

Reform Delivery Committee

November 2021



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past, present and emerging.

1. Welcome and Purpose
2. Terms of Reference
3. ESB Reform Program Overview
4. Implementation Roadmap
5. Approach and Forward Plan
6. Next Steps



1. Welcome and Purpose

Reform Delivery Committee

Committee Members

Name	Organisation	Representing
Violette Mouchaileh (Chair)	AEMO	AEMO
Tony Chappel	AEMO	AEMO
Ben Davis	AEMC	AEMC
Mark Feather	AER	AER
Fergus Stuart	Origin	AEC
Annemie Kotze	Stanwell	AEC
Michael Bell/Stefanie Monaco	Red Energy	AEC
Rob Amphlett Lewis	Ausgrid	ENA
Eva Hanly	Transgrid	ENA
Greg Hannan	Citipower/Powercor/United Energy	ENA
Declan Kelly	Flow Power	EEC
David Headberry	Major Energy Users Association	MEU
Brain Spak	Energy Consumers Australia	ECA
Andrew Richards	Energy Users Association Australia	EUAA
Craig Memery	PIAC	PIAC
Craig Chambers	Engevity	CEC

AEMO's objective is to establish a collaborative process with stakeholders to define a roadmap for implementing the NEM2025 reforms.

This roadmap can then be used by all stakeholders to assist in navigating the reforms over the coming few years, de-risk delivery and to inform regulatory implementation timings.

The Reform Delivery Committee is seen as pivotal in establishing and guiding the NEM2025 implementation roadmap.

Purpose of today's session is to:

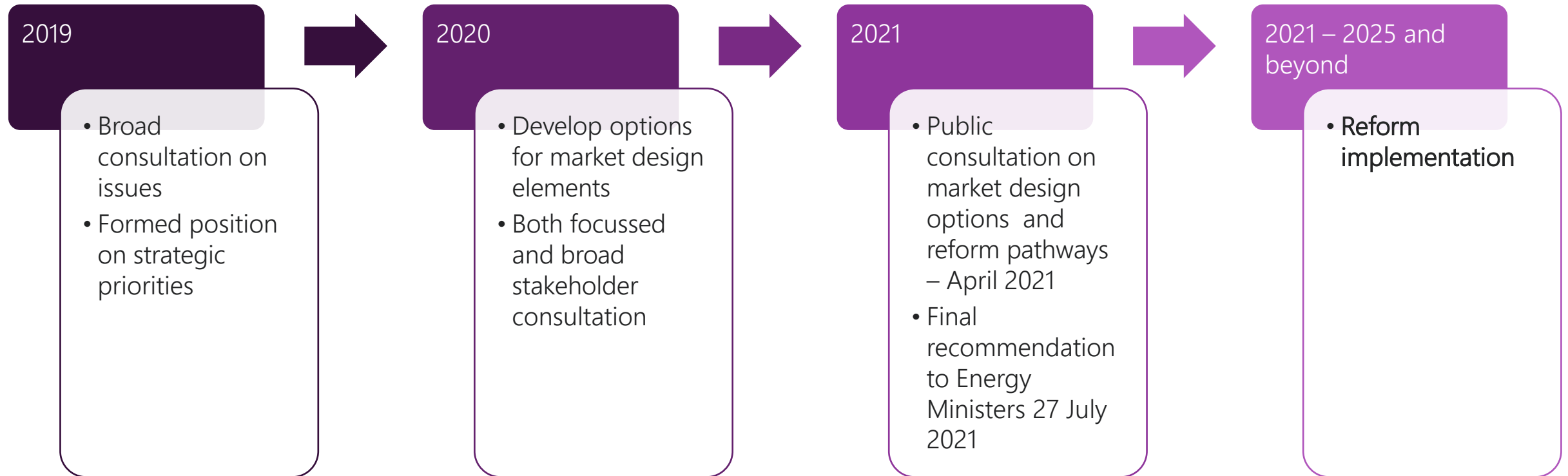
- Introduce the Reform Delivery Committee
- Outline AEMO's objectives for the Committee, and receive feedback from Committee members on the role
- Set out the background and implementation activities required – to set the scope
- Discuss the roadmap and identify key principles
- Propose an approach and agree with the Committee the process to best develop the Roadmap

