

POST-2025 PROGRAM – STAKEHOLDER WORKGROUPS AND FEEDBACK

1. Stakeholder feedback – key themes

Technical Working Group and Advisory Group

#	Feedback Theme	Response to Feedback
1	<p>Government Intervention</p> <p>The risk government intervention is unavoidable. State and Federal Governments will evolve their policy positions on such topics as support schemes and decarbonisation as circumstances change. The proposed market design should aim to minimise the need for government intervention while also being cognisant of the fact that governments may and probably will interfere regardless.</p>	<p>Government has significant powers to intervene in any market design recommendations put forward. As such, the P2025 program is pursuing mechanisms that deliver confidence in the market and in government that expected reliability and other desired outcomes will be delivered.</p> <p>Clearly some areas, like transmission and planning, will not be served well by a market mechanism, but where there is a market solution, it is likely going to be more efficient and lower cost to consumers, so identifying where a market will work well is important.</p> <p>Adopting a mix of mechanisms to allow governments greater flexibility to influence outcomes so that the system is more robust to intervention is an approach that will be worked through in later stages of the program. This might address the broader issue of how to give voice to jurisdictional policy priorities and preferences, particularly in relation to resource adequacy.</p> <p>The ESB and SCO also have an important role in providing governments with clear advice on the implications of interventions into the energy system. This includes providing clarity on the criteria of success and indicators of potential failure for a market solution.</p>
2	<p>Implementation</p> <p>The complexity of implementing the chosen reforms will be significant. A detailed analysis of the sequencing of reforms will reduce the risks associated with it. It may be advantageous to give early reforms time to address issues and build market confidence before subsequent reforms are introduced.</p>	<p>Generally, the intent is to take an incremental and iterative approach to implementation which allows the incorporation of progressive learning. This may be accompanied by trials as precursors to widespread adoption, whereby the consequences of implementing sub-optimal solutions are minimised.</p>
3	<p>Integration of MDIs</p> <p>The MDIs have significant overlap and interdependencies, along with complexities around the coordination and timing of implementation. There is</p>	<p>We recognise that evaluating overall package of reforms as a systemic whole is possibly the most important part of the program. The ESB has an important role in trying to coordinate the various initiatives insofar as identifying how</p>

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	<p>the risk that if each MDI is addressed in isolation, the system operation as a whole becomes suboptimal. The best solution for a particular MDI may not be the best solution for the system overall.</p>	<p>they fit into the overall market design work. Hence the team has started to work through a structured methodology to identify the interdependencies between the various options that will be developed. Continuing this work will become a bigger focus as reform options are developed in more detail following the August consultation paper. Each MDI has developed a suite of options to maintain flexibility for the overall package of solutions put forward.</p>
<p>4</p>	<p>Parallel Work</p> <p>There are many field trials and initiatives on foot, as well as desktop analysis and work previously undertaken that relates to and would strengthen this body of work. It is important that industry expertise and experience is consolidated rather than duplicated.</p>	<p>The MDI teams will seek to reference all relevant work as they develop their options. The input of stakeholders regarding parallel work that would be of benefit is welcomed.</p>
<p>5</p>	<p>Investment uncertainty</p> <p>The P2025 program of work has the potential to contribute to an already uncertain investment outlook, potentially inhibiting investment due to anticipated changes and uncertainty around commercial outcomes introduced by a redesigned future market that is yet to be defined.</p>	<p>The P2025 program was established because of the inherently uncertain and changing context of Australia’s energy systems. A key focus of the P2025 program is to ensure efficient investment in the NEM is made to support a secure, reliable and affordable electricity supply for consumers. While the wider uncertainty pre-existed the P2025 program, in recognition of the important role it is playing, the ESB is keen to work with participants to mitigate the potential for exacerbating this further.</p>
<p>6</p>	<p>Future orientation</p> <p>Designing for the future presents challenges due to uncertainty around the intervening period, the natural tendency to be constrained by present thinking and externalities that may affect the industry.</p>	<p>The program has endeavoured to be disciplined in maintaining a future orientation. Where assumptions and trends can be extrapolated out with some accuracy into the Post 2025 period, they have been considered.</p>
<p>7</p>	<p>Consumer-centred design</p> <p>When assessing design options, it will be vitally important to consider consumer needs, protections, and be mindful that energy is an essential service.</p>	<p>Consumer-centred design is a key priority for the P2025 project. Consumer advocates have been specifically engaged to help shape our thinking around end-users. A range of consumer archetypes developed by Energy Consumers Australia (ECA) Consumer have been used to consider different customer needs and protections. There has also been deep engagement with large energy users in order to achieve a balanced set of outcomes.</p>

