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## **Coordination of Generation and Transmission Investment Options Paper (Ref: EPR0052)**

Delta Electricity welcomes the opportunity to contribute to the AEMC's deliberations on the frameworks guiding investment in generation and transmission. Delta owns and operates the 1320MW Vales Point power station in NSW and has a retail licence to sell electricity to large customers. Delta has operated coal and gas fired generating plant in the National Electricity Market (NEM) since its start in 1998 and is an active participant in both the electricity and gas trading markets.

### **Introduction**

Delta sees material risks arising from converting AEMO's Integrated System Plan (ISP) into an actionable strategic plan. Transmission projects built in an environment of unprecedented technological and energy policy uncertainty must be assessed as economically efficient under a very broad range of scenarios. As the NEM transitions to low emission sources of supply there will be significant uncertainty surrounding the amount and timing of large and small scale renewable generation and storage deployed. In this environment, it will be essential to ensure that consumers are shielded from the cost impacts of long lived network investments that only deliver benefit for a limited period. Large network investments pose a material electricity price risk as consumers may be paying for any ineffective or stranded asset over decades.

Maintaining the existing Regulatory Investment Test – Transmission (RIT-T) and supporting processes is critical to ensuring that network investment is subject to stringent economic assessment. Consumers have experienced the electricity price impact of network investment in the past. Electricity prices for households increased on average by 72% for electricity in the 10 years to June 2013<sup>1</sup>. This increase was in part attributable to network investment to meet forecasts of a large growth in 'front of meter' consumption that did not eventuate. This demonstrates the potential market distortions that can arise when planning is undertaken by an entity with a mandate to ensure grid reliability and security is maintained.

The fundamental design principle of the National Electricity Market, as articulated in the National Electricity Objective (NEO), is to promote efficient investment. The NEM's open access regime allows generators to connect to the grid at any location, subject to technical performance standards. There is no guarantee of dispatch which means that access to the regional node, transmission loss factors and regional prices provide strong signals for the efficient location of new generation capacity. Aside from network investments required to deliver quality, safe, reliable and secure electricity supply, major investment proposals must present an overwhelmingly clear net economic benefit case. This framework has worked in the past and there is no compelling reason against it continuing to work well into the future.

The market has seen over 6,000MW of new large-scale wind and solar capacity installed under the Renewable Energy Target. Where congestion is evident and highly likely to increase, network augmentations are planned to efficiently relieve this congestion. Moving to a framework under which

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<sup>1</sup> Source: Australian Bureau of Statistics



large, costly and long-lived network projects are mandated based on highly uncertain ISP futures, removes the driver for economically efficient location of new investment. Effectively, the market access risk currently borne by the developer shifts to the electricity consumer. Inefficiencies do develop where multiple generators are consistently curtailed and there is a long delay in implementing a network upgrade. Networks could deal with this by having 'real options' for development that facilitate short timeframe implementation. Network augmentation timing may not always be ideal, but the alternative could be a 40 year stranded asset built to support a renewable energy zone that never eventuates.

### **Preferred Option for Converting the ISP to and Actionable Strategic Plan**

Delta's preferred option for converting the ISP to an actionable plan, of those presented by the AEMC, is Option 1. This option requires the least change to the existing frameworks and should improve the assessment of network and non-network options which traverse regional boundaries, are impacted by intra-regional constraints and have system operation benefits under the control of AEMO. Delta is not convinced of a fundamental need for change. The main benefit of this option is that the risk allocation between consumers and networks remain unchanged.

The alternative options proposed by the AEMC present an increasingly centralised approach to planning the power system. These options present risks not only to consumers but to transmission companies and wholesale market participants. Fundamental to these risks is the separation of financial incentives from the planning function. Options 4 and 5 show this most clearly. Under option 5 AEMO would have discretion to force investment on behalf of consumers and market participants. AEMO would not be required to consider, or take responsibility for, the sourcing of funds for those projects or the profitability or liquidity implications for the business committing those funds. Options 4 and 5 remove decision making from the financial implications of those decisions. This separation of planning from the repercussions of the planning outcomes is almost certain to lead to decisions that do not balance the requirements of consumers as stated in the NEO.