2. Terms of Reference

- The ESB provided its final advice on the Post-2025 reforms to the Energy National Cabinet Reform Committee on 27 July. National Cabinet approved the Post-2025 reform recommendations on 29 October.
- One of the main enablers for the reforms is the development of IT systems and business processes.
- An initial assessment of the impacts associated with the delivery of the reforms was prepared by AEMO and formed part of the ESB's final advice.
- The ESB's final advice called for further consideration of how to deliver these changes together with industry stakeholders as part of an integrated roadmap approach for NEM regulatory and IT systems implementation.
- The objective of the NEM Roadmap is to enable careful planning for the delivery of reforms, avoid unnecessary or duplicative costs, and identify where strategic investments can be made to deliver efficient outcomes for AEMO, market participants and consumers.
- The Reform Delivery Committee is being established to support the development of the integrated roadmap.
- The draft Terms of Reference (ToR) which establish the Committee and its scope, functions and governance have been circulated. AEMO invites the Committee's feedback on the draft ToR.
- AEMO is also keen to discuss collaborative ways of working as a Committee on the development of the roadmap between key milestone meetings.

3. ESB Reform Initiatives

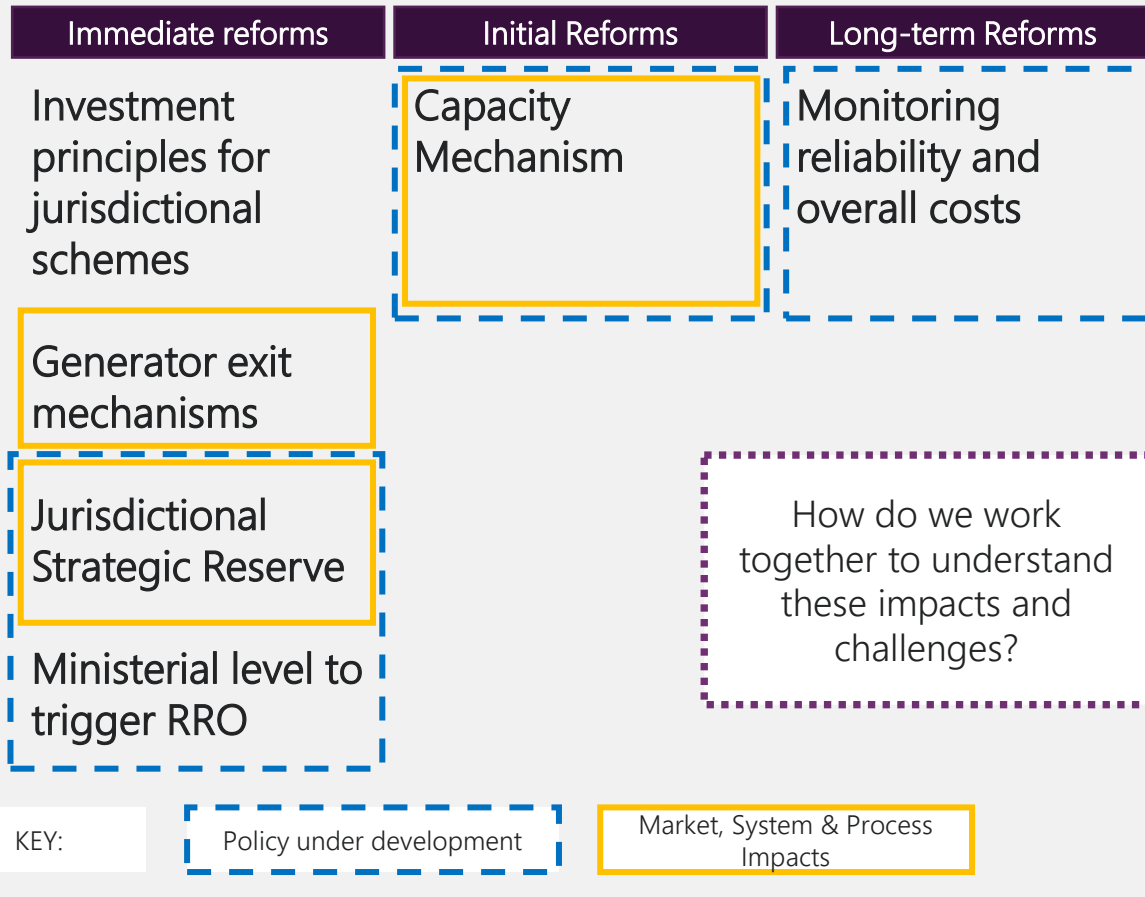
COAG Energy Council tasked the ESB to design a long-term, fit for purpose market design for the NEM