Resource Adequacy Mechanisms – MDI A

#	Feedback Theme	Response to Feedback
1	<p>Do we need a RAM? What problem are we trying to solve?</p> <p>Problem articulated in consultation paper and by many stakeholders is a lack of investment in the type and amount of capacity (generation and demand side) needed to balance growing proportion of VRE. This is a “here and now” or transitional problem.</p> <p>Alternative view is that the future NEM – with high VRE, DER, DR and potential two-sided market, where energy and services are all appropriately priced, and the demand and supply side are responsive, there will be no/less need for a RAM (except maybe as a backstop and/or consumer protection).</p>	<p>The consultation paper outlines sets out “investment risks” as the key problem. It sets out the potential reasons for investment risk – missing elements of markets, structural changes in the market and factors outside the market impacting investment – and states that a RAM could offset some of these risks.</p> <p>The paper invites stakeholder feedback to assist the ESB to determine if adjustments to RAMs may be necessary and to seek feedback on specific options.</p>
2	<p>Operational or investment signal?</p> <p>Broadly speaking, one group of stakeholders believe the focus of a RAM should be to sharpen real time price signals to deliver resource adequacy in operational timeframes. Theoretically, real time signals will translate into longer term investment signals where there is a need for additional capacity (or types of capacity). The other group think a RAM should provide more certainty over a long term, investment time horizon given the level of uncertainty (and therefore risk) is the main thing deterring investment in capacity (particularly peaking or dispatchable capacity that must build a business case on the back of high price events).</p>	<p>ESB has been clear it will consider how RAM options can sharpen real time prices <u>and</u> long-term investment signals. RAM/s (if pursued) will seek to underpin investment in the type and amount of capacity needed over both timeframes. This may be achieved by one RAM (e.g. sharpened operational signals that translate to investment signals over time) or multiple.</p>
3	<p>Effectiveness of “the market” when governments have such a strong influence on investment?</p> <p>Many stakeholders believe that any RAM needs to acknowledge/ accommodate/ provide a direct role for governments in resource adequacy. Some stakeholders note that only a very small proportion of NEM capacity has been “merchant” with no government support (financial or</p>	<p>The consultation paper addresses this matter directly and states that consideration will be given to how a RAM may improve government and community confidence that resource adequacy will be delivered by market and regulatory frameworks. The ESB notes that individual governments will always have individual resource adequacy needs as well as priorities outside the energy market that interact with energy market outcomes but encourages governments to leverage the risk and incentive structures built into the current (and future) framework design and understand the impacts of any regionally-targeted policies on the NEM as a whole.</p>

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	<p>otherwise). Others say that just because governments <i>have</i> supported investment, doesn't mean the market, <i>wouldn't have</i>. Even a perfectly designed RAM may not provide strong enough investment signals to offset the risk of policy uncertainty or government intervention.</p>	
4	<p>Interaction with ESS workstream – how do “operating reserves” relate to both resource adequacy and delivery of essential system services.</p> <p>Many stakeholders have noted the interactions between “missing markets” for system services (which is the focus of ESS MDI) and potential “missing markets” for dispatchability/ flexibility/ scarcity (which is part of RAM work)</p>	<p>The RAM section explores operating reserves as a way of delivering resources adequacy (aka reliability outcomes). Interactions with the ESS workstream are highlighted. The ESS workstream goes into more detail about how operating reserves can be considered as a system service (aka security outcomes).</p>
5	<p>Interaction with thermal generation strategy – are we relying on a RAM to fill capacity gaps resulting from thermal exit?</p>	<p>The RAM section focuses on mechanisms that could deliver ongoing resource adequacy no matter what dynamic the NEM is facing. This may or may not include situations when a thermal generator exists. The thermal generation exit strategy section goes into more detail about how RAMs may be used as part of a strategy to ensure sufficient resources are available after a generator exits the NEM.</p>
6	<p>Impact of and role for distributed energy resources in delivering resource adequacy.</p> <p>One group of stakeholders have pointed out the lack of focus in this workstream on specifically integrating DER and DR into the thinking on the potential need and options for a RAM.</p>	<p>DER is not specifically referenced in the consultation paper section. FTI has addressed the role of DER (and DR) in its advice to ESB where relevant.</p> <p>The key interactions of DER with RAM work steam is as follows:</p> <ul style="list-style-type: none"> - Aggregated DER may be able to offer services under a new or adjusted RAM if they are able to compete effectively with other types of resources providers. It may also take some time before DER reaches sufficient scale and reliable performance for it to participate in RAMs. Any RAM design could still be effective in the absence of DER. - Customers may be able to realise additional value of their DER and demand response (or avoid costs) by proving resources at times of need. - The degree to which DER can actively participate in the RAM by acting as a firm source will be considered as will the degree to which the changing DER functionalities and operational characteristics may decrease the need for the RAM. -