Options 2 and 3 also place AEMO in a position to impose costs on parties, but to a lesser extent than in options 4 and 5. Option 2 potentially allows AEMO to impose costs on TNSPs through requiring them to fund a RIT-T investigation that they may not support due to network knowledge of a proposed transmission corridor. Option 3 further removes the TNSP from technical decisions that they are best placed to advise on. The framework should continue to support decision making by those parties who are most likely to have detailed technical knowledge about specific projects. This is the best way to ensure that all technical options are considered, including non-network options.

Ultimately all options place greater emphasis on transmission investment than non-network options due to the focus of the ISP on transmission projects. In all cases, transmission developments become the most direct solution to potential reliability or operational concerns that arise during the ISP process. It is highly likely that a market operator with stronger transmission planning power will favour the solution that it can control rather than wait for solutions to arise in the market. Over time this will diminish the incentives for the market to innovate and invest and will increase costs to consumers.

### **Renewable Energy Zones**

Delta does not support the proposed Renewable Energy Zone model. Transmission investment to a renewable zone without the commitment of renewable proponents ultimately puts consumers at risk of paying for investments that remain underutilised and with no market benefit. To manage this risk, any transmission investment that primarily aims to facilitate renewables should not be included in the



regulated asset base until utilisation reaches the level that would deliver the quantified market benefits.

Delta's view is that the current RIT-T process and the SENE framework remain appropriate for these developments, acknowledging the lack of SENE projects to date. The framework ensures that consumers are not exposed to speculative or strategic investments that guarantee a return to transmission investors. Delta supports the role of AEMO and TNSPs in providing information to the market on REZs, under Option 1. However, the information provided should also seek to improve the transparency around renewable projects that are seeking to connect in various grid locations. Additional information about renewable projects (eg location, technology, timing) and their potential impact on the transmission network should be made public as soon practicable after receipt of a connection inquiry. This would enable renewable developers, and market participants generally, to properly consider the location of their future projects and help avoid congestion and adverse system impacts.

### **Treatment of Storage**

Delta sees no need to impose TUOS or DUOS charges on storage facilities during charging. Storage facilities that charge from the network and discharge the energy back to the network are providing a similar service to consumers as generators. If a market customer is a consumer of energy then the maximum cost that should be applied to storage facilities is for their net energy consumption. This would be the difference between their generation and consumption over a period of time. Under the open access regime the storage facility would not be guaranteed access to the regional node for either generation or charging. Again, the developer will take into account network capability when assessing location.

### **Suitability of the 2018 Integrated System Plan**

There are deficiencies in the modelling undertaken for the ISP that makes it not suitable to implementation as an "actionable strategic plan". An actionable plan should be formulated after a robust development and consultation process has been followed. The tight timeframe imposed for development of the 2018 ISP limited the level of consultation and feedback from stakeholders. For modelling of this complexity, Delta proposes an additional step in the consultation process that includes a draft of the results to be released with sufficient time for stakeholders to investigate and provide detailed feedback prior to AEMO progressing to the final modelling phase. Further modifications to the process are likely to be needed if the ISP is to become a truly actionable plan, including closer involvement of the AER and key assumptions procured from a range of reputable sources.

Delta has identified a number of anomalies in the modelling, and scenario approach taken by AEMO for the 2018 ISP that should be revisited before the ISP is converted to an actionable plan. These are attached for consideration in Attachment 1.

