that connection of new generators to energy networks is a significant issue. Our internal modelling suggests that in order to meet highly challenging RET targets by 2020 will require more than 7000 MW of additional wind generation capacity and potentially 1500MW of geothermal or solar thermal generation capacity.

The long distances inherent in development of renewable energy in Australia, where resources close to demand centres are few, will make the cost of transmission connection going forward a key factor in determining the viability of projects.

We believe the regulatory investment test for transmission (RIT-T), even if it could be applied to network extensions, is insufficiently forward looking or strategic enough to deliver in a timely fashion the significant transmission extensions required to bring remote generation to market. Such projects can take in the order of 7 years to build, much longer than construction times for investment in generation capacity.

Furthermore, a combination of lack of firm access to the network, bilaterally focussed negotiation under existing arrangements, and an excessive cost burden for first movers means existing arrangements undermine private incentives to build transmission capacity. It is questionable therefore whether existing arrangements can effectively support climate change objectives.

The AEMC has recognised these issues in its Interim Report and has canvassed two options for providing greater support for addressing remote connection issues. The first, Option 1, retains a bilateral approach to connection but allows transmission companies to undertake an "open season" to coordinate connection applications and share costs between multiplies applicants. Under this model a network extension for remote generation (NERG) would be sized only to meet the needs of those applicants who participated in the open season, thus avoiding stranding risk for end users. Option 2 reflects more closely an approach used in California, where a significant proportion of the NERG is paid for by consumers up front, provided the NERG meets a number of economic criteria (the extent to which it opens up key renewable resources and the level of financial commitment by interested market participants are key in this regard). However the costs of the extension would be repaid to consumers over time as new generators connect.

Origin considers Option 1 to be the weaker of the two for the following key reasons.

First, it retains the existing reactive approach to transmission investment; which, given the long lead times of transmission development is unlikely to support the significant volume of new low emissions generation required to meet climate change policy objectives. Option 1 would address the coordination failure and cost sharing issue for "existing" generation participants. However it provides little recognition of possible future new entry, it does not recognise the essential difficulty of project proponents with different investment timetables and competing projects to jointly finance expensive transmission projects up front.

Second, Option 1 does not consider the benefits of economies of scale of transmission, or more broadly, the costs and benefits of building now versus building later. Economies of scale means that the unit cost of capacity is lower the larger the overall capacity of the asset. It is therefore significantly cheaper to build excess transmission capacity now than it is to add such capacity later as new generators connect.



For these reasons Option 1 fails to address a key weakness of the existing arrangements, its lack of a strategic focus. Transmission would continue to be built only to meet reliability requirements or the needs of committed generation applicants. TNSPs are not assured of recovering the costs of building more capacity than this and so the incentive to do so is largely non-existent.

A key strength of Option 2, on the other hand, is that it would allow a proportion of transmission capacity to be built in advance of generator commitment. This approach therefore better captures the benefits of economies of scale, the reality that participants enter the market at different times and the lag between generation and transmission investment (generation can be built in less than half the time of a significant transmission project for instance). In this regard Option 2 is a better fit with the new national transmission planning arrangements, as we explain briefly below.

A critical component of the new arrangements is the requirement for the National Transmission Planner (NTP) to develop "transmission development strategies" looking out at least 20 years, for inclusion in the National Transmission Network Development Plan (NTNDP). This approach could therefore readily extend its analysis to include possible areas of high renewable or resource potential and assess the high level costs and benefits of developing NERGs out to those areas, including consideration of such factors such as optimal sizing and "building now versus building later".

However we acknowledge the NTNDP can only guide the investment decisions of TNSPs, not compel them. It would therefore be incumbent on TNSPs to take the most promising of the options identified by the NTP and assess the level of participant interest. They would be required to obtain commitment from participants for at least 50 per cent of the capacity of the proposed NERG before they could take the proposal to the AER for ratification as a contingent project.