Four major reform pathways were put forward

Pathway	Objective	This means
Resource Adequacy Mechanisms and Ageing Thermal Generation Strategies	Facilitate the orderly retirement of the ageing thermal fleet and have sufficient replacement generation in place	We have investment in the right mix of resources (generation, storage and demand response) in place prior to anticipated plant closures, and that plant exit does not cause significant price or reliability shocks to consumers through the transition
Essential System Services, Scheduling & Ahead Mechanisms	Availability of resources that provide essential system services to balance the highly variable dynamics of the changing generation mix, without AEMO intervention. AEMO has the right tools to manage the greater complexity and uncertainty to schedule these resources so they are available when they are needed	We have the resources and services when needed to manage the complexity of dispatch and to deliver a secure supply to customers
Integration of DER and Flexible Demand	Enable the integration of DER and value flexible demand so they can provide services to networks, the wholesale market and other consumers	New opportunities for consumers about how they receive and use energy and are rewarded for doing so flexibly
Transmission and Access	The addition of transmission investments to enable the new generation and market arrangements and that new generation and storage locates and operates in ways that use transmission investment efficiently	We have a network to meet future needs, renewable energy zones, and a targeted set of investments that can deliver the energy transition at lower cost

REFORM PATHWAY



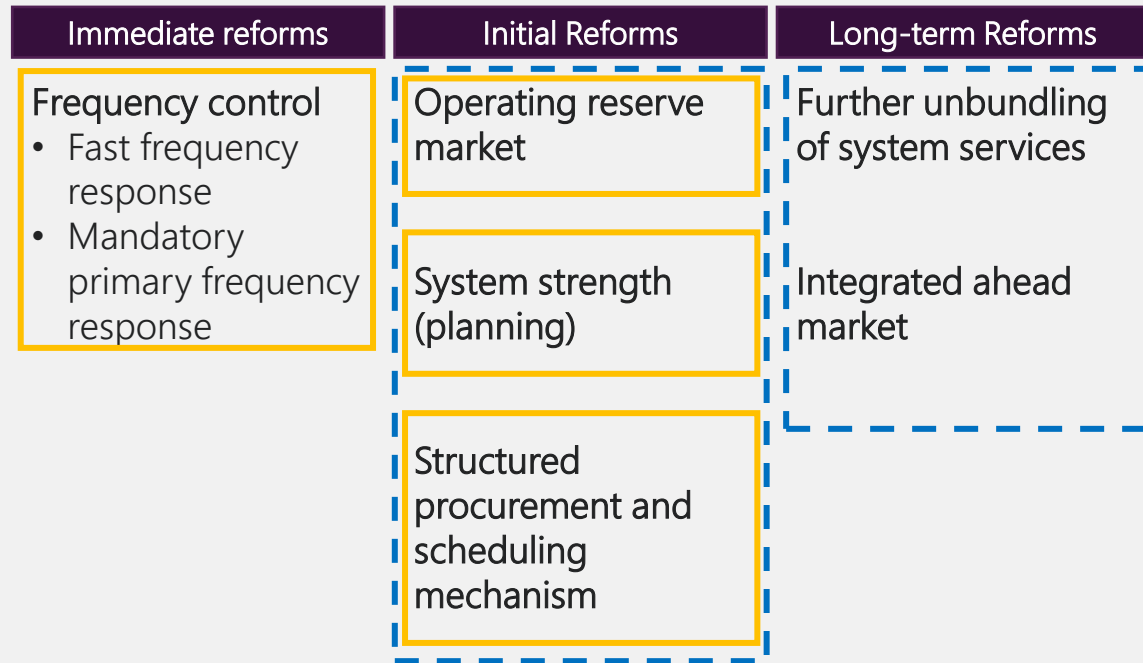
MARKET, SYSTEM & PROCESS IMPACTS

- Updates to MT PASA related systems, processes.
- Potential systems and processes to support capacity market (not currently in scope for roadmap until design is developed).

What are the key impacts to participant systems and processes?

What are the key challenges and risks associated with the delivery of these reforms?

REFORM PATHWAY



KEY:

