

Regulatory Implementation Roadmap (draft v7) & NEM2025 Implementation Roadmap

Stakeholder Forum
11 May 2022



We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

We pay respect to their Elders past, present and emerging.

Agenda

1. Welcome and background
2. Objectives of this forum
3. Regulatory Implementation Roadmap - draft version 7
4. Detailed implementation schedule and schema changes
5. NEM2025 Implementation Roadmap
 - Regulatory-led pathway
 - Strategic pathway
6. Immediate Next Steps
7. Feedback and questions

Welcome

- Welcome to the stakeholder forum on the Regulatory Implementation Roadmap Industry Forum (version 7) and the NEM2025 Implementation Roadmap.
- We look forward to your feedback and questions.
 - Participants are able provide comments and ask questions by using the audio and chat function.
 - We will pause at specific times to answer questions.
 - Stakeholders will also be invited to provide written feedback.
 - This forum will be recorded.

Background

- In April 2020, the market bodies undertook a process to prioritise the regulatory program, in response to COVID-19, and in recognition of the current regulatory burden.
- AEMO developed a regulatory implementation roadmap focused on regulatory initiatives with material IT system implementation impacts and other key/strategic reforms.
- AEMO committed to maintaining the roadmap to support ongoing transparency, prioritisation and program management by all stakeholders. AEMO published version 6 of the roadmap on 22 December 2021.
- <https://aemo.com.au/en/initiatives/major-programs/regulatory-implementation-roadmap>
- The Energy Security Board (ESB) provided final advice on post 2025 reforms in July 2021. National Cabinet approved ESB's recommendations on 29 Oct 2021.
- One of the main enablers for the reforms is the development of IT systems and business processes
- AEMO established the Reform Delivery Committee (RDC) to inform the development of the NEM2025 implementation roadmap to navigate the breadth of the ESB reforms, de-risk delivery and inform implementation timings

Objectives of this forum

- Present and seek stakeholder feedback on:
 - Regulatory implementation roadmap (draft version 7)
 - NEM2025 implementation roadmap:
 - Regulatory-led pathway
 - Strategic pathway
- NEM2025 implementation roadmap is a standalone roadmap during this initial development phase. In finalising the regulatory implementation roadmap (version 7) and the NEM implementation roadmap, AEMO plans to integrate both into a single roadmap.
- The update to the regulatory implementation roadmap (version 7) does not include the ESB initiatives as these will be canvassed by NEM2025 implementation roadmap in the latter part of the forum.

Regulatory Implementation Roadmap

Draft Version 7

Regulatory Roadmap Updates: Draft V7

Committed regulatory initiatives with IT system impacts

- Global Settlements (GS), Metering Coordinator Planned Interruptions (MCPI) and MSATS Standing Data Review (MSDR)
 - Coordinated deployment through May 2022 Readiness Working Group
 - GS, MCPI and MSDR (r42 Schema) commenced on 1 May 2022
 - Project support arrangements in place until end of May 2022
 - MSDR Procedural go-live scheduled for 7 November 2022
 - System delivery to be coordinated through the 2022 Implementation Forum
 - Transitional activities to be considered by the MSDR Focus Group
- Electricity B2B changes v3.7 and v3.8
 - V3.7
 - Electricity B2B changes v3.7 scheduled for 7 Nov 2022 go-live to address coincident service orders, person names and unauthorized connections
 - Coordinated through the Information Exchange Committee (IEC) and the B2B Working Group
 - V3.8
 - IEC currently consulting on changes to the Electricity B2B Procedures and Guide to improve re-energization management by an incoming retailer and B2B communications for shared fuse arrangements to support MCPI
 - Final report expected early July 2022 and indicative go-live date of May 2023

Regulatory Roadmap Updates: Draft V7

Committed regulatory initiatives with IT system impacts

- Standalone Power Systems
 - SA Energy Minister made final rule in February 2022
 - New registered participant category (SAPS Resource Provider) and classification requirements commence 1 August 2022 and SAPS go-live is 30 May 2023
 - AEMO currently consulting on the preferred approach to identifying a SAPS NMI in MSATS
- Consumer Data Rights (Energy)
 - CDR will be implemented in 4 tranches:
 - Tranche 1: Applies to 3 largest retailers for non-complex consumer data requests - 15 November 2022
 - Tranche 2: Applies to 3 largest retailers for complex consumer data requests - 15 May 2023
 - Tranche 3: Applies to large retailers for non-complex consumer data requests – 1 November 2023
 - Tranche 4: Applies to large retailers for complex consumer data requests – 1 May 2024.
 - AEMO to deploy Application Programming Interfaces (APIs) to facilitate data transfers by 15 November 2022
 - On 26 April 2022 AEMO commenced its CDR (MSATS) consultation:
 - The consultation proposes the addition of a new field into MSATS, “Last Consumer Change Date”
 - “Last Consumer Change Date” field will enable the current retailer to request data for periods prior to them becoming the FRMP, eliminating the need for an ADR to otherwise contact multiple Retailers/FRMPs to obtain the information required.
 - If a schema change is required, this is currently proposed for May 2023.

