

# Foundation Regulatory Reforms

RCM Implementation challenges & options

TDOWG – 5 November 2020

# Introduction

ETIU, AEMO and Western Power are currently working to complete the design for revised RCM arrangements including the introduction of the Network Access Quantity (NAQ) calculation. The target date for an approved rule set is early December 2020 (incl. RCM/NAQ, Registration and relevant transitional rules).

AEMO has been reviewing the draft Rules as part of overall implementation planning for Reform and believes there is not enough time for AEMO, Western Power and industry to prepare for and run the 2021 RC Cycle to proposed 'standard' milestones principally due to:

- Scale of changes required to WEM Procedures that require adequate consultation
- Development of a robust NAQ calculation model
- Scale of changes required to AEMO's existing systems and processes.
- Change for Market Participants to consider as part of investment planning and processes

These matters are dealt with in greater detail in the Appendix.

This presentation provides information to support TDOWG members' consideration of implementation options – with a decision on approach to be agreed with the Energy Transformation Taskforce at end November.

# Why are options required?

The RCM provides confidence in reliability of supply and a consistent (and significant) revenue stream to investors in generation. It is imperative that the process for assigning capacity credits and NAQs is robust and accurate to meet these objectives. The following requirements highlight the challenges to building robust systems and processes to meet 'standard' certification timeframes.

## Key Certification Milestones



## Implementation Activities

AEMO must undertake further analysis to enable development of WEM Procedures, technical specifications for system build.

AEMO/WP develop/modify and consult on c.10 WEM Procedures – which will support Market Participants understanding of the regime; submission requirements; and obligations.

AEMO/WP to (continue) development of the approach to constraint equation development incl. RCM specific requirements

AEMO procure vendor to both modify existing RCM systems plus build a new network model to enable calculation of NAQ

AEMO is seeking views on any material implementation activities for Market Participants or key dependencies that may need to be considered as part of the assessment of timeline options.

# Assessment criteria and considerations

The following assessment criteria were used to determine the relative risk-benefit of the three options:

1. Investment certainty (e.g. clarity of regime, obligations and outcomes prior to application)
2. Impacts on time available to build/upgrade new facilities from Capacity Credit and NAQ decision to commencement of Capacity Year (e.g. a deferred decision may compress timeframes)
3. Timeliness of incentives/revenue streams for new facility types (e.g. storage and hybrid facilities)
4. Implementation and operational challenges/risks

In addition, AEMO is also keen to highlight the following considerations:

- RCM/NAQ implementation is just one part of large WEM Reform program with substantial other system and process design activity being progressed in parallel
- Other RCM-impacting change including implementation of RCM Pricing reforms; proposed changes to the Relevant Level Methodology (RLM); and proposed Outage changes (e.g. RC\_2014\_03)
- The rules are continuing to evolve through consultation (in particular registration and transitional arrangements) and final positions will have implementation impacts (e.g. scale and nature of WEM Procedure changes)

AEMO is seeking Market Participant's views on the trade-offs and any other key considerations to assist assessment of the implementation options.

# Option 1

## Extended 2021 Cycle incl. Registration, NAQ and RLM

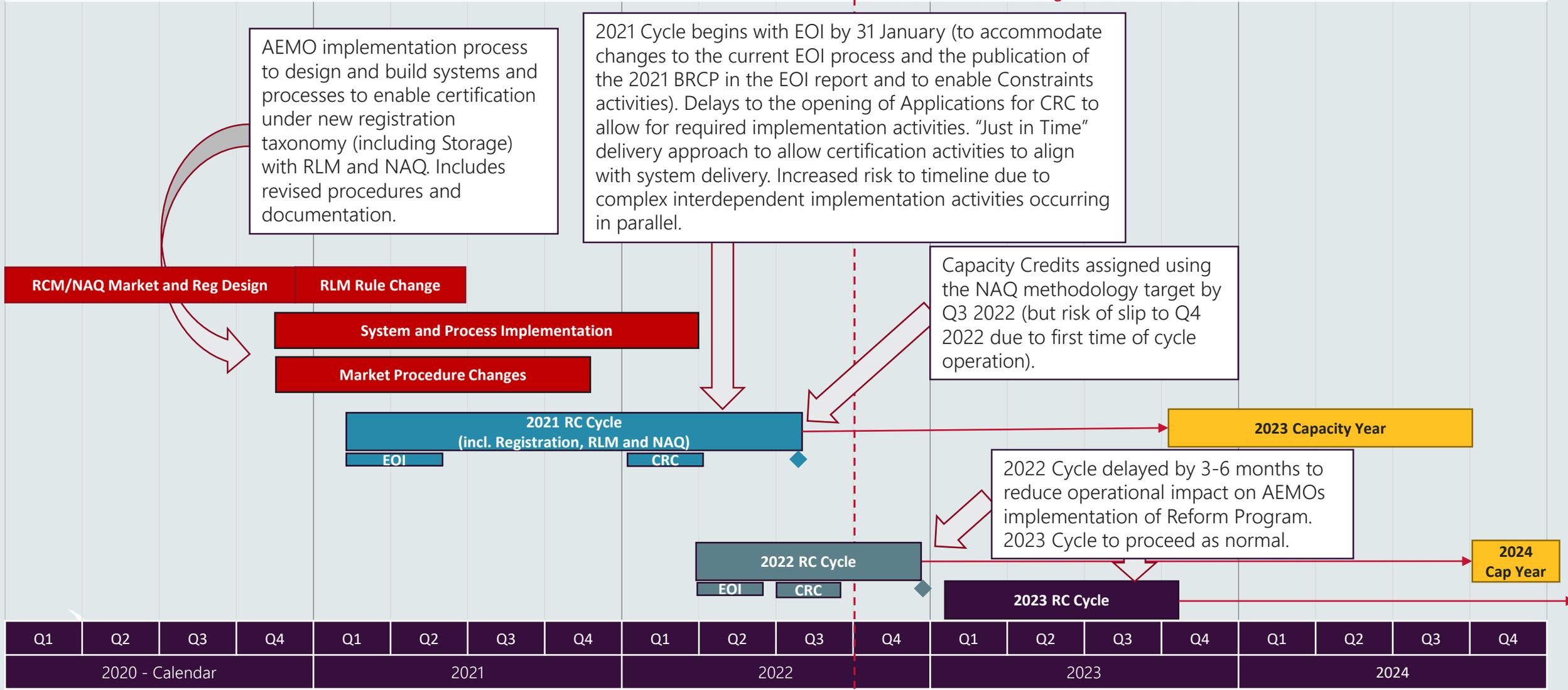
SCED and New Market Arrangements Commence