Policy under development

Market, System & Process Impacts

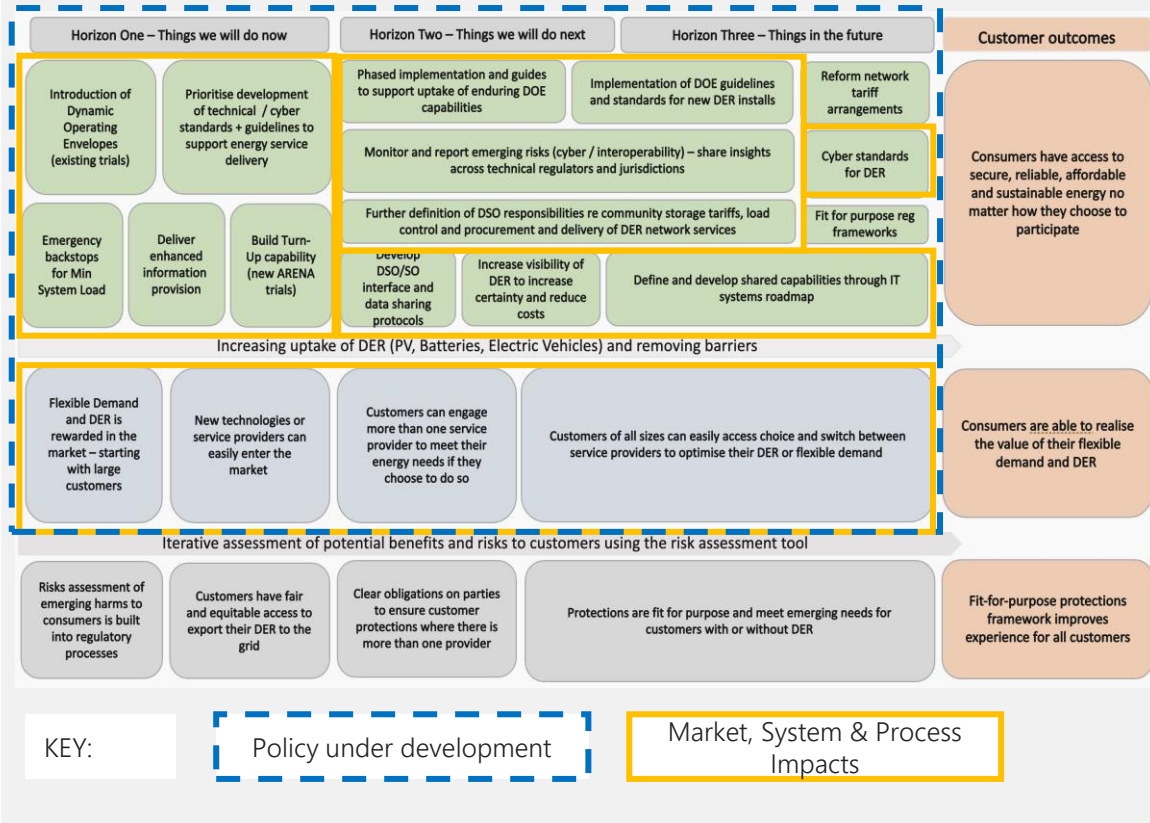
MARKET SYSTEM & PROCESS IMPACTS

- Changes to market and operational systems and processes including:
 - Updates to NEMDE
 - Development of additional tools to schedule resources and configure the power system through operational structured procurement
 - Updates to NEM processes and guidelines

What are the key impacts to participant systems and processes?

What are the key challenges and risks associated with the delivery of these reforms?

REFORM PATHWAY



MARKET SYSTEM & PROCESS IMPACTS

Reforms mapped to delivery initiatives:

- Integrating Energy Storage Systems (rule change)
- Flexible Trading Arrangements
- Scheduled Lite
- DER Data Exchange and Enhanced Registry Services
- Dynamic Operating Envelopes
- Distribution / Local Services
- Turn-up Services
- DER Operational Integration

What are the key impacts to participant systems and processes?

What are the key challenges and risks associated with the delivery of these reforms?

REFORM PATHWAY

Immediate reforms	Initial Reforms	Long-term Reforms
Dedicated connection assets and system strength rule changes	<div style="border: 2px solid yellow; padding: 5px;">Transmission Access Reform</div> Transmission Planning and Investment Review	<div style="border: 2px dashed blue; padding: 5px;">Fully locational marginal pricing and financial transmission rights model</div>
Interim REZ framework	Enhanced congestion information	

KEY:

Policy under development

Market, System & Process Impacts

MARKET SYSTEM & PROCESS IMPACTS

- Implementation of congestion management model subject to final design. Primary impacts include dispatch, constraint library and settlements
- Implementation of a rules based REZ coordination, connections and access process subject to final design. Primary impacts include connections and grid planning and forecasting.

What are the key impacts to participant systems and processes?

What are the key challenges and risks associated with the delivery of these reforms?