Regulatory Roadmap Updates: Draft V7

Committed regulatory initiatives with IT system impacts

- ST PASA
 - AEMC final rule made on 5 May 2022 provides for a 31 July 2025 go-live. This aligns with AEMO implementation plans.
 - AEMO is conducting 5 industry workshops between April and August 2022 to discuss technical concepts, ahead of formal consultation on the ST PASA procedure and guidelines.
- Enhancing Operational Resilience to Indistinct Events
 - AEMC made final rule on 3 March 2022 with commencement date of 9 March 2023
 - AEMO is implementing changes. No impact for industry.
- Declared Wholesale Gas Market (DWGM) Enhancements
 - Both DWGM simpler wholesale price and DWGM improvement to Authorised Maximum Daily Quantity (AMDQ) regime is on track for 1 January 2023 go-live.

Regulatory Roadmap Updates: Draft V7

In progress regulatory initiatives with IT system impacts

- Measures to Improve Transparency in the Gas Market
 - National Gas (South Australia) (Market Transparency) Amendment Bill will need to be re-introduced to SA Parliament. AEMO is well progressed in developing the back-end system changes that are expected to be enacted 6 months after the passage of legislation.
 - In anticipation of the measures to improve transparency in gas markets, AEMO is implementing a number of changes to the east coast Gas Bulletin Board including new interactive charts, changes to the way data is accessed and navigation improvements
- DWGM Distribution Connected Facilities
 - On 31 March 2022 AEMC made a draft determination and rule to enable distribution connected facilities to participate in the Victorian DWGM. The AEMC proposed go-live date of 1 October 2023, however AEMO's initial assessment is that a two-year implementation period is required. AEMO is currently carrying out further implementation analysis to support the AEMC's final determination.
 - Significant system and procedural changes are needed.

Regulatory Roadmap Updates: Draft V7

Committed and in progress regulatory initiatives with IT system impacts



Key:	
 Policy development/market design	 Rules development
 Implementation - IT systems, processes	 Procedure/guideline development
 Committed Go-Live Date	 AEMO preferred Implementation
 Proposed Go-Live	 Engineering Implementation
 Indicative Go-Live	 Estimated Go-Live
 + Updated for version 7	

Impacted Industry Sector	Reform Status	Reform Initiative	2021			2022				2023				2024				2025				2026																																
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3																													
INITIATIVES WITH IT SYSTEM IMPLEMENTATION IMPACTS (excluding ESB initiatives)																																																						
Industry-wide	Committed	Global Settlements	Implementation - IT systems, processes			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			GS soft start																							GS (extern		AEMC final determination - go-live 1 May 2022																										
Retail	Committed	Metering Coordinator Planned Interruptions (MCPI)	Implementation - IT systems, processes			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			AEMO notice to reschedule to 1 May 2022, bundled with MSDR																																																			
Retail	Committed	MSATS Standing Data Review (MSDR)	Implementation - IT systems, processes			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			v1																							v2		v1 MCPI and schema for MSDR go-live 1 May 2022 and v2 majority of MSDR go-live 7 Nov 2022																										
Retail	Committed	Electricity B2B changes v3.7	Procedure/guideline development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			v3.7 B2B changes go-live 7 Nov 2022																																																			
Retail	Committed	Energy Consumer Data Right Rules	Rules development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			T1																							T2		T3		T4		CDR go-live has 4 tranches - 15 Nov 2022, 15 May 2023, 1 Nov 2023 and 1 May 2024																						
Retail	In progress	Electricity B2B changes v3.8	Procedure/guideline development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			v 3.8 B2B changes - indicative go-live May 2023																																																			
Retail	Committed	Regulatory Arrangements for Stand Alone Power Systems (SAPS - Priority 1)	Rules development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			SA Energy Minister's final rule - go-live 30 May 2023																																																			
Retail	In progress	Energy Consumer Data Right (National Electricity Law and National Electricity Rules)	Rules development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			Indicative only, subject to SA Parliament and Ministerial processes																																																			
Retail	Proposed - Review	Review of Regulatory Framework for Metering Services	Policy development/market design			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			Indicative only, dependent on review outcomes																																																			
Wholesale	Committed	ST PASA - Replacement project and methodology update	Rules development			Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes				Implementation - IT systems, processes																																
			AEMC final rule - go-live is 31 July 2025																																																			

Regulatory Roadmap Updates: Draft V7

Regulatory initiatives with limited IT system impacts and gas initiatives



Key:			
■ Policy development/market design	■ Rules development	■ Procedure/guideline development	■ AEMO preferred Implementation
■ 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 7