If the proposed project is accepted by the AER, the proportion of the costs of the NERG not underwritten by participants would then be rolled into the regulatory asset base as any normal contingent project. The costs would most likely need to be rolled into the asset bases of more than one TNSP since the market benefits of constructing NERGs are likely to fall across jurisdictional boundaries rather than just within them. We note the AEMC is developing an interregional charging mechanism as part of this Review, which would allow such apportionment of costs to be achieved.

The requirement of financial commitments from generators should be a fundamental component of any remote connection approach. It imposes greater discipline on ensuring efficient outcomes in the context of the necessarily higher level cost-benefit analysis applied to NERGs by the NTP. This helps ensure that end users who are required to bear the initial burden of a significant proportion of the NERG up front get value for money (that is, the potential for stranding risk is minimised). More weight under this approach is given to market views rather than to more centralised regulatory decision making since it is the level of financial commitment that ultimately determines whether the NERG goes ahead and where it will be located, rather than the RIT-T.

Finally, we reiterate from our submission to the scoping paper the considerable benefits of this type of approach in addressing climate change policy objectives:

 It increases the likelihood that transmission is developed in a timely manner and that it will be available when participants initiate transmission connection requests.



- Reduces the transmission related costs (through economies of scale and up front cost sharing) and risks to renewable energy participants associated with their generation investment. This improves private incentives for generation investment in remote resources.
- Provides a mechanism for TNSPs to obtain full cost recovery for the transmission investment without unduly burdening renewable generation participants.
- The risk of stranding for consumers is minimised by using an economic test to determine NERGs and by necessitating a proportion of private commitment.
- Provides for a more strategic (forward looking) approach to transmission investment which can be readily incorporated within the new national transmission planning arrangements.
- Consumers will benefit through lower delivered energy retail prices and lower overall costs of meeting climate change objectives.

# 3. Augmenting networks and managing congestion

Q1 Do you agree that the issue of network congestion and related costs requires further examination in this Review to determine its materiality? This includes considering whether the existing frameworks provide signals that are clear enough and strong enough in the new environment where congestion may be more material. If not, what are your reasons for reconsidering this position?

## Materiality of Congestion

The potential materiality of congestion under the CPRS and RET, and the extent to which existing frameworks are capable of addressing it, should be a central focus for this Review.

In its Final Report on the Congestion Management Review the AEMC noted that the impacts of climate change policy on existing market design "would be profound" and may "among other consequences, result in the emergence of material transmission congestion"<sup>6</sup>. Some indication of the potential significance of this problem is evident in modelling performed by ROAM consulting for the AEMC. This modelling suggests that the incidence of both inter-regional and intra-regional congestion is likely to increase significantly under the Federal Government's climate change policies<sup>7</sup>. ROAM notes that potentially the most important effect of the CPRS and RET is to "reconfigure established flow patterns between regions of the NEM and hence result in different patterns of

<sup>&</sup>lt;sup>6</sup> AEMC, Congestion Management Review, June 2008, p ix

<sup>&</sup>lt;sup>7</sup> ROAM Consulting, *Market Impacts of the CPRS and RET*, A report prepared for the AEMC, December 2008, p 3



congestion<sup>"8</sup>. The ROAM modelling is instructive in that it is the only work done to date which attempts to incorporate the effects of constraint equations, and arguably therefore presents the most rigorous forecast of potential congestion impacts under climate change policies available in the NEM.

However, in a more immediate context evidence can already be observed of congestion becoming more problematic in South East South Australia (SESA), where network capacity is quickly being used up as new generation connects. Existing generation participants, including first mover wind generators, now have to contemplate significant reductions in their access to market as other low emissions generators continue to co-locate and compete for scarce capacity.

## Congestion, Competition and New entry

As a brief digression, it is important to note that this competition for access to the network does not constitute normal competition according to economic definitions of the term. Competition is generally defined in terms of pricing rivalry rather than the degree to which participants can constrain or block the access of others to the market. Congestion that arises from this process leads to a breakdown in competition precisely because it requires non-price rationing of supply. More often than not this leads to higher cost generators gaining access to the market ahead of their lower cost rivals, an outcome opposite to what might be expected from efficient competition.