REFORM PATHWAY

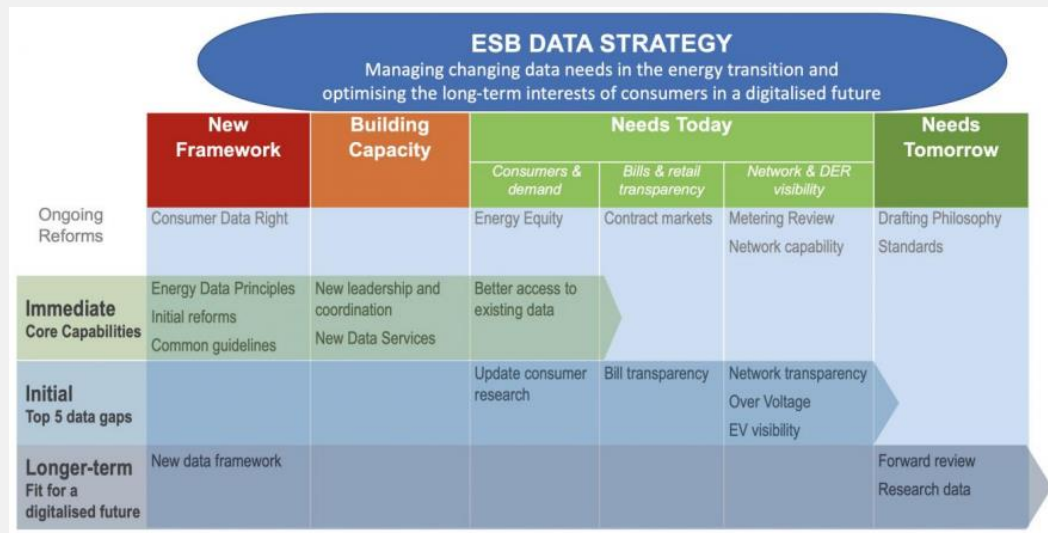
Immediate reforms	Initial Reforms	Long-term Reforms
<p>Governance foundation</p> <p>Regulatory barriers to sharing data</p>	<p>Design, cost and implement priority data recommendations</p>	<p>Design new fit for purpose legislative framework adaptable in rapidly evolving digitalised future</p> <p>Ongoing reassessment of data priorities across reforms</p>

MARKET SYSTEM & PROCESS IMPACTS

- Development of new and/or changes to existing systems, processes and templates
- Increased access to data – particularly in DER and network space

What are the key impacts to participant systems and processes?

What are the key challenges and risks associated with the delivery of these reforms?



KEY:

Policy under development

Market, System & Process Impacts

Impact assessment – Technology Heatmap

- Some systems are heavily impacted by multiple reforms. The most heavily impacted functions are registration, settlements and system operation tools and interfaces. While a smaller number of reform initiatives impact the retail functions, those reforms have a more significant impact on IT systems.
- Most of the initiatives require changes to settlements. These changes may require coordination and need to be sequenced and bundled for efficient delivery. The uplift to settlement systems from the implementation of five- minute settlement mean that the underlying system architecture can be readily leveraged.
- The potential changes required to systems and processes are assessed here by covering the needs across all reform initiatives and their impact on a particular functional area. The lifecycle state of the underlying systems must also be considered so that investments are not made to an IT system that is not fit-for-purpose for implementation at a later change.

Reform pathway	Reform initiative	Wholesale							Retail	DER
		Registration	Offers	Dispatch	PASA	Settlements Billing & Prudentials	Causar Pays	System operations		
Resource adequacy and exit mechanisms	Increased MTPASA information	Green	Green	Green	Yellow	Green	Green	Green	Green	Green
Essential system services and scheduling	Ramping/operating reserves	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Green
	Primary Frequency Control	Yellow	Green	Green	Green	Yellow	Orange	Green	Green	Green
	Fast Frequency Control	Yellow	Yellow	Yellow	Green	Yellow	Green	Yellow	Green	Green
	Operational scheduling mechanisms for security (UCS + SSM)	Green	Green	Green	Green	Yellow	Green	Red	Green	Green
Integrating DER and flexible demand	IESS	Yellow	Green	Orange	Green	Orange	Green	Yellow	Red	Yellow
	Flexible trading arrangements	Green	Green	Green	Green	Green	Green	Green	Orange	Green
	Scheduled lite	Green	Orange	Yellow	Green	Orange	Yellow	Green	Green	Green
	Dynamic operating envelopes	Green	Green	Green	Green	Green	Green	Green	Green	Yellow
	Turn up services	Yellow	Green	Green	Green	Yellow	Green	Green	Green	Green
	DER data exchange and registry services	Orange	Green	Green	Green	Green	Green	Green	Green	Green
	DER system operator integration	Green	Green	Green	Green	Green	Green	Orange	Green	Green
	Transmission and access	Yellow	Green	Yellow	Green	Yellow	Green	Yellow	Green	Yellow

- AEMO has identified initiatives that are required to be delivered ahead of the P2025 reform program to provide a functional or technological dependency.
- Pre-requisites were identified across digital, registration, operational and dispatch streams.