Impacted Industry Sector	Reform Status	Reform Initiative		2021				2022				2023				2024				Q1
				Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
INITIATIVES WITH LIMITED IT SYSTEM IMPLEMENTATION IMPACTS																				
Network	Proposed - Review	Transmission Planning and Investment Review																<i>Subject to review process - stages 2 and 3 expected to be completed in Sept 2022 and Dec 2022</i>		
Network	In progress	Material change in network infrastructure project costs	+															<i>Subject to rule change process</i>		
Wholesale	Committed	Generator Registrations and Connections																		
Network	Committed	Access, Pricing and Incentive Arrangements for Distributed Energy Resources																		
Industry-wide	Committed	Enhancing Operational Resilience to Indistinct Events	+															<i>AEMC final rule - go-live 9 Mar 2023</i>		
Networks	Committed	Governance of DER Technical Standards	+															<i>No final rule made</i>		
GAS INITIATIVES																				
Gas	Committed	DWGM simpler wholesale price																<i>Implemented as a single AEMO project (DWGM Enhancements) - AEMC final rule - go-live 1 Jan 2023</i>		
Gas	Committed	DWGM improvement to AMDQ regime																		
Gas	In progress	Measures to Improve Transparency in the Gas Market																<i>Indicative only, subject to passage of legislation</i>		
Gas	Proposed - Review	Extending the Regulatory Framework to Hydrogen and Renewable Gases	+															<i>AEMC Review expected to be completed Sep 2022, Energy Ministers to consider in Nov 2022</i>		
Gas	In progress	DWGM Distribution Connected Facilities	+															<i>AEMC draft rule - go-live 1 Oct 2023</i>		
INITIATIVES WITH LIMITED CERTAINTY																				
Retail	In progress	Updating the Regulatory Frameworks for Embedded Networks																<i>Assumes rules development is re-initiated</i>		

Detailed Implementation Schedule

Draft Version 7

Detailed Implementation Schedule

Draft Version 7

- Detailed implementation schedule updated to provide a more granular view of key phases and milestones for committed NEM and gas initiatives commencing during 2022 to mid-2023 (where possible):
- Changes since version 6 include:
 - Electricity B2B changes: inclusion of B2B v3.8 with indicative go-live of May 2023
 - Energy Consumer Data Right: inclusion of schema change in May 2023 (if required)
 - DWGM Enhancements: flagged that second pre-production industry test (late Sept to late Oct 2023) is to be confirmed. At this stage, AEMO considers it is unlikely to be required.
 - Standalone Power Systems: included on schedule, schema change may be required in May 2023
 - Integrating Energy Storage Systems: baseline release go-live of 31 March 2023 included on schedule

Regulatory Roadmap Updates: Draft V7

Detailed Implementation Schedule



Key:

Pre-Production Test

Market Trial

● Production Date

Schema Change

■ Technical Specifications

◆ Checkpoint (Production Readiness)

Data Model release

Reform Initiative	2022											
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	
Global Settlements		GS Market Trial: proposed timer	● Global Settlements 1/5									
Electricity B2B changes (v3.7 and 3.8)									● B2B v3.7 Go-Live 7/11			
MSATS Standing Data Review (MSDR and MCPI)		Pre-Production Industry Test	□ Schema change R42 ● MCPI in MSATS and schema released 1/5					Pre-production ind test	● New, amended and deprecated fields for MSDR 7/11			
DWGM Enhancements				Pre-Production Industry Test	● Issue Auction Notice			TBC - Pre-Prod Industry Test	● Markets Systems Deployment (dormant)			● Go Live 1/1/23
Energy Consumer Data Right					Pre-Production Available				● CDR Tranche 1 Go-Live 15/11/22			
Standalone Power Systems												
Integrating Energy Storage Systems												

Regulatory Roadmap Updates: Draft V7

Detailed Implementation Schedule



Key:

- Pre-Production Test
- Market Trial
- Production Date
- Schema Change
- Technical Specifications
- ◆ Checkpoint (Production Readiness)
- Data Model release

Reform Initiative	2023									
	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Global Settlements										
Electricity B2B changes (v3.7 and 3.8)			● B2B v3.7 Go-Live 7/11							● B2B v3.8 Go-Live <input type="checkbox"/> Schema change
MSATS Standing Data Review (MSDR and MCPI)		Pre-production ind test	● New, amended and deprecated fields for MSDR 7/11							
DWGM Enhancements		TBC - Pre-Prod Industry Test	● Markets Systems Deployment (dormant)		● Go Live 1/1/23					
Energy Consumer Data Right			● CDR Tranche 1 Go-Live 15/11/22							● CDR Tranche 2 Go-Live <input type="checkbox"/> if required
Standalone Power Systems										● Go-live 30/5/23 <input type="checkbox"/> if required
Integrating Energy Storage Systems							■ Final tech spec	● Interim Release Go-live 31/3/23		

Notes:
 CDR deployment date will align with MSDR go-live date (7 Nov 2022)
 While this is an ESB initiative, IESS has been included on the schedule given the interim release go-live of 31 March 2023 (introduces FCAS participation for SGAs and aggregate conformance for hybrid systems). Final release commences 3 June 2024.
 IESS final technical specification is for wholesale technical specification only (retail technical specifications will be updated in 2024)

NEM2025 Implementation Roadmap

Session focus

- Background and context to the Roadmap
- The Reform Delivery Committee
- Process for preparing the Roadmap
- Roadmap pathways (options)
- Roadmap example
- Preferred pathway
- Next Steps