Peter Wormald

Manager Regulation, Risk and Strategy



## **Attachment 1: Integrated System Plan Modelling Comments**

Delta has identified a number of issues in the ISP modelling and modelling reports that warrant further investigation. Before implementing a transmission construction program on the basis of AEMO's modelling, Delta recommends additional stakeholder consultation and the inclusion of:

- a wider range of future scenarios;
- more granular analysis of the modelling results by AEMO presented in the report not just in model output spreadsheets;
- the use of time-sequential modelling to enable stakeholders to fully understand the impact of variable renewable generation;
- the appropriate representation of unserved energy; and
- a more in-depth cost analysis of coal plant flexibility costs and life extension.

### **Narrow breadth of scenarios**

It is usual practice to construct a set of scenarios that represent a range of different narratives and outcomes. While the ISP scenarios are described as technology neutral and provide for all technologies to be developed, it should be expected that a reasonable scenario spread would include outcomes that facilitate:

- new coal generation being developed utilising existing transmission;
- extending the life of current coal generation utilising existing transmission;
- increased gas cost from the level assumed in the Neutral case; and
- low levels of large-scale renewable generation.

As new coal generation should be an output of the modelling based on costs, it is difficult to fathom that there is not a scenario where in the absence of any penalty/price on carbon emissions and absence of any risk associated with new coal plant, that new coal plant would not be developed.

The only possible conclusions from the absence of such an outcome is that:

- the scenarios have been designed too narrow or specifically to avoid such as outcomes;
- there is an implied cost of carbon emissions or policy objective that prevents such an outcome; or
- the modelling has not been undertaken correctly.

Delta encourages AEMO to develop a broader set of scenarios for future ISP modelling.

### **Lack of Detailed Analysis in the Report**

The presentation of detailed modelling results is limited in the ISP report. For example, given the essential importance of finer granularity in the NEM moving to high levels of variable renewable generation, this limits insight into what was done and the approximations made.

The description of AEMO's modelling approach is similarly limited. In relation to the models used, the ISP lists three NEM modelling approaches: Long Term Integrated Model or IM, Detailed Long Term or DLT model, and the Time-sequential model. The ISP states that "The ESOO, ISP, and VAPR primarily use three models to deliver their key outputs". There is no clear statement in relation to the ISP.



In relation to the time sequential model the ISP states “This model validates insights on power system reliability, available generation reserves, emerging network limitations, and other operational concerns. Depending on the study this model is used for, the generation and transmission outlook from the capacity outlook model may be incorporated”. It is not clear if the modelling results contain any numbers for time sequential modelling or if they have been used only as “validation”.

In relation to generator bidding in the sequential modelling the ISP report states that “Bidding behaviours are typically difficult to determine as they depend on each company’s risk profile, contract position, and future ownership of new entrants. AEMO may use either of the following generator bidding models, depending on the purpose of the modelling”. The report describes Short Run Marginal Cost (SRMC) model and Nash-Cournot model but does not state what was used. It is essential that stakeholders understand the basis for modelling generator bidding and their limitations particularly in respect to conventional plant closures and new ‘firming’ capacity such as gas generation, pumped hydro storage and batteries.

The ISP presents transmission development proposals but does not clearly state what transmission limits were used in the modelling. It is appreciated that the development of transmission constraints under various transmission development options may not be complete, but the modelling was based on a technical representation and this should be stated in the ISP. An example of this is the increased power flow from NSW to Victoria and SA due to the proposed SA-NSW interconnector.

The ISP also provides no explanation or even recognition for what appears to be anomalous modelling results. Such results include:

- the introduction of Snowy 2.0 reducing developed solar generation;
- no coal plant entry in any of the scenarios;
- no gas plant entry (except 90 MW) in all scenarios except the “increased role of gas” scenario; and
- low storage volume of the batteries developed.