While congestion interferes with competition in a static sense, as described above, it also damages competition and investment over time, as we explain further below.

First, congestion risk creates uncertainty over future cash-flows, which particularly in the current climate of tight credit may undermine provision of investment finance for new generation projects (or at least substantially increase required hurdle rates). This in turn may limit the extent of new entry and new investment in the NEM.

In this regard it is important to note that all costs are variable for new entrants, while for existing generators they are not (capital costs are sunk). Paradoxically therefore, while existing generators are more exposed to congestion costs (because they cannot avoid them by moving elsewhere) new entrants are more sensitive to them (because they can avoid them). Increasing congestion risk may therefore cause new entrants to seek less risky industries or sectors for their investment funds, reducing prospects for new entry. A lower volume of new generation entering the market over time reduces competition and puts supply reliability at risk, as well as compromising environmental targets.

Increasing congestion risk will also impact the incentives of existing generation participants to contract with retailers. Congestion risk exposes generators to difference payments under hedge contracts. If the dispatch of generators is constrained below the volume they need to meet their contract obligations the difference will have to be made up through purchases in the spot market. Typically congestion is correlated with higher spot prices, which therefore exposes generators to risk of having to rebate very high difference payments back to retailers.

To the extent this risk increases for generators under climate change policies because of increased congestion, generators are likely to offer a lower volume of contracts into the NEM, or offer such contracts at a much higher risk premium. Over time this could reduce

<sup>&</sup>lt;sup>8</sup> Ibid, p45



contract market liquidity and thus reduce competition and investment. This may in turn lead to further increases in prices to consumers in an environment where prices are already higher due to carbon related costs.

## Existing arrangements for managing congestion

## Transmission investment

Origin welcomes reforms to the transmission investment framework made by the AEMC, which focus amalgamating market and reliability benefits into a new regulatory investment test for transmission (RIT-T). However, we are concerned that this framework may not be responsive enough if congestion increases rapidly or shifts from one area to another under climate change policies. The existing regulatory test is complex and time consuming process, and with the absence of the more seamless process previously available to TNSPs under the reliability limb, the new RIT-T could potentially become even more cumbersome. Every project will now potentially be open to dispute, which is problematic in an environment where most transmission projects will have winners and losers.

A further concern is that the new RIT-T will be geared, as it has in the past, towards relieving congestion only where it affects reliability to consumers, or has significant net market benefits. It is unlikely to capture benefits which flow to a small number of participants. That is, unless there is a lack of low cost generation already available on the uncongested side of any particular transmission constraint, then building out the constraint will be unlikely to release sufficient additional low cost generation to be meaningful in terms of producing net market benefits under a RIT-T.

In addition, any reduction in the regional price brought about by the augmentation (the competition benefit) can only be counted in the RIT-T in so far as it leads to an increase in consumption. If the constraint is between regions rather than within a region, then the price increase in the exporting region (times the change in consumption in that region) must also be deducted from the price reduction achieved in the importing region. Competition benefits, whether calculated within or between regions, are therefore likely to be trivial in the context of highly inelastic demand typical of energy markets.

For the above reasons, removal of congestion for other than reliability reasons will generally simply amount to a wealth transfer between generators, or a wealth transfer between generators or consumers, which cannot therefore be counted in RIT-T assessments. The potential for wealth transfers from transmission investment may lead to RIT-T assessments potentially becoming mired in dispute (since removal of the constraint would create winners and losers). Reliance on the RIT-T to address increasing congestion risk for market participants under climate change policies may therefore be problematic.

## Transmission access

Existing access provisions also cannot be relied upon, either to relieve congestion or protect participants from congestion's impacts. While under the Rules generators can negotiate a firmer level of access with their transmission network service providers (TNSPs), TNSPs are in no way obligated to provide such access. The access provisions in the Rules are governed by a negotiation framework which requires only that access be provided on a "reasonable endeavours" basis "up to" a maximum transfer capability only.