Example of pre-requisite and P2025 dependencies



4. NEM2025 Regulatory & IT Implementation Roadmap

Roadmap Format:

- Build on the format proposed to the existing Regulatory Implementation Roadmap* (published since May 2020) – amend where appropriate to meet the needs
- A simplified view – to ensure too much detail does not distract from the overall perspective
- Organised by ESB workstream – to support targeted discussion and managing complexity
- Certainty of reform and go-live status identified; show confirmed vs open implementation timelines. Noting we can inform appropriate timing and prioritization to optimize delivery.
- Supporting artefacts: Initiative Scoping, Dependencies, Market Systems Application Architecture, Impact Assessments

* Sample included in Appendix

Implementation initiatives:

- NEM2025 IT/business process implementation focused
- Each regulatory initiative listed that requires implementation effort
- Different development stages identified
 - Policy development / market design
 - Rule change development
 - Procedure / guideline development
 - Implementation (IT systems, processes implementation and engineering implementation)
- Include pre-requisite initiatives
- Optimise delivery options across AEMO and industry.

Assumptions:

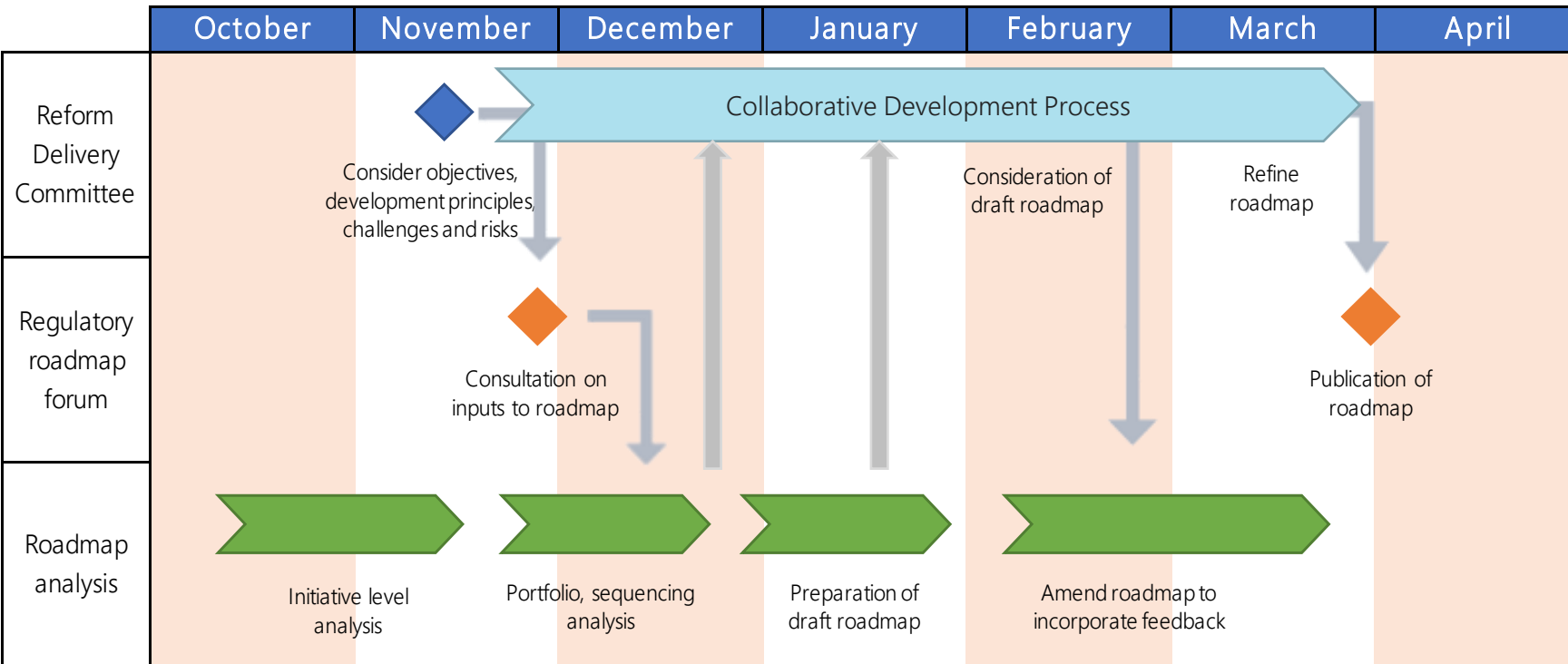
- Only immediate and initial reforms proposed in each workstream were considered.
- The scope and design of the proposed reforms were assumed to be as set out in the final ESB recommendations and are subject to final rules and detailed design and specification.