#### Inappropriate modelling approach

The modelling has been described as consisting of least cost modelling with this being validated by time sequential modelling. Linear program optimisation modelling is based on each year being represented by a number of time sectors with each time sector representing average conditions during that time. The ISP modelling methodology report indicates that the modelling included 5 time blocks each month. Such modelling is usually incapable of representing the variability and operation of the NEM under expanded renewable scenarios. Examples of issues include the following:

- the costs of storage used in the modelling were most likely expressed on an annualised \$/MWh basis and assumed all variable renewable production was used;
- any “spilt” renewable generation is assumed to be at zero cost which is not the case economically; and
- the variability of renewables would not be evident as renewable generation used average profiles.

It is noted that such modelling can provide for spurious results that need to be considered and investigated with great care, and which can be found to be inconsistent with modelling that properly includes variability.

#### Use of reserve margins



A key issue for the NEM moving to higher levels of variable renewable generation is the reliability of supply and the cost of such reliability. This was likely assumed to be fundamental to the ISP modelling outcomes that had renewable generation (with firming) at a lower cost than the alternative of thermal coal and gas generation.

The modelling used regional reserve margins, an approach AEMO ceased doing a number of years ago. The ISP states:

*“Due to the lack of granularity in the IM model, it is not possible to get an accurate, probabilistic assessment of the USE level in any given year. Instead, minimum capacity reserve levels for each region are used as a proxy; more detailed assessments of supply adequacy can then be simulated in future modelling stages with more granular models. These minimum capacity reserve levels are generally set equal to the size of the largest generating unit (although may be adjusted over time if the time-sequential modelling indicates that more firm capacity needs to be built in a region to avoid reliability standard breaches). The capacity outlook models (both IM and DLT) ensure that sufficient firm capacity is installed/maintained within each region, or imported from neighbouring regions, to meet these minimum capacity reserve levels.”*

Supply reliability is a fundamental cornerstone of NEM development and must be properly incorporated into any long-term development plan. The inability of variable renewable generation with the costs ascribed to firming to provide reliability would significantly impact the modelling results and outlook plan.

The ISP does not contain a quantification of variable renewable generation variability. The nature and cost of firming variable renewable generation is possibly the most critical issue in the economics of a move in increased variable renewable generation, and also how this will change as variable renewable generation penetration increases. The ISP had little analysis or discussion on this issue.

The ISP also ignores the changing nature and cost of firming needs as the percentage of generation produced by VRE increases. Such a discussion requires, but is not limited to, the following:

- the impact variable renewable generation location and generation type (i.e. wind and solar) has on the total variability, and qualification of this; and
- the variation of energy generated on a hourly / daily / weekly / monthly /annual basis.

Both the Finkel report and the ISP appeared to not provide analysis of how variable renewable generation would need to be integrated into the NEM and how this would change moving forward. The consequences of this are that these costs have likely been materially understated.

### Coal Plant Operation

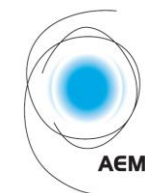
The ISP treats coal plant flexibility as a minor matter. While this may be correct or incorrect, the report does not present any modelling or analysis on the extent to which this is an issue. Delta is of the view that coal plant will incur significant costs for power system security due to the need to decommit at times of higher renewable output. This is likely to lead to much higher prices at times of low renewable generation as coal plant will need to cover its fixed costs to remain viable.

Delta believes the costs of keeping coal plant on line in a high renewable generation environment have been understated. If AEMO's view is that coal plant is required to maintain grid stability it is



likely that the recovery of these additional costs will need to be made explicit through a market mechanism that rewards controllable capacity availability.





## Coordination of generation and transmission investment – options paper: stakeholder feedback template

The template below has been developed to assist stakeholders in providing their feedback on the questions posed in this paper and any other issues that they would like to provide feedback on. The AEMC encourages stakeholders to use this template to assist it to consider the views expressed by stakeholders on each issue. Stakeholders should not feel obliged to answer each question, but rather address those issues of particular interest or concern. Further context for the questions can be found in the options paper.