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		Each of these interactions will be considered in the DER or two sided markets workstreams or in subsequent phases of work once the RAMs options are further developed.
7	<p>Costs to consumers or maintaining (increasing?) reliability through additional/adjusted RAMs.</p> <p>Stakeholders representing both large and small consumers have noted throughout the process that the ESB should be focused on customers willingness to pay for maintaining (or increasing) reliability outcomes if a RAM is introduced as the means of doing this.</p>	ESB has not directly addressed this matter in the RAM section. Costs to consumers will be addressed in the next phase of work as options are developed in more detail.
8	International markets can only provide learnings, not answers for the NEM	The ESB has not directly addressed this matter in the RAM section. In its advice to ESB FTI does point out where and how international examples referenced may differ in the NEM context.
9	<p>RAMs to encourage a lower emission future.</p> <p>A group of stakeholders have suggested any new or adjusted RAM should focus on facilitating the transition to a lower emission NEM and not on retaining incumbent capacity any longer than necessary.</p>	The ESB has not addressed this directly in the RAM section but is relying on other sections that make it clear that the ESB acknowledged the future NEM will have a significantly higher proportion of renewables and other new technology.

Thermal Generation Exit Strategy – MDI B

#	Feedback Theme	Response to Feedback
1	<p>Risk Mitigation</p> <p>The risk of disorderly exit is great. Any proposed market design should adequately incentivise incumbent generation to stay in the market.</p>	The focus of MDI B – Ageing Thermal Generator Strategy section of the consultation paper is on the risk that large ‘blocks’ of generation leaves the market in an <i>inefficient</i> way that leads to issues for reliability, security and/or costs for consumers. There is a discussion of what is meant by inefficient closure, and whether these risks are addressed by existing and future market arrangements.
2	<p>Technology Neutrality</p> <p>A concern that large plant is considered ‘reliable’ when a mix of VRE and batteries can also provide reliability.</p>	The consultation paper notes that ageing thermal generators can and will be replaced by a mix of generation and storage sources. It notes that newer sources of generation are more ‘modular’ and often have shorter lead times allowing them to be deployed quickly.

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3	<p>Exit Timing</p> <p>“Order” for exit processes should not delay exit that should naturally occur.</p>	<p>The focus in the consultation paper is on the risk of inefficient exit that may cause issues for reliability, security and/or costs for consumers. The efficient exit of large thermal generators is the intended outcome of the market design and would not be prevented.</p>

Essential System Services – MDI C

#	Feedback Theme	Response to Feedback
1	<p>Philosophy of approach and scope</p> <p>Is the ESB approaching this from a completely blank page?</p> <p>How appropriate could NEM-Evolve/+etc solutions be for a future with >90% renewable energy future (and >40% DER)?</p> <p>How holistically is the ESB looking at the range of system services? How much is co-optimisation being considered?</p> <p>How will the framework be able to evolve with technology/system change?</p>	<p>The Consultation Paper references AEMO’s Renewable Integration Study and 2020 ISP with strong acknowledgement of step-change scenarios.</p> <p>The key principles of technology neutrality are flagged, enabling renewables/DER/batteries/new technologies to provide services where possible.</p> <p>The proposed framework supports co-optimisation (and nested co-optimisation) if/when possible.</p>
2	<p>Procurement and Ahead Markets</p> <p>There seems to be an inherent preference towards spot market demand curves. What is the analysis of the trade-off in complexity?</p> <p>What about the services that are not suited to spot-markets?</p> <p>What about consideration of scarcity pricing, distortionary effects, government intervention, and interaction of financial markets?</p>	<p>The Consultation Paper identifies a preference to move toward spot-market based procurement when the system and/or technology allows, and when market circumstances make this the most efficient choice.</p> <p>The rationale is that spot-market driven approaches allow the clearest valuation of a service which allows market risk to not be carried disproportionately by consumers.</p> <p>But there is recognition in the paper:</p> <ol style="list-style-type: none"> 1) That some services do not currently appear capable to be procured in a real-time spot market (e.g. elements of system strength) 2) Other approaches may be necessary, at least while we are transitioning the composition of resources on the grid. These approaches, including NSP and/or AEMO structured procurement, potentially accompanied by standardised requirements on all generators, may be both necessary and efficient to provide those services which are not amenable to being procured through a