Background & Context

- The Energy Security Board (ESB) was tasked by the former Council of Australian Governments Energy Council (COAG EC), to advise on design changes required in the National Electricity Market (NEM) as it transitions from a fleet of largely coal fired generation to more variable renewable generation.
- The ESB provided its final advice to the Energy National Cabinet Reform Committee (National Cabinet) on 27 July 2021 in a manner that sets out a pathway of reforms and a timetable for their implementation, towards the year 2025 and beyond. National Cabinet subsequently approved the Post-2025 reform recommendations on 29 October 2021.
- The ESB divided the work into four interrelated reform pathways; ***Resource Adequacy Mechanisms, Essential System Services, Transmission and Access, and Integrating DER and Flexible Demand.***
- The four pathways are complemented by a ***Data Strategy*** for the NEM
- Work continues on the development of policy and rules (including high-level and detailed designs) for initiatives across all four pathways and the Data Strategy
- One of the main enablers for the Post-2025 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 to Ministers.
- 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.***

Background & Context

*The **NEM2025 Implementation Roadmap** is to establish a basis upon which AEMO, and stakeholders may navigate the breadth of ESB reforms over the coming few years, de-risking delivery, and informing implementation timing.*

It will 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

Why is it required?

- The Post-2025 reform program is significant, let's maximise the chances of industry-wide success and efficient delivery
 - Integrated program rather than piecemeal and fragmented
 - Drive down implementation costs
 - Supports implementation resource planning and mobilisation for all implementation stakeholders
- Transparency on implementation
- Informs implementation timing decisions by market bodies

Roadmap Objectives

- The objectives of the NEM2025 Implementation Roadmap is to set out a program that:
 - Implements reforms in a timely and efficient manner;
 - Co-ordinates regulatory and IT change;
 - Aims to remove costs associated with implementation of individual initiatives; and
 - Provides transparency to stakeholders on the implementation program

Reform Delivery Committee

- In October 2021, AEMO established the Reform Delivery Committee (RDC).
- The purpose of the RDC is to facilitate deep and effective collaboration across the industry in development of the NEM2025 Implementation Roadmap
 - The RDC held their first meeting 10 November 2021
 - Since then, monthly meetings have been conducted in addition to 4 deep-dive workshops
- The RDC is comprised of representatives from:
 - Market bodies – AEMC, AER, ESB
 - Industry participants representing – AEC, ENA and CEC
 - Consumer representatives – ECA, MEUA, EUAA and PIAC

AEMO and the RDC endorsed publication of version 1 of the NEM2025 Implementation Roadmap

ESB Post-2025 Reform Scope

Note: Version 1 of the Roadmap will not include the Capacity Mechanism or Congestion Management Model.

This was agreed with the RDC on the basis these initiatives are still progressing through a high-level design phase at an ESB working group level. They will be included in subsequent versions

Pathway	Description	Initiatives
Resource Adequacy Mechanisms	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	<ul style="list-style-type: none"> • Increased MT PASA Information • <i>Capacity Mechanism</i>
Essential System Services	The resources and services are available to manage the complexity of dispatch and to deliver a secure supply to customers	<ul style="list-style-type: none"> • Fast Frequency Response • Mandatory Primary Frequency Response • Operating Reserve Market • System Strength (Planning)* • Operational Security Mechanism
Transmission & Access	The network meets future needs, renewable energy zones, and there is a targeted set of investments that can deliver the energy transition at lower cost	<ul style="list-style-type: none"> • <i>Congestion Management Model</i>
Integrating DER & Flexible Demand	New opportunities are created for consumers to receive and use energy, and are rewarded for doing so flexibly	<ul style="list-style-type: none"> • Integrating Energy Storage • Flexible Trading Arrangements (Model 2) • Scheduled Lite • Dynamic Operating Envelopes • Distribution Local Network Services • Turn-up Services • DER Data Hub & Registry Services • DER Operational Tools
Data Strategy	A framework is established with new guiding policy principles, build capability, forward planning and adaptability and address priority data gaps	<ul style="list-style-type: none"> • Data Services • EV Charging Standing Data Register • Bill Transparency • Network Transparency

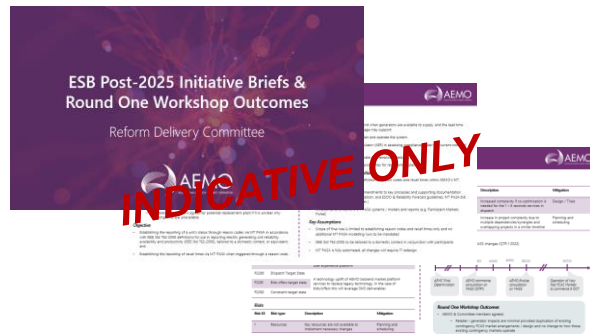
* TNSP led initiative

ESB Post-2025 Reform Scope

- In addition to the Post-2025 reform initiatives, AEMO has identified a subset of initiatives deemed to be prerequisites to implementing the Post-2025 reform initiatives.
- Each initiative represents either a foundational investment in an AEMO legacy system or a more strategic investment as part of AEMO’s wider digital program of work aimed at ensuring AEMO’s IT systems are fit for purpose to meet the need of the transition and beyond.