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Questions		Feedback
<b>Chapter 4 – Making the ISP an actionable strategic plan</b>		
<b>Question 1: Questions arising from the ISP</b> - The paper considers a number of questions about the role and regulatory implications of the ISP, including the links between the ISP and transmission investment decisions.		
A)	Are there any questions about the role and regulatory implications of the ISP that are not set out in the options paper?	
B)	Is our approach to making the ISP actionable (i.e. strengthening the link between the ISP and investment decisions) appropriate?	There are benefits to strengthening the link between the ISP and investment decisions by improving the assessment of network and non-network options which traverse regional boundaries, are impacted by intra-regional constraints and have system operation benefits under the control of AEMO. However, caution should be exercised when undertaking this change due to the risks of removing investment decisions from the organisations with the best information about those potential investments. Under a robust RIT-T framework, network companies are



Questions		Feedback
		best placed to decide which network investments to pursue due to their superior knowledge of technical design requirements, resourcing requirements and financing capability.
<b>Question 2: Interaction between the ISP and government policies</b>		
A)	The ISP will necessarily have to take into account government environmental and industry policies in modelling ISP scenarios. Do stakeholders consider it would be helpful for the COAG Energy Council to provide formal advice to AEMO as to what government policies or scenarios should be modelled in the ISP?	Modelling a wide spread of scenarios should capture the likely future policy outcomes. This is a preferable approach to relying on potentially politically motivated and arbitrary directions from COAG. Directing a single policy environment be examined exposes consumers to policy risk if that environment does not eventuate.
B)	Are there other ways in which government policies that impact on the NEM could be incorporated as modelled scenarios in the ISP?	Examination of a wide range of scenarios is essential to ensure that proposed transmission projects provide maximum value for consumers.
<b>Question 3: “Strategic, national” investments and regional investments</b>		
A)	It is proposed that the ISP only focusses on “strategic, national” investments. Do stakeholders consider this is appropriate?	The ISP should describe the most economically efficient investment path under a wide range of scenarios. Governments may take a strategic, national approach to investment in the industry and invest accordingly. However, the market frameworks should not encourage this approach unless it is clearly economically efficient to do so.
B)	If so, how could this threshold be defined, or what criteria could be used to define it?	
<b>Question 4: Risk allocation</b>		

Questions		Feedback
A)	The paper canvasses a number of options for making the ISP actionable. How may the existing risk allocation for consumers, TNSPs and generators change under the proposed options?	Risks to consumers increase as the options progressively remove decision making from the agents exposed to financial incentives. Maintaining a strong link between financial incentives and investment decision-making is the best way to ensure that rigorous examination of the options is undertaken.
B)	What other regulatory changes may be required in order to mitigate against changes in the risk allocation?	Enabling AEMO to exclude underperforming assets from the regulated asset base of a network business would incentivise close collaboration between network businesses and AEMO to ensure that only the most clearly beneficial investments are made.
<b>Question 5: Level of consultation required under each of the options for how the ISP could be made actionable</b>		
A)	What do stakeholders think about the level of consultation that would be required under each of the options considered for how to make the ISP an actionable strategic plan?	All options require additional consultation above that undertaken for the 2018 ISP. At a minimum, a draft outcomes stage should be inserted to enable detailed examination of the implications of scenario assumptions prior to final publication.
B)	Should there be more consultation for options that fall to the right-hand side of the table?	For options 3 and above the AER would need to be intimately involved in the ISP modelling process to ensure that it is comfortable with the final recommendations. Options 4 and 5 may require close collaboration between AEMO and senior leaders in network businesses and financing corporations. This is likely to be highly inefficient and necessarily opaque to remaining stakeholders who could not access the commercial investment information being discussed.
<b>Question 6: Role of the ISP, option 1 – Requirement for TNSPs to consider ISP- identified needs in their TAPRs</b>		
A)	What are stakeholder views on this option for how to make the ISP an actionable strategic plan?	This is Delta's preferred option as it would result in a minimal change to the risk allocation between consumers and network businesses while providing a whole of market view to network businesses and other stakeholders.