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		decentralised spot market approach, at least in the short-term.
3	<p>Investment signals</p> <p>How much consideration is the ESB giving to ‘investability’?</p> <p>Particularly whether spot markets would truly give a sufficient investment signal to provide ‘resource adequacy’ in these markets.</p> <p>Where are the incentives for new technology? Long contracts do not generally encourage innovation – are there alternatives?</p>	<p>The paper notes that while spot markets can provide efficient real time signals, the volatility of the resulting prices, the small size of those markets and the difficulty in customers hedging shared services may make investment difficult.</p> <p>Highlighting:</p> <p>A successful procurement framework for system services would support investment in both new resources (e.g. batteries), but also existing resources which may be able to provide services with little or no energy – such as generators able to run in synchronous condenser mode or at reducing minimum generation, if enabled.</p> <p>Bilateral contracting and financial contracting (with CfD elements) are explored as alternatives alongside long term contracting, regulated provision by TNSPs or obligations on connecting generators.</p>
4	<p>Interaction with Ahead Markets</p> <p>How would the coordination of resources/units work in the ahead time-frame? How will this be co-optimised with energy if at all?</p> <p>How will scheduled resources be compensated?</p>	<p>Where resources and services are coordinated in ahead-timeframes, there is significant congruency between this MDI and the Scheduling and Ahead Markets MDI.</p> <p>There are several options for this interaction including: contracting arrangements, financial contracting, availability/activation-payments, CfD’s with a spot-market, make-whole provisions, etc.</p>
5	<p>Costs and cost-recovery</p> <p>Where is the acknowledgement of the asymmetric risks of under procurement vs over-procurement? i.e. greater consequences for under-procurement (load-shedding/etc).</p> <p>Causer/beneficiary pays?</p>	<p>An ‘Operating Envelope’ approach that allows flexibility in the initial stages of the transition will help to mitigate the risks of under procurement in the short term, supporting greater efficiency as confidence increases.</p> <p>Both causer/beneficiary-pays principles may be explored. Internationally, system services are most commonly procured centrally by a SO. To the extent that the relevant beneficiaries and/or causers can be identified, the cost of purchasing these services is sometimes recovered from beneficiaries and sometimes also from causers.</p>

Scheduling and Ahead Markets – MDI D

#	Feedback Theme	Response to Feedback
1	<p>Interaction with ESS and Ahead Markets</p> <p>System services and their procurement method should be defined as an input to the UCS and ahead market design work.</p>	<p>The ESS and Ahead Market streams are closely related, and the relevant teams are working closely to align the options under consideration. The linkages between the streams are highlighted in the paper.</p>
2	<p>Relationship between pre-dispatch, UCS and an ahead market</p> <p>How does the UCS relate to the pre-dispatch process?</p> <p>How would an ahead market improve AEMO's foresight of participant behaviour and power system conditions</p>	<p>The paper outlines the different purposes that UCS and pre-dispatch serve. Pre-dispatch provides a forecast of the dispatch and pricing while UCS is a tool that would allow AEMO to assess the power system.</p> <p>An ahead market would facilitate additional trading, and in turn, commitment of resources in the operational horizon. An ahead market also creates incentives for participants to follow their day-ahead schedules.</p>
3	<p>UCS and the scheduling of system services</p> <p>What role would UCS have in scheduling services?</p>	<p>The paper shows the potential role of UCS in guiding the activation of system services under contract where a market does not exist for those services. The paper also describes the role of UCS in identifying any gaps in requirements and guiding intervention decisions for services that markets exist.</p>
4	<p>UCS inputs and processing</p> <p>Is it appropriate for economic costs to be used as an input for the UCS?</p> <p>How would the UCS make the decision between different types of generators that may be required to meet power system requirements.</p> <p>At what time would the UCS processing occur?</p>	<p>The appendix to the paper discusses these more detailed UCS concepts.</p> <p>Out-of-market commitments identified by the UCS would be equivalent to the intervention and direction process today and would only occur if there has not been sufficient market-based commitment or system service contracts to meet an identified system shortfall.</p> <p>The UCS algorithm would optimise across binary variables and therefore co-optimize the provision of services which depend on commitment (such as system strength) with services which depend on output (such as energy).</p> <p>Preliminary thinking is that a full UCS run would be completed day-ahead for the full trading day (a daily UCS, or DUCS) and following that it would be updated regularly (e.g. every hour or two) via the hourly UCS (HUCS) process. Action to direct any required resources to meet a gap identified by the UCS would be left as late as possible.</p>
5	<p>Trading and co-optimisation of system services in an ahead market</p>	<p>The paper outlines the use case for participants to trade system services in an ahead market including the hedging of uncertainty associated with price or cost obligations and to aid unit commitment decision making.</p>