Roadmap Development Principles – for discussion:

- NEM2025 regulatory changes delivered efficiently
 - Timely and cost effective
 - Prioritised, bundled, sequenced
 - Duplicative processes avoided
 - Regulatory and implementation change co-ordinated
 - Delivery program risk managed
- Long-term reform and evolution to inform design choices
 - Consider industry pain points, strategic opportunities
 - Lower transaction costs, reduce barriers to entry, alignment with NEO
- Understand pathways and choices, transparent process

5. Approach and Forward Plan

- Extensive scope of reforms will require major change to market and participant systems
- Pre-requisite and strategic opportunities will need to be understood and factored in
- AEMO needs to consider life cycle upgrades (where applicable) for market systems
- Dependencies will be critical for sequencing and efficiency
- Different pathways/options likely to exist
 - Depending on bundling/sequencing and pre-requisites/strategic opportunities
 - Different costs and benefits
 - Different delivery timeframes and risk profile
 - May include trigger points/checkpoints
- Target is to have a solid first draft Roadmap by March 2022
- AEMO's objective is a collaborative approach to identifying and understanding the pathways and implications – as opposed to a consultative approach



Collaborative Process

- Complexity of implementation will require time investment from Committee
- Quarterly or monthly meetings unlikely to deliver collaborative outcome
- Workshop based approach preferable? E.g.
 - Workshop 1: RAM and T&A
 - Workshop 2: ESS
 - Workshop 3: DER
- Further iteration likely required
- Options:
 - Single-day intensive initial workshop
 - Schedule individual workshops
- Workshop participants to be confirmed – Committee members or nominations

Public Process

- Reform Delivery Committee is a representative but selective process
- Suggest existing Regulatory Roadmap forum used to introduce approach and seek feedback at a late November forum
- Suggest same forum can be used to publish and explain Roadmap

6. Next Steps

Did we achieve today's objectives?

- Introduce the Reform Delivery Committee
- Outline AEMO's objectives for the Committee, and receive feedback from Committee members on the role
- Set out the background and implementation activities required – to set the scope
- Discuss the roadmap and identify key principles
- Propose an approach and agree with the Committee the process to best develop the Roadmap

Potential Next Steps

- Revise TOR, approach, principles, etc based on Committee input
- Schedule Reform Delivery Committee workshops/sessions as agreed
- Schedule Regulatory Roadmap Forum (forum #6 - 24 Nov proposed)
 - Current regulatory initiatives – to continue from previous 5 roadmap forums
 - ESB reform initiatives