Questions		Feedback
B)	Would the effective delivery of this option have an impact on the speed with which “strategic, national” investments are made?	No, although it may prompt earlier examination of options that are at too large a scale to be economic in the near term.
C)	Are there any regulatory or other implications that are not raised in the discussion of this option?	
<b>Question 7: Role of the ISP, option 2 – Requirement for TNSPs to conduct RIT-T on ISP- identified needs and options</b>		
A)	What are stakeholder views on this option for how to make the ISP an actionable strategic plan?	This option allows AEMO to impose additional costs on network businesses through the requirement to undertake a RIT-T. This may lead to unnecessary costs being transferred to consumers.
B)	Would the effective delivery of this option have an impact on the speed with which “strategic, national” investments are made?	Only if the option had not previously been identified by network companies or other stakeholders. Delta is not aware of any such projects in the near term that were identified by the ISP but not previously proposed.
C)	Are there any regulatory or other implications that are not raised in the discussion of this option?	
<b>Question 8: Role of the ISP, option 3 – AEMO determines “best” option</b>		
A)	What are stakeholder views on this option for how to make the ISP an actionable strategic plan?	This option removes technical decisions from network companies with the most detailed technical knowledge of the local transmission system. Relying on less-detailed information is likely to lead to sub-optimal decision making and limit innovation.
B)	Would the effective delivery of this option have an impact on the speed with which “strategic, national” investments are made?	
C)	Are there any regulatory or other implications that are not raised in the discussion of this option?	
<b>Question 9: Role of the ISP, option 4 – AEMO directs TNSP to proceed with the “best” option</b>		

Questions		Feedback
A)	What are stakeholder views on this option for how to make the ISP an actionable strategic plan?	This option further removes decision making from the agent with exposure to financial incentives. Capital efficiency is likely to suffer as a result.
B)	Would the effective delivery of this option have an impact on the speed with which “strategic, national” investments are made?	
C)	Are there any regulatory or other implications that are not raised in the discussion of this option?	
<b>Question 10: Role of the ISP, option 5 – AEMO directs TNSP to implement the investment</b>		
A)	What are stakeholder views on this option for how to make the ISP an actionable strategic plan?	This option is unlikely to effectively leverage the detailed knowledge of the network that exists within network businesses.
B)	Would the effective delivery of this option have an impact on the speed with which “strategic, national” investments are made?	
C)	Are there any regulatory or other implications that are not raised in the discussion of this option?	
<b>Question 11: Other options and considerations</b>		
A)	Are there other options to strengthen the link between the ISP and individual TNSP investments that are not raised here?	
B)	Are there any other matters that should be taken into account when considering options to strengthen the link between the ISP and TNSPs’ individual investments?	
<b>Chapter 5 – the regulatory investment test for transmission</b>		
<b>Question 12: RIT-T benefits</b>		
A)	Are there any additional benefit categories that should be considered in the RIT-T?	
B)	Why have no network businesses sought approval from the AER for additional benefits to be considered in RIT-T assessments as allowed for under the current NER?	

Questions		Feedback
<b>Question 13: Potential concerns with the RIT-T process</b>		
A)	What are stakeholder views on current limitations with the RIT-T process?	The current RIT-T process provides a framework for rigorous economic assessment of transmission investment. Fundamental changes to the framework are not warranted and could lead to additional costs to consumers by facilitating inefficient network investment.
B)	Setting aside the ISP and how to make it more “actionable,” what other issues warrant attention when considering the objective of the RIT-T?	
C)	What changes may make the existing RIT-T process “faster”?	Further encouragement of real-options development by network businesses may help speed progression to construction once a market benefit has been identified. Real options would allow network businesses to recover costs for design and planning to ensure that when the market benefit turns positive, the construction can progress in a timely fashion.
D)	What is the role of a dispute process in the RIT-T? How could spurious disputes be minimised?	Disputes are currently necessary because the RIT-T modelling process is led by the project proponents. This reinforces the informational asymmetry between the project proponent and stakeholders. If the AER led the modelling of the RIT-T there would be a reduced need to include a dispute mechanism.
<b>Chapter 6 – Renewable Energy Zones</b>		
<b>Question 14: REZ options – enhanced information provision</b>		
A)	Do stakeholders agree with our conclusions for how this model can occur under current regulatory arrangements?	The current frameworks enable network businesses to invest in these types of projects and that enhanced information provision is the only real benefit of including