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	<p>What incentives are there to participate in two-sided ahead markets for system security services?</p> <p>How will increased co-optimisation in ahead mechanisms work to produce increased scheduling efficiency?</p>	<p>Co-optimisation of energy and system services is discussed in the appendix. Co-optimisation in ahead scheduling means that the ahead prices and quantities are set by taking into account the trade-offs among various services, which is likely to lead to a more efficient resource mix and price signals.</p>
6	<p>Participation in an ahead market</p> <p>Stakeholders sought clarity on what is meant by a voluntary ahead market.</p> <p>Would an ahead market facilitate greater levels of demand participation in the wholesale market?</p>	<p>The paper (as did the March COAG paper) outlines a number of options for the participation framework but focusses on a voluntary participation model. Under a voluntary participation model, participants would not be obliged to bid into a voluntary ahead market and not would be obliged to follow their day ahead schedule (there would be financial implications for the participant). Real-time dispatch targets are not tied to a participant's schedule (or lack thereof) in a voluntary ahead market.</p> <p>The paper outlines a demand response use case for ahead markets. The more elastic nature of demand in the longer term means that ahead scheduling could potentially encourage more participation from demand response resources. A key benefit of an ahead market is that it offers more time for loads to react to ahead market schedules before real-time.</p>
7	<p>Bidding in an ahead market</p> <p>Would three-part bids and uplift payments be necessary?</p>	<p>This more detailed topic of bidding arrangements is discussed in the appendix to the paper. Three-part bidding allows participants to offer a start-up cost, cost to run at minimum generation and incremental service provision cost. A typical ahead market design that with three-part bids incorporates an uplift payment to ensure that a marginal generator that sets prices can cover its costs across the scheduling horizon. Alternatives to uplift payments that will be considered for the NEM include allowing participants to self-manage this risk through their bids and more sophisticated scheduling algorithms which only clear bids assuming a minimum revenue requirement is met over a period of time.</p>
8	<p>Unit commitment under an ahead market</p> <p>Would an ahead market assist unit commitment decisions for slow start resources?</p>	<p>The appendix discusses self-commitment and central commitment models for an ahead market.</p> <p>Plant which are relatively flexible day-to-day but relatively inflexible over short timeframes, and whose incremental energy cost/benefit is priced around the margin are likely to benefit from the introduction of an ahead mechanism. This encompasses the unit commitment decisions of slow start plant, but potentially also the scheduling decisions of certain types of controllable loads.</p>
9	<p>Relationship between ahead market and real-time market</p>	<p>The appendix discusses these more detailed ahead market concepts</p>

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	<p>How would revenue streams link across contracts and the settlement of the ahead and real-time markets?</p> <p>Could an ahead market impact on price volatility and trading behaviour of market participants?</p>	<p>If a resource is traded in the ahead market and has a hedging contract linked to the ahead prices, the hedging contract will be settled against the ahead prices. It will also settle any deviation in its real-time output from its ahead schedule at the real time price. If the resource trades only in real-time market and has its hedging contracts linked to the real-time market price, then it will be no different from today.</p> <p>Ahead markets provide participants an opportunity to manage risk in the operational horizon. To the extent that this increases hedge levels, and to the extent that this makes participants less likely to deviate from their day ahead projections, this would reduce volatility in real time markets.</p>

Two-Sided Markets – MDI E

#	Feedback Theme	Response to Feedback
1	<p>Problem Definition</p> <p>Stakeholders have noted they are not aligned with, or do not have a clear understanding of our articulation of the problem and opportunity statement.</p>	<p>The team has had discussions with the technical working group and consumer reference group to identify the key areas of concern. In response to this the consultation paper will be expanded to provide more detail on:</p> <ul style="list-style-type: none"> • The problems that are associated with increasingly variable and uncertain demand • Misunderstanding regarding the assignment of obligations for market participation. The role of traders (retailers and aggregators) in the market vs the role of consumers (i.e. we are not expecting consumers to participate in the market to any degree more than they would in the current NEM) • In the first instance where traders choose to opt-in, any obligations and incentives will be placed on traders (retailers and aggregators) to include activities into the wholesale market (in particular around forecasting and dispatch). This will include price signals being sent to third parties to incentivise them to provide more innovative services to their customers. In the long term, when technology has matured such that more end user activities can participate in a centralised manner, a consistent set of obligations and incentives for participation in dispatch may apply. • The role of consumer protections <p>In providing this detail and clarity, the MDI discussions can focus on the design of the market.</p>
2	<p>Participation Framework</p> <p>In TWG discussions on the proposed participation framework, stakeholders</p>	<p>In follow up discussion we have noted to stakeholders that all options are currently under consideration and the benefits</p>

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	have questioned whether we are proposing that customers who have active demand should have multiple connection points or if are exploring multiple trading relations (where there is more than one retailer per connection point).	and trade-off for both need to be further developed. Importantly, one model does not preclude the existence or emergence of other models over time. The consultation paper does not go into specific detail about the options so no changes to the consultation paper need to be made. We are developing this work further for the December paper.
3	Implementation Stakeholders have consistently expressed concern over the proposed rate of change for this workstream	The two-sided market MDI is taking a transitional approach and is not intending radical changes to the market in the short-term. The consultation paper steps out the types of changes that could be made in the short-term to the existing market to encourage more demand-side participation. Larger scale changes can then be considered over the medium to long term.
4	Scope Some stakeholders have noted that they would like to see the scope of two-side market workstream to go beyond what we intend to tackle.	The consultation paper highlights those areas we intend to address as part of the two-sided market workstream. We will continue to work with stakeholders to make this scope clear.
5	Consumer Protections Consumer groups have noted concern with how consumers will be expected to participate in the market, the role of consumer protections and how the market design should assist customers who are not able to participate.	The consultation paper now includes a section on the use of the consumer archetypes and that the outcomes of this work will be to develop a clear view of the: <ul style="list-style-type: none"> • types of customers who can achieve the greatest benefits from the two-sided market (noting that all customers will benefit from a more efficient market) • protections that will be made available to all customers whether they are actively participating or not • customers who will still require assistance, including to improve their motivation, ability and opportunity, and the areas they are likely to need that assistance (this can enable specific targeted programs to be considered by governments and policy makers).