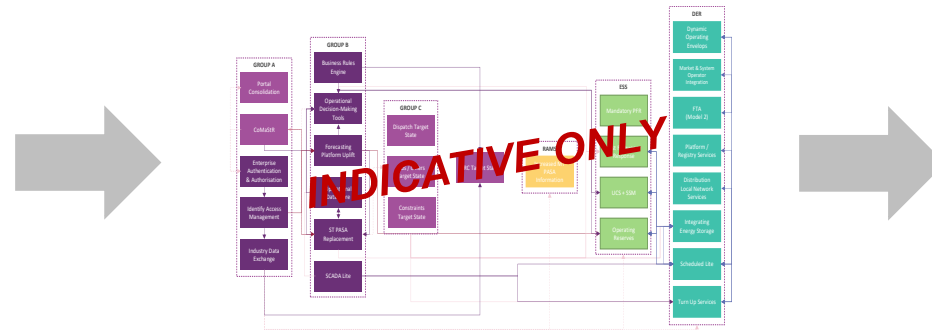
Pathway	Description	Initiatives
AEMO Foundational	Foundational dependency work to deliver an uplift to base capability on which reforms are dependent	<ul style="list-style-type: none"> • Identity Access Management • Industry Data Exchange • Operational Decision Making Tools • Operational Data Store • Business Rules Engine • Forecasting Platform Uplift • [Short Term Projected Assessment of System Adequacy (ST PASA) Replacement] • SCADA Lite
AEMO Strategic	Strategic dependency work to effectively futureproof capabilities and scalability of systems thereby avoiding investment in systems that will become end-of-life shortly after the reforms take effect	<ul style="list-style-type: none"> • Portal Consolidation • CoMaStR • Dispatch Target State • Bids / Offers Target State • Constraints Target State • FRC Target State

In developing the NEM2025 Implementation Roadmap a comprehensive and collaborative process has been undertaken in conjunction with the RDC



Reference Material

- Outline of individual initiatives including problem statement, objectives, scope, assumptions, dependencies and schedule
- Building upon the material shown during Workshop 1 and to be used as reference material for the final roadmap
- Workshop 1 feedback included



Relationship Mapping

- Draft mapping accounting for all ESB and AEMO initiatives
- Relationships range from: Functional, Deadline, Sequencing (Design or Implementation / Operation), Policy, Trials, Technology (Base), Technology (Strategic)
- Provides a basis to identify bundling, sequencing and prioritisation pathways

Roadmap Walkthrough

- Draft roadmap building on the work completed to date
- Identification of project sequencing, bundling, timing including key milestones and alternative pathways
- Opportunity to provide feedback on format, information captured

Supporting material developed over the course of the last few months has been made publicly available [here](#)

We have developed two pathways with a distinct underlying approach

Regulatory Led Pathway	Strategic Pathway
<ul style="list-style-type: none"> • It limits the scope to the bare minimum and does not consider coordination of regulatory and IT changes and therefore shared system impacts and minimising the number of system releases • Strategic enabling technology solutions such as consolidating frameworks and platform uplifts to existing systems are deferred to commence after 2025, once most reforms have been delivered • The reforms will be delivered by building on existing system frameworks and platforms, even those nearing the end of technical life. As these systems need to be replaced, new markets and processes implemented through the reforms will need to be migrated/integrated into future systems at a later point in time • Most reforms are delivered by the end of 2025 	<ul style="list-style-type: none"> • Shared system impacts are considered, the number of scheduled releases are reduced, and the foundational technology architecture and frameworks are established for future anticipated capability needs and removal of industry pain-points • Reforms will be delivered into future state systems to the extent possible • This pathway includes foundational target state technology development related to identity and access, and operational systems and tools. It also includes two large-scale and complex target state implementation initiatives relating to the uplift of the core Dispatch and Short-Term Market Operational (Dispatch, Bids/Offer, Constraints) platforms, and the consolidation of the Retail Markets (all fuels) technology and process framework. • The delivery date for some reforms may extend beyond the assumed regulatory deadline. The roadmap limits the number of these instances and the length of a proposed extension will be subject to as yet undefined rule change effective dates.