Questions		Feedback
		REZs analysis in the ISP. Option 1 is Delta's preferred option.
B)	Do stakeholders agree with our assessment of whether this REZ model is consistent with the options discussed for making the ISP actionable? What other considerations should be taken into account?	
<b>Question 15: REZ options – generator coordination</b>		
A)	Do stakeholders agree with our conclusions for how this model can occur under current regulatory arrangements?	
B)	Do stakeholders agree with our assessment of whether this REZ model is consistent with the options discussed for making the ISP actionable? What other considerations should be taken into account?	
<b>Question 16: REZ options – TNSP speculative investment</b>		
A)	Do stakeholders agree with our conclusions for how this model can occur under current regulatory arrangements?	
B)	Do stakeholders agree with our assessment of whether this REZ model is consistent with the options discussed for making the ISP actionable? What other considerations should be taken into account?	
<b>Question 17: REZ options – TNSP prescribed services</b>		
A)	Do stakeholders agree with our conclusions for how this model can occur under current regulatory arrangements?	
B)	Do stakeholders agree with our assessment of whether this REZ model is consistent with the options discussed for making the ISP actionable? What other considerations should be taken into account?	

Questions		Feedback
<b>Question 18: REZ options – clustering</b>		
A)	Do stakeholders agree with our conclusions for how this model can occur under current regulatory arrangements?	
B)	Do stakeholders agree with our assessment of whether this REZ model is consistent with the options discussed for making the ISP actionable? What other considerations should be taken into account?	
<b>Question 19: REZs and access</b>		
	Do stakeholders agree with our conclusion about the types of REZ models that are feasible under the current transmission access framework?	
<b>Chapter 7 – Congestion and access</b>		
<b>Question 20: Conclusion on need to consider access issues</b>		
	Do stakeholders agree with the Commission’s conclusion in this Chapter that access and congestion management issues are likely to need to be addressed in the near term, once the role of the ISP has been addressed?	Delta supports the current access arrangements for generation and sees little need for changes to congestion management frameworks.
<b>Chapter 8 – Treatment of storage</b>		
<b>Question 21: Storage and TUOS</b>		
	Do stakeholders agree with the way the Commission has framed the issue of whether or not storage should pay transmission use of system charges?	Delta sees no need to impose TUOS or DUOS charges on storage facilities during charging. Storage facilities that charge from the network and discharge the energy back to the network are providing a similar service to consumers as generators. If a market customer is a consumer of energy then the maximum cost that should be applied to storage facilities is for their net energy consumption. This would be



Questions		Feedback
		the difference between their generation and consumption over a period of time. Under the open access regime the storage facility would not be prevented from access to the regional node for either generation or charging. Again, the developer will take into account network capability when assessing location.
<b>Question 22: Storage and TUOS - current arrangements</b>		
	Do stakeholders have any comments on the Commission's initial views on storage and transmission charges? Are there any other arguments that are not discussed?	
<b>Question 23: Storage and TUOS - considering changing existing arrangements</b>		
	Are there any matters the Commission hasn't discussed that should be addressed if a change to the existing arrangements for transmission charging for storage is considered?	
<b>Question 24: Storage and TUOS - additional considerations</b>		
	When considering the approach to the recovery of transmission charges, are there any additional factors worthy of consideration that the Commission has not listed?	