DER Integration – MDI F

#	Feedback Theme	Response to Feedback
1	End-user Focus Customer Engagement in DER integration was identified by stakeholders as crucial to effective DER integration	The next stage of the post 2025 program will investigate motivations of customers, both financial and non-financial, how this plays out for customer segments and ensuring technological neutrality in market design.
2	Co-optimisation	The post-2025 market design will to identify the steps required to maximise efficient co-optimisation, which will emerge as the details of the different market designs

#	Feedback Theme	Response to Feedback
	Co-optimisation of value streams from DER and the degree to which customers, aggregators, DNSPs and AEMO have a role.	(especially 2SM, Ahead mechanisms and ESS) are developed, and the types of DER functionalities are developed and deployed
3	Value stacking Value stacking was identified as a key component of any market design from a DER perspective as many investments will require value to be drawn from multiple streams.	Further work identified in the August report and for the period to December will include collecting the products and services relevant to DER including use-cases and potential value streams for customer and distribution connected DER.
4	Prioritisation Prioritisation of the reforms necessary to integrate DER was identified as a key issue.	The August report identified the three horizons for market integration of DER – foundational measures, facilitated participation and deep market integration.
5	Distribution level markets Distribution level markets and the need to determine the role of Networks in future market design.	This was not a feature of the early work on DER Integration but there is an acknowledgement that the design questions will need to be addressed in the P2025 work, with consideration given to how the implementation of these should complement the final P2025 NEM Design.

ACCESS AND TRANSMISSION - MDI G

#	Feedback Theme	Response to Feedback
1	Investment signals Proposed reforms will stifle generation investment.	The intent of transmission access reform is to encourage new investments (renewables, storage and other resources) to locate in the transmission network in the best place so that the network is most effectively used, while taking into account all inputs to their investment decisions. Investors will have more information about transmission capacity in order to better inform their decisions and a better ability to manage congestion and related risk.
2	Problem Definition Transmission investment is a solution to the problem of congestion, not access reform.	Transmission access reform is intended to complement the actionable Integrated System Plan (ISP). The ISP will support decisions for efficient and timely transmission investment. The system also needs better locational signals for generators, such that investors can make more informed locational decisions, making sure the transmission network is used effectively, and creating benefits for consumers. This is what the transmission access reforms seek to deliver.

3	<p>Quantitative analysis</p> <p>The case for change has not been made. Quantitative analysis of benefits is required.</p>	<p>AEMC has engaged NERA Economic Consulting to undertake quantitative analysis of the costs and benefits of implementing the reform in the NEM. The net benefits indicated from this analysis are significant.</p> <p>Further, AEMC has also commissioned preliminary, high-level work to consider the IT related costs of implementation. The preliminary estimates are of a magnitude less than the estimated benefits. The AEMC is going to work closely with AEMO and market participants to provide more precise cost estimates over the coming months.</p> <p>Supporting analysis can be found at: https://www.aemc.gov.au/market-reviews-advice/coordination-generation-and-transmission-investment-implementation-access-and</p>
4	<p>Proportionality</p> <p>The reforms are too complicated and will add cost and barriers to entry.</p>	<p>The ESB acknowledges stakeholder concerns on this point and notes the efforts taken by AEMC to address this in the design e.g. by simplifying the number of nodes that FTRs can be purchased from / to.</p> <p>The complexity is inherently a function of the physics of the system – the access reforms make that complexity more transparent, rather than increasing it. International experience reflects that embedding LMP and FTRs is not a barrier to entry.</p> <p>Feedback is welcome on the modelling and supporting analysis published by AEMC.</p>
5	<p>Transitional arrangements</p> <p>Transitional financial transmission rights are needed.</p>	<p>In relation to proposed transmission access reforms, AEMC has made clear that existing generators would receive an amount of FTRs for free that would taper off over time.</p> <p>Details relating to allocation of transitional FTRs are discussed in AEMC's report. All AEMC material on COGATI can be found at: https://www.aemc.gov.au/market-reviews-advice/coordination-generation-and-transmission-investment-implementation-access-and</p>

2. Post-2025 Program – stakeholder workgroups

To gain input from the rich diversity of stakeholder perspectives, a suite of stakeholder workgroups have been established to support the Post-2025 program. The ESB has sought to include stakeholder representation from across the market in these workgroups, and the broad range of input and feedback received to date has been valuable in shaping the program and outputs from across the component workstreams.

These workgroups include the following:

- **Technical Working Group** – enabling discussion at operational level on technical aspects of program design and development of potential solutions. A number of workstream specific groups have also met on multiple occasions to discuss design issues relating to these MDIs.
- **Advisory Group** – enabling discussion at strategic level on key priorities for program design over both the transition and for longer term development.
- **Interdependencies and Evaluation Workgroup** – enabling discussion on how to evaluate workstream solutions, ensuring congruency and coherence of proposals.