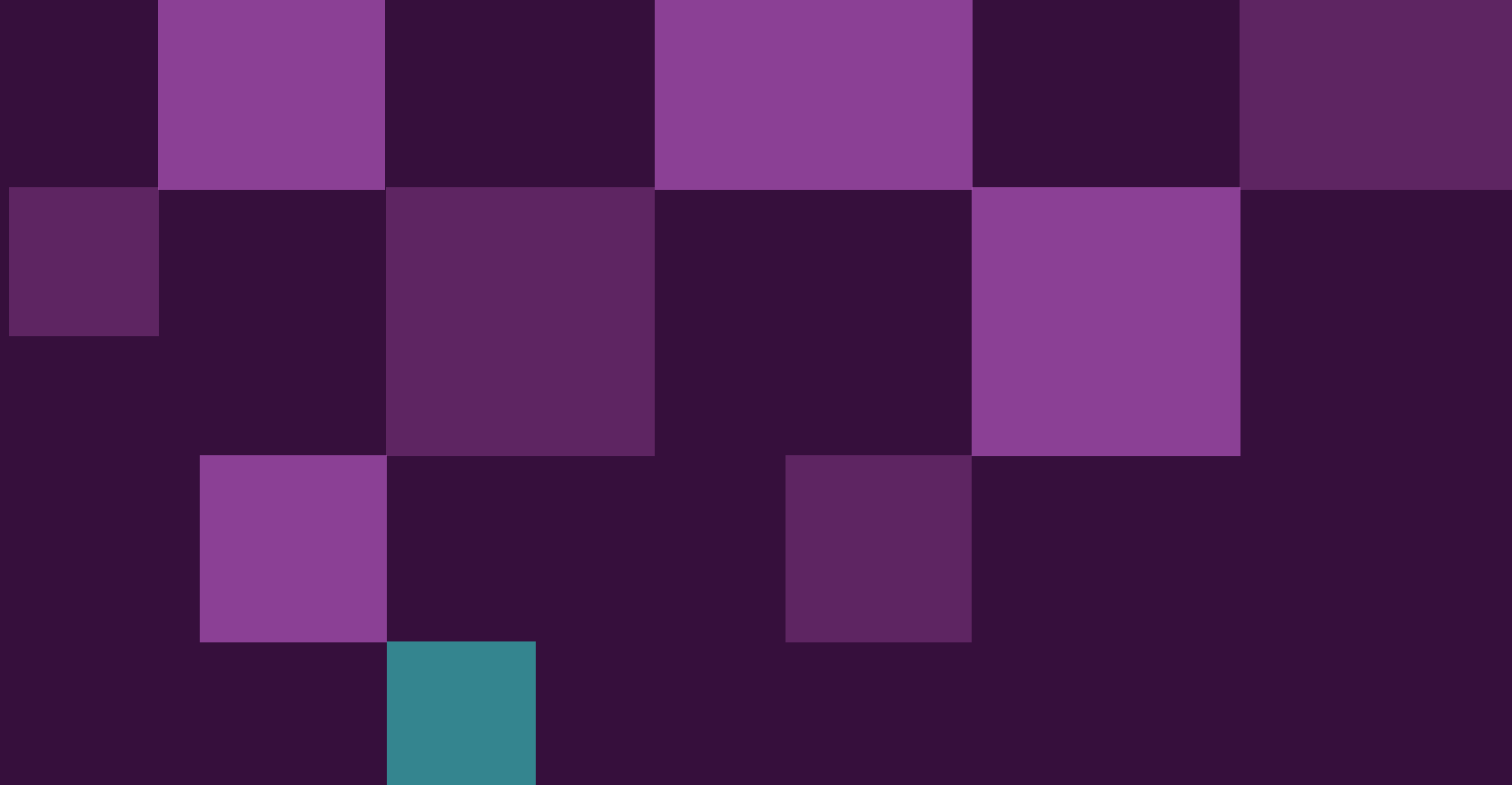
Appendix

Potential Roadmap Format (v.5)

National Energy Market and Gas Markets Regulatory Implementation Roadmap

Key:						
■ Policy development/market design	■ Rules development	■ Procedure/guideline development	■ Implementation - IT systems, processes	■ Indicative IT implementation	■ Engineering Implementation	
● Committed Go-Live Date	▲ Proposed Go-Live	■ Indicative Go-Live	◆ Estimated Go-Live	+ Updated for version 5		

Impacted Industry Sector	Reform Status	Reform Initiative	2020				2021				2022				2023				2024				2025			
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
INITIATIVES WITH IT SYSTEM IMPLEMENTATION IMPACTS																										
Industry-wide	Committed	Five Minute Settlement (5MS)	+ ■ SMS (IT platform) ● AEMC final determination - go-live 1 Oct 2021																							
Retail	Committed	Reducing Customer Switching Times	■ Updated to align with 5MS go-live - 1 Oct 2021																							
Industry-wide	Committed	Wholesale Demand Response Mechanism	■ AEMC final determination - go live 24 Oct 2021																							
Retail	Committed	Electricity B2B changes	■ v3.5 and v3.6 - 10 Nov 2021																							
Gas	Committed	Gas B2B changes	■ IN003/20 (business enhancements, schema uplift) - 29 Nov 2021																							
Industry-wide	Committed	Global Settlements	+ ■ GS soft start ● AEMC final determination - go-live 1 May 2022																							
Retail	Committed	Metering Coordinator Planned Interruptions (MCPI)	■ AEMO notice to reschedule to 1 May 2022 , bundled with MSDR																							
Retail	Committed	MSATS Standing Data Review (MSDR)	■ v1 ● v2 (small) ● v1 AEMO consulted to reschedule to 1 May 2022 , aligned with MCPI implementation																							
Retail	In progress	Regulatory Arrangements for Stand Alone Power Systems (SAPS - Priority 1)	+ ■ AEMC recommended implementation 12 months after law and rule changes made																							
Retail	Proposed - Review	Energy Consumer Data Right	■ Implementation dictated by Treasury timings, assumed to be Q3 2022																							
Retail	In progress	Updating the Regulatory Frameworks for Embedded Networks	■ Implementation based on understanding of current scope																							
Retail	Proposed - Review	Review of Regulatory Framework for Metering Services	■ (if required) ◆ IT implementation likely but not yet clear, dependent on review outcomes																							



For more information
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