The Regulatory Led roadmap delivers the reforms within the set or assumed regulatory effective dates by limiting the scope to the bare minimum

Neither roadmap is yet fully integrated with AEMO's enterprise-wide program of work and constraints

The Pragmatic Strategic roadmap balances implementing reforms within regulatory timeframes where possible and optimising the reform delivery program

The pathways require consideration of various trade-offs



Future reforms such as a Capacity Mechanism or Congestion Management Model will require a reconsideration of the pathways and trade-offs within the Roadmap

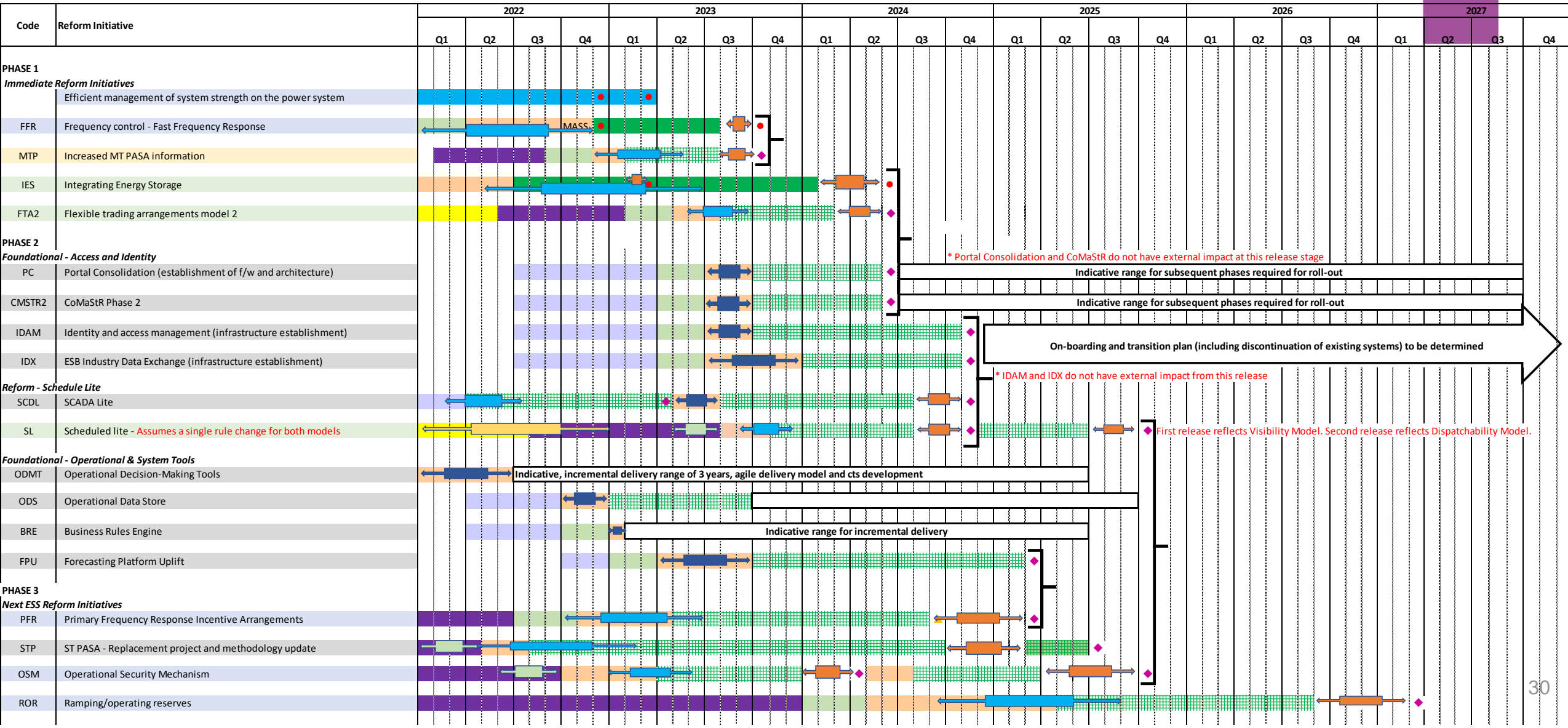
Trade-off	Description
Program Optimisation	<ul style="list-style-type: none"> • Coordination of regulatory and IT change in a timely and efficient manner, and consideration of shared system impacts to bundle reforms to minimise the number of system releases • <i>Example: Collectively adopted pathways provide for optimal grouping, sequencing and prioritisation of AEMO, participant and NEM 2025 initiatives</i>
Regulatory Timelines	<ul style="list-style-type: none"> • Capacity to meet regulatory timeframes • <i>Example: A strategic / foundational pathway would necessitate delay to the implementation of reform initiative in order to establish new foundational systems / processes</i>
Overall Cost Efficiency	<ul style="list-style-type: none"> • Implements reforms in a timely and efficient manner and at least whole-of-system cost • <i>Example: A short term focus may require building upon legacy systems that are nearing their end-of-life and need to be replaced. This may still require transition to a target state at a later date adding costs</i>
Risks	<ul style="list-style-type: none"> • Minimises overall implementation risks • <i>Example: Delay of an individual initiatives over time may create different delivery risks in the future such as the challenges of managing a larger bundle of reforms including resourcing and variations in scope</i>
Scalability	<ul style="list-style-type: none"> • Flexibility to adapt to future changes • <i>Example: The extent to which a pathway delivers target state reforms / initiatives with capabilities beyond those required for 'Day 1'</i>
Participant Investment and Operations	<ul style="list-style-type: none"> • Considers impact on participant investments (timing and scale) required for each delivery pathway as well as impacts on participants day-to-day operations and administration • <i>Example: A regulatory led pathway would maintain existing systems (and pain points) but would require further participant investment to transition to strategic systems over time.</i>