The stakeholder organisations represented in each of these groups and a breakdown of meetings held is set out below.

Further details regarding the workgroup forums can be found at the ESB Post-2025 program website.

Technical Working Group

ACOSS
AEC
AGL
AI Group
ANU
ARENA
Ausgrid
AusNet
Australian Aluminium Council
CEC
Citipower
Clean Energy Finance Corporation
CleanCo
CS Energy
CSIRO
Delta Electricity

Department of State Growth
Enel Green Power
Enel X
Energy Australia
Energy Consumers Australia
Energy Efficiency Council
Energy Networks Australia
Engie
ERM Power
EUAA
Flow Power
GreenSync
Hydro Tasmania
Infigen Energy
MEI
Monash University
Morgan Stanley
Online Power
Origin
PIAC
Powershop/Telstra
Rio Tinto
SA Power Networks
Snowy Hydro
Spark Infrastructure
St Vincent de Paul
TasNetworks
Tesla
Westpac

P2025 Technical Working Group (TWG) meetings	
9-Mar-20	TWG Monthly Meeting – March 2020 (Recording available)
16-Apr-20	TWG Monthly Meeting – April 2020 (Recording available)
21-May-20	TWG Monthly Meeting – May 2020 (Recording available)
18-Jun-20	TWG Monthly Meeting – June 2020 (Recording available)
23-Jul-20	TWG Monthly Meeting – July 2020
20-Aug-20	TWG Monthly Meeting – August 2020

Advisory Group

ARENA
Clean Energy Council
ENEA Australia
Energy Consumers Australia
Energy Networks Australia
Energy Australia
Essential Energy
EUAA Director
Grattan Institute
GreenSync
Hydro Tasmania
Independent Director
Powerlink
Jemena
Macquarie Bank
Productivity Commission
SCO Representative
Swinburne University
Telstra
Tesla
Transgrid
UNSW

P2025 Advisory Group (AG) meetings	
17-Apr-20	AG Monthly Meeting – April 2020
22-May-20	AG Monthly Meeting – May 2020
19-Jun-20	AG Monthly Meeting – June 2020
24-Jul-20	AG Monthly Meeting – July 2020
21-Aug-20	AG Monthly Meeting – August 2020

TWG – RAM Focus Group

ANU
AGL Energy
AusNet Services
Australian Aluminium Council
Australian Energy Council
CEFC
CleanCo
Department of Natural Resources, Mines and Energy (QLD)
Department of Industry, Science, Energy and Resources
Enea Consulting
Enel Green Power
Energy Australia
Energy Users Association of Australia
ENGIE Australia & New Zealand
Flow Power
Grattan Institute
Hydro Tasmania
Infigen Energy
Macquarie Capital
MarketWise Solutions
Morgan Stanley
Nous Group

Origin Energy
PIAC
SA Department for Energy & Mining
Snowy Hydro
Tesla
UNSW

MDI-A Resource Adequacy Mechanisms	
8-May-20	MDI-A Focus Group: Resource Adequacy Mechanisms #1
4-Jun-20	MDI-A Focus Group: Resource Adequacy Mechanisms #1 - Open Mic Q&A

TWG – ESS Focus Group

ARENA
AGL Energy
Ausgrid
Australian Aluminium Council
Australian Energy Council
Clean Energy Council
Clean Energy Finance Corporation
CleanCo
CS Energy
Department of Natural Resources, Mines and Energy (QLD)
Department of Industry, Science, Energy and Resources
Enea Consulting
Energy Australia
Energy Networks Australia
Energy Users Association of Australia
ENGIE Australia & New Zealand
Flow Power
Hydro Tasmania
Infigen Energy
Macquarie Capital

MarketWise Solutions
Origin
PIAC
SA Department for Energy & Mining
Snowy Hydro
Tesla
UNSW

MDI-C: Essential System Services	
1-May-20	MDI-C Focus Group: Essential System Services #1
16-July-20	MDI-C Focus Group: Essential System Services #2

TWG – Ahead Markets Focus Group

ANU
AGL Energy
AusNet Services
Australian Aluminium Council
Clean Energy Council
Clean Energy Finance Corporation
CleanCo
CS Energy
Delta Electricity
Department of Industry, Science, Energy and Resources
Department of Natural Resources, Mines and Energy (QLD)
Enea Consulting
Energy Networks Australia
EnergyAustralia
ENGIE Australia & New Zealand
Flow Power
Grattan Institute
Hydro Tasmania
Infigen Energy

Macquarie Capital
MarketWise Solutions
Online Power
Origin Energy
PIAC
SA Department for Energy & Mining
Snowy Hydro
Tesla
UNSW