TNSPs are not legally obliged to provide access to a level that achieves that transfer capability at all times, regardless of whether participants help to fund additional capacity. There is, consequently, no onus for TNSPs to provide participants with compensation when they are constrained off if they do not consider it reasonable to do so.

Moreover, while the Rules (5.3.5(d)) appear to provide the opportunity for TNSPs to impose a charge on new entrants where they connect and reduce the quality of access for other participants, they have not done so to date in the NEM. It is likely that TNSPs are concerned that an additional charge imposed on some participants and not others will conflict with Chapter 6A of the Rules which prevents hindering of access to transmission services.

The reasonableness test therefore appears to obviate the need for TNSPs to either contemplate firm access for participants, or impose any additional charge over and above normal access tariffs.

#### New mechanisms for managing congestion

In light of above considerations, it is apparent that if congestion significantly increases under climate change policies, as ROAM predicts, then additional mechanisms for managing future congestion risk may need to be examined by the AEMC.

#### Locational signals

One possible approach for addressing congestion is to increase locational signals for generation. Exposing generators locating in congested areas to a lower wholesale price for their dispatch, or a higher network access charge, relative to those locating in uncongested areas (a network charge would need to reflect as closely as possible the marginal impact of that particular generator on congestion) would have the effect, all other things equal, of increasing the incentive of generators to locate in areas of the network where there is less congestion. A lower risk of new entrant generation locating in congested areas lowers long term congestion risk for existing participants in congested areas.

There are two problems with this approach however; first is that it operates only indirectly to manage the congestion risk of participants (much like the existing reliance on the RIT-T to remove congestion). Each incumbent is at the mercy of the behaviour of others regarding their own exposure to congestion (for example, whether or not a new entrant will respond to a higher charge and choose to locate somewhere else).

Second, the imposition of an additional charge on new entrants which has thus far been avoided by incumbent generators effectively provides the latter with an implicit right to the existing transmission network (and it is consumers which by and large have funded existing transmission capacity). While economic arguments focused on the marginal value of transmission can be marshalled in support of such an approach (that is, the marginal value of transmission may have been zero for existing generators because there was excess capacity), such "static" efficiency arguments need to be weighed against competing "dynamic" efficiency objectives, as we discuss briefly below.

A cost imposed on new generators represents a wealth transfer from new entrants to incumbents, which inevitably will act as a barrier to entry, particularly if such a charge is



difficult or impossible to avoid because access to fuel resources limits the locational decision to specific areas. While new entrants would always have the option of funding additional capacity to remove the congestion, the lack of firm rights over such capacity provides a strong disincentive for doing so (since subsequent entry would not prevent the funding party from being constrained off the network by lower cost generation).

While increasing exposure of new entrants to congestion charges may therefore increase the efficiency of locational decisions, to the extent it also substantially discourages new entry it will damage competition over time. TNSPs may rightly be concerned that imposing an additional charge on new entrant could conflict with the provisions of Chapter 6A of the Rules which prohibit any prevention or hindering access. For this reason Origin considers that whatever future congestion management mechanism is implemented should not damage competition by being discriminatory between incumbents and new entrants. We outline such an approach in the next few sections.

## Price signals and contracts

Origin is supportive of arrangements such as the "location specific constraint management mechanism" considered by the AEMC the Congestion Management Review<sup>9</sup>. The key benefit of this kind of approach is that it applies both a locational signal (a constraint support price, or CSP) and a means to hedge exposure to the signal (through a constraint support contract, or CSC) and therefore offers the potential to reduce congestion while at the same time managing congestion risk for participants. If judiciously and selectively applied, this kind of approach would be particularly relevant under a CPRS and RET, because congestion will most likely arise in new and specific areas where renewable or low emissions resources are situated.

While development of a CSP-CSC mechanism is conceptually well advanced, a central sticking point for many participants and the AEMC is the difficulty of determining how to allocate the CSCs. Some argue that existing generators should be allocated such contracts for free relative to their existing levels of access to the network. New entrants locating in congested regions would then be required to pay for them. However, as we have already discussed at length, while such an approach provides strong locational signals it may also damage incentives for future generation investment and competition.