AEMO and RDC preferred pathway

- AEMO and the RDC agreed that both the Regulatory Led and Strategic pathways be released as version 1 of the NEM2025 Implementation Roadmap for stakeholder consideration and feedback
- AEMO and the RDC’s “direction of travel” is to recommend the Strategic Pathway on the basis:
 - Opportunities for overall program optimisation
 - Continued ability to meet regulatory priorities albeit with known potential risks to be managed
 - Opportunities for overall cost efficiency across the wider NEM2025 program and specifically the ability to remove costs associated with implementation of individual initiatives
 - While challenging, opportunities to mitigate overall risk of implementing the NEM2025 provided sufficient upfront planning and collaboration among AEMO, AEMC and market participants
 - Ability to leverage the frameworks for future state systems to drive scalability
 - Potential reduced impact to participant investments and operations over the longer term

This preference is subject to completion of a business case and further consideration against an updated and integrated Regulatory Implementation Roadmap

Roadmap – Strategic Pathway (1)



Roadmap – Strategic Pathway (2)

Code	Reform Initiative	2022				2023				2024				2025				2026				2027			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
PHASE 4																									
Remaining DER Reform Initiatives																									
TU	Turn-up services																								
DOE	Dynamic operating envelopes																								
D-Hub	DER Data Hub and Registry Services																								
DER OT	DER Operational Tools																								
DLNS	Distribution / local network services																								
Foundational Dispatch & FRC Target State																									
DSTM	Dispatch Target State																								
DSTM	Bids/Offers Target State																								
DSTM	Constraints Target State																								
FRC	FRC Target State																								
Data Strategy Reform Initiatives																									
	Data Services																								
	Bill Transparency																								
	Electric Vehicles																								
	Network Visibility																								
	Consumer Research / Metrics																								