MDI-D: Scheduling & Ahead Markets	
7-Apr-20	MDI-D Focus Group: Scheduling & Ahead Markets #1
14-May-20	MDI-D Focus Group: Scheduling & Ahead Markets #2a - UCS
20-May-20	MDI-D Focus Group: Scheduling & Ahead Markets #2b - Open Mic Q&A
26-Jun-20	MDI-D Focus Group: Scheduling & Ahead Markets #4a – Design Elements
30-Jun-20	MDI-D Focus Group: Scheduling & Ahead Markets #4b - Open Mic Q&A
19-Aug-20	MDI-D Focus Group: Scheduling & Ahead Markets #5a – Design Elements
25-Aug-20	MDI-D Focus Group: Scheduling & Ahead Markets #5b - Open Mic Q&A

TWG – Two-Sided Markets Focus Group

ACOSS
AGL Energy
ANU
ARENA
Ausgrid
AusNet Services
Australian Aluminium Council
Australian Energy Council
Australian Industry Group
CEFC

Clean Energy Council
CS Energy
Department of Natural Resources, Mines and Energy (QLD)
Department of Industry, Science, Energy and Resources
Enea Consulting
Enel X
Energy Australia
Energy Consumers Australia
Energy Networks Australia
Essential Energy
Flow Power
GreenSync
Infigen Energy
Macquarie Capital
MarketWise Solutions
Morgan Stanley
Online Power
Origin Energy
PIAC
Red Energy
SA Department for Energy & Mining
SA Power Networks
Simply Energy
Snowy Hydro
Spark Infrastructure
Tesla
UNSW

MDI-E:	Two-Sided Markets
9-Apr-20	MDI-E Focus Group: Two-sided Markets #1
15-Jun-20	MDI-E Focus Group: Two-Sided Markets #2 – Consultation Paper Feedback
20-Jul-20	MDI-E Focus Group: Two-Sided Markets #3a – Design Elements
24-Jul-20	MDI-E Focus Group: Two-Sided Markets #3b – Open Mic Q&A
11 Aug 20	MDI-E Focus Group: Two-Sided Markets #4 – Design Elements

Customer Forum – Two Sided Markets

ACOSS
ACTCOSS
Energetic Communities
Energy Consumers Australia (ECA)
PIAC
QCOSS
Renew
SACOSS
St Vincent de Paul
Total Environment Centre
Uniting Communities

MDI-E:	Two-Sided Markets – Customer Forum
25-Jun-20	Post-2025 Market Reform – program overview
02-Jul-20	Two-Sided Markets discussion
16-Jul-20	Post-2025 Market Reform – program discussion
06-Aug-20	Two-Sided Markets discussion
12-Aug-20	Two-Sided Markets discussion

TWG – DER Integration Focus Group

AGL Energy
ANU
ARENA
Ausgrid
AusNet Services
Australian Aluminium Council
Australian Energy Council
CEFC
Clean Energy Council
CleanCo
CSIRO
Department of Natural Resources, Mines and Energy (QLD)
Department of Industry, Science, Energy and Resources
Enea Consulting
Energy Consumers Australia
Energy Networks Australia
Energy Users Association of Australia
Essential Energy
Evergen
Flow Power
GreenSync
Jemena
Macquarie Capital
MarketWise Solutions
Online Power
Origin Energy
PIAC
Red Energy
SA Department for Energy & Mining
SA Power Networks
Simply Energy
Snowy Hydro

Spark Infrastructure
Tesla
UNSW

MDI-F: DER Integration	
30-Jun-20	MDI-F Focus Group: DER Integration #1a
21-Jul-20	MDI-F Focus Group: DER Integration #2
28-Jul-20	MDI-F Focus Group: DER Integration #2b – Open Mic Q&A

TWG – Transmission Access Reform Focus Group

AEC
AEMO
AER
AFMA
AGL
AI Group
ARENA
Aurizon
AusNet
CEC
Clean Energy Finance Corporation
CleanCo
CS Energy
CSIRO
ECA
Electranet
Enel Green Power
Energy Australia
Energy Networks Australia
ERM Power
ESB
EUAA
Flow Power

Goldwind Australia
Infigen
Intergen
Lighthouse Infrastructure
Meridian Energy
Monash University
Morgan Stanley
Neoen
Origin Energy
PIAC
Powerlink
Rio Tinto
RWE
Snowy Hydro
Spark Infrastructure
TasNetworks
Tilt Renewables
Transgrid
UPC Renewables
Westpac

MDI-G: COGATI	
29 May 20	Public Forum: COGATI International experience of LMP/FTRs
5 Jun 20	MDI-G Focus Group: COGATI Reform Design #6 (Auctions and losses)
12 Jun 20	MDI-G Focus Group: COGATI Reform Design #7 (Auctions and losses)
18 Jun 20	MDI-G Focus Group: COGATI Cost benefit analysis #8
9 Jul 20	MDI-G Focus Group: COGATI Contract market liquidity #9
24 Jul 20	MDI-G Focus Group: COGATI Reform Design #10 (Transitionals and Simplification)
30 Jul 20	MDI-G Focus Group: COGATI Reform Design #11 (Market power mitigation)