## Auctioning of contracts

To avoid the concerns with discrimination between new entrants and incumbent generators outlined above it is likely that contracts associated with CSC-CSP approach would need to be auctioned. The exception of course is if participants themselves fund new capacity to remove congestion, in which case CSCs should come with such capacity for free. In fact this would be an important element of the CSP-CSC mechanism since it would resolve the free-rider effect generally associated with private investment in transmission networks and thus encourage participants to augment transmission capacity to improve their access to market in congested areas.

Some participants have argued that auctioning would amount to existing participants paying for a level of access they already get for free (albeit they can only achieve this

<sup>&</sup>lt;sup>9</sup> Gregan, T, and E Grant Read, " Congestion Pricing Options for the Australian Electricity Market: Overview", prepared for the AEMC, February 2008.



inefficiently through disorderly bidding). While to some extent this is true, what this ignores is the relatively low level of congestion that currently exists in the NEM and the fact that the existing implicit right to transmission will in any event change with new entry.

Existing rights of access will therefore be extremely fragile under climate change policies which are likely to induce a substantial increase in congestion on the transmission network. CSCs could consequentially offer a level of protection for participants against future congestion risk which currently does not exist. In this regard, auction revenues would provide a useful additional source of funding (on top of congestion revenues) that can be used to increase the level of firmness of CSCs (that is, compensation for being constrained off the network). Even incumbent generation participants may consider such contracts worth paying for in a congestion rich environment.

## Implementation of Congestion mechanism

The pricing and contracting approach described above provides the means for TNSPs, or AEMO, to provide market participants with firmer level of financial access to the network (it would provide a funding source for compensation payments under the existing access arrangements for instance). Origin expects that such an approach would only be applied in selected areas that meet certain triggers for materiality, as we explain below.

For instance, in a similar way to how the process might work for the NERG (which we describe in Section 2), the National Transmission Planner could make information available to the market on congestion and leave it to participants themselves to determine whether to apply for implementation of a CSP-CSC approach. Once again the application could be made to the AER; although the approach itself would be developed and consulted upon by the AEMC. The congestion mechanism would then be embedded in the Rules until activated by a participant application (perhaps a minimum of 6 applicants would be required). The AER would decide whether introduction of a CSP-CSC was warranted, and AEMO would subsequently auction the CSCs for transmission access in the particular area chosen.

An important point to note in this kind of arrangement is that if further transmission development or new entry elsewhere changes or removes the congestion on which the CSCs are based, this does not devalue them (for example SRAs are not worthless just because a particular inter-connector does not constrain). They are fundamentally an instrument for mitigating future congestion risk. Uncertainty around the quantum of future congestion, and how long it may persist, can be expected to be reflected in the bids for CSCs at auction.

## Congestion mechanism and transmission investment

Origin sees this kind of approach working in tandem with and in fact improving upon the current transmission investment regime. That is, such a mechanism would only be applied in congested areas where regulated transmission augmentation is either not justified or unlikely to keep pace with congestion (because of the problems with the RIT-T we discussed earlier). Otherwise participants presumably wouldn't bother to apply for a CSP-CSC mechanism to be introduced (as the RIT-T will build it out for free).



In contrast to the existing framework, however, new entrant participants would have an incentive to augment transmission in congested areas since they would receive CSCs for doing so, and thus achieve a level of firm access to the capacity they have created.

Thus regulated and private investment would work in tandem to reduce and manage congestion, the former removing congestion that affects principally consumers, the latter removing congestion that principally affects participants. This interaction is missing in existing arrangements.

This approach would also mesh neatly with Options 1 and 2 proposed by the AEMC to deal with remote connection. Participants can expected to be more conducive to funding NERGs if this also provides them with some certainty of financial access to the market.

The development and implementation of long term CSCs and congestion pricing approach as described above, where and how this would be implemented and administered, no doubt presents a challenging task for the AEMC, but one that may be inevitable in light of climate change policy impacts on future congestion.