Key differences between Strategic & Regulatory Led Pathways

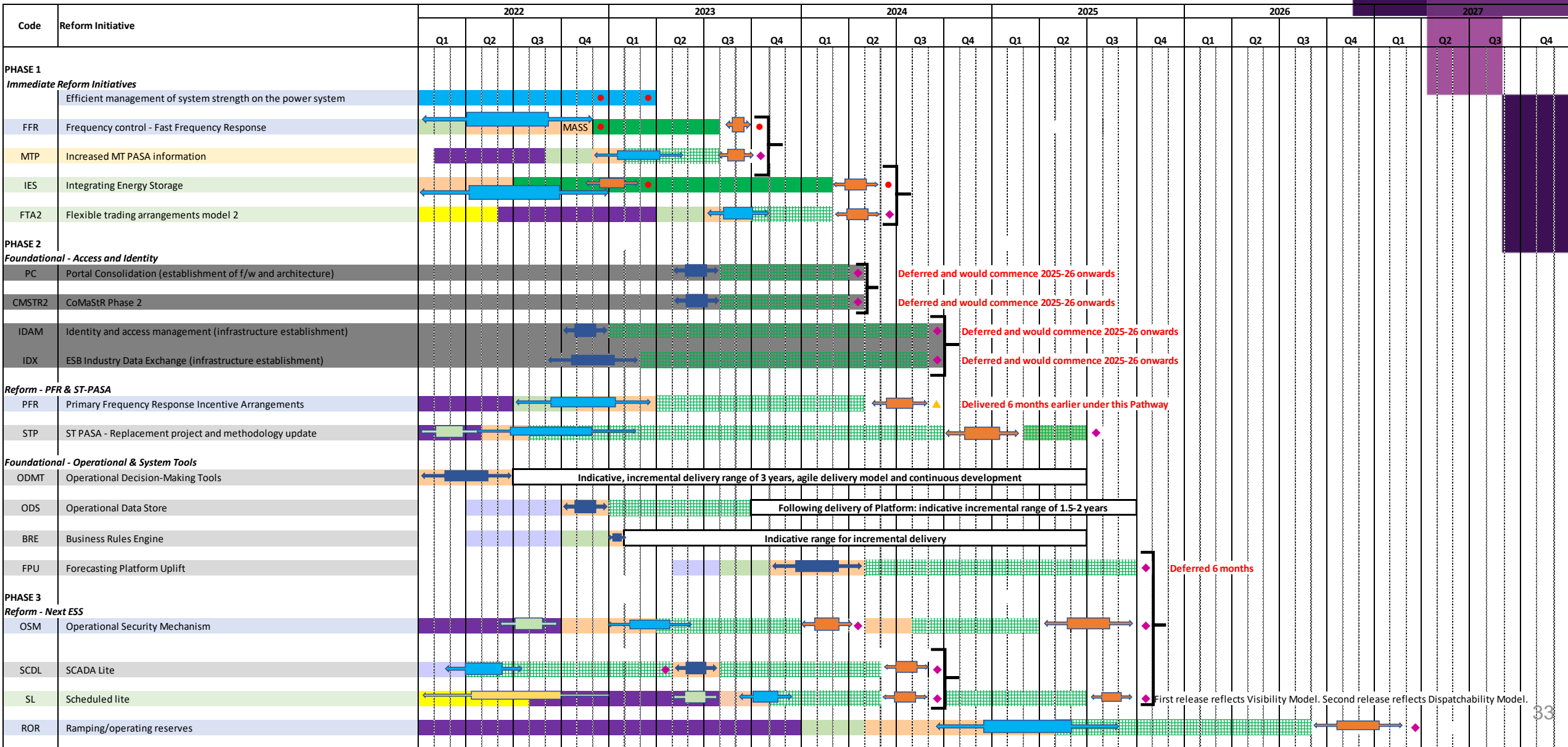
Key Differences

- Under the Regulatory Led approach, the following foundation initiatives are deferred until after 2025
 - Identify Access Management
 - Industry Data Exchange
 - Portal Consolidation
 - CoMaStR
 - FRC Target Start
 - Dispatch Target State
 - Bids/Offers Target State
 - Constraints Target State
- PFR Incentive Arrangements – Delivered 6 months earlier under the Regulatory Led approach - Strategic Mar 25 vs Reg Led Sep 24

Minor Differences

- Forecasting Platform Uplift – Strategic Mar 25 vs Reg Led Oct 25
- Scheduled Lite – Strategic Nov 24 vs Reg Led Sep 24
- SCADA Lite – Strategic Nov 24 vs Reg Led Sep 24

Roadmap - Reg-Led Pathway (1)



Roadmap - Reg-Led Pathway (2)

Code	Reform Initiative	2022				2023				2024				2025				2026				2027								
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					
PHASE 4																														
Remaining DER																														
TU	Turn-up services																									Indicative Range subject to outcomes of ARENA trials				
DOE	Dynamic operating envelopes																									Indicative: DNSP-led, capabilities developed at different times with a range of entry points across Participants				
D-Hub	DER Data Hub and Registry Services																									Indicative Range: Iterative implementation; start simple and continually develop over time as required				
DER OT	DER Operational Tools																									Indicative Range: Start simple and continually develop over time as required				
DLNS	Distribution / local network services																									Indicative Range: Start simple and continually develop over time as required				
Foundational Dispatch & FRC Target State																														
DSTM	Dispatch Target State																									INDICATIVE DEVELOPMENT RANGE OF 2-4 YEARS SUBJECT TO FURTHER ANALYSIS ON SCOPE				Deferre and would commence 2025-26 onwards
DSTM	Bids/Offer Target State																									INDICATIVE DEVELOPMENT RANGE OF 2-4 YEARS SUBJECT TO FURTHER ANALYSIS ON SCOPE				Deferre and would commence 2025-26 onwards
DSTM	Constraints Target State																									INDICATIVE DEVELOPMENT RANGE OF 2-4 YEARS SUBJECT TO FURTHER ANALYSIS ON SCOPE				Deferre and would commence 2025-26 onwards
FRC	FRC Target State																									INDICATIVE DEVELOPMENT TIMEFRAME SUBJECT TO FURTHER ANALYSIS; MULTI-STAGE IMPLEMENTATION LIKELY				Deferre and would commence 2025-26 onwards
Data Strategy																														
	Data Services																									Includes various stages of stakeholder engagement and public consultation, issues paper, draft options paper, and options report and recommendations				
	Bill Transparency																									Includes various stages of stakeholder engagement and public consultation, issues paper, draft options paper, and options report and recommendations				
	Electric Vehicles																									Includes various stages of alignment with DER and DEIP work, current process report, draft options paper, and options report and recommendations				
	Network Visibility																									Includes various stages of public consultation, AER Data Register development, gap analysis and case studies report, draft gap assessment report, recommendations report.				
	Consumer Research / Metrics																									Includes various stages of alignment with Energy Equity Working Group work, review of existing research and metrics, draft metrics and approach report, public consultation, research approach pilot, and ongoing approach re				

Immediate Next Steps

- **NEM2025 Implementation Roadmap Consultation (April – May 2022)**
 - Publication of the NEM2025 Implementation Roadmap and supporting material 27 April 2022
 - Stakeholder feedback sought on grouping, sequencing and prioritisation of the Post-2025 reform and AEMO strategic and foundational initiatives and preferred pathway
 - Stakeholder feedback sought by 20 May
- **Integration of NEM 2025 and Regulatory Implementation Roadmaps (June 2022)**
 - A key request of the RDC in consideration of alternative pathways
 - AEMO's intention is to publish an integrated roadmap moving forward
- **Business Case Assessment (June 2022)**
 - AEMO has engaged EY to help develop a Gate 1 business case that further refines work that has been undertaken to date on the NEM2025 initiatives, and presents a cohesive and robust narrative to support the program
 - This assessment will provide for updated cost estimates of individual initiatives and a whole of life cycle comparison of the alternative pathways presented under Version 1 of the NEM2025 Implementation Roadmap. This assessment is to be supported by a qualitative assessment of the impacts to industry

Feedback and Questions



For more information visit

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