AEMO implementation process to design and build systems and processes to enable certification under new registration taxonomy (including Storage) with RLM and NAQ. Includes revised procedures and documentation.

2021 Cycle begins with EOI by 31 January (to accommodate changes to the current EOI process and the publication of the 2021 BRCP in the EOI report and to enable Constraints activities). Delays to the opening of Applications for CRC to allow for required implementation activities. "Just in Time" delivery approach to allow certification activities to align with system delivery. Increased risk to timeline due to complex interdependent implementation activities occurring in parallel.

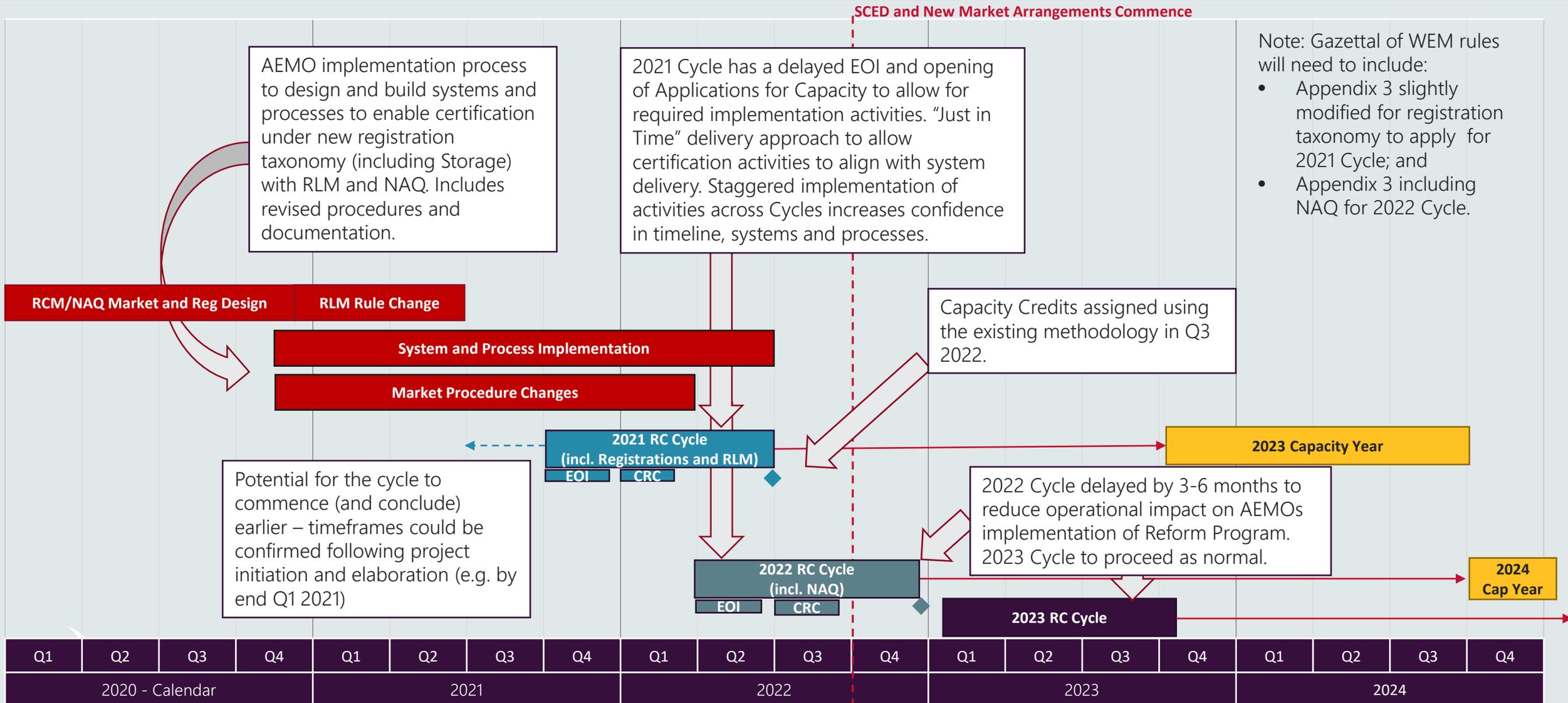
Capacity Credits assigned using the NAQ methodology target by Q3 2022 (but risk of slip to Q4 2022 due to first time of cycle operation).

2022 Cycle delayed by 3-6 months to reduce operational impact on AEMOs implementation of Reform Program. 2023 Cycle to proceed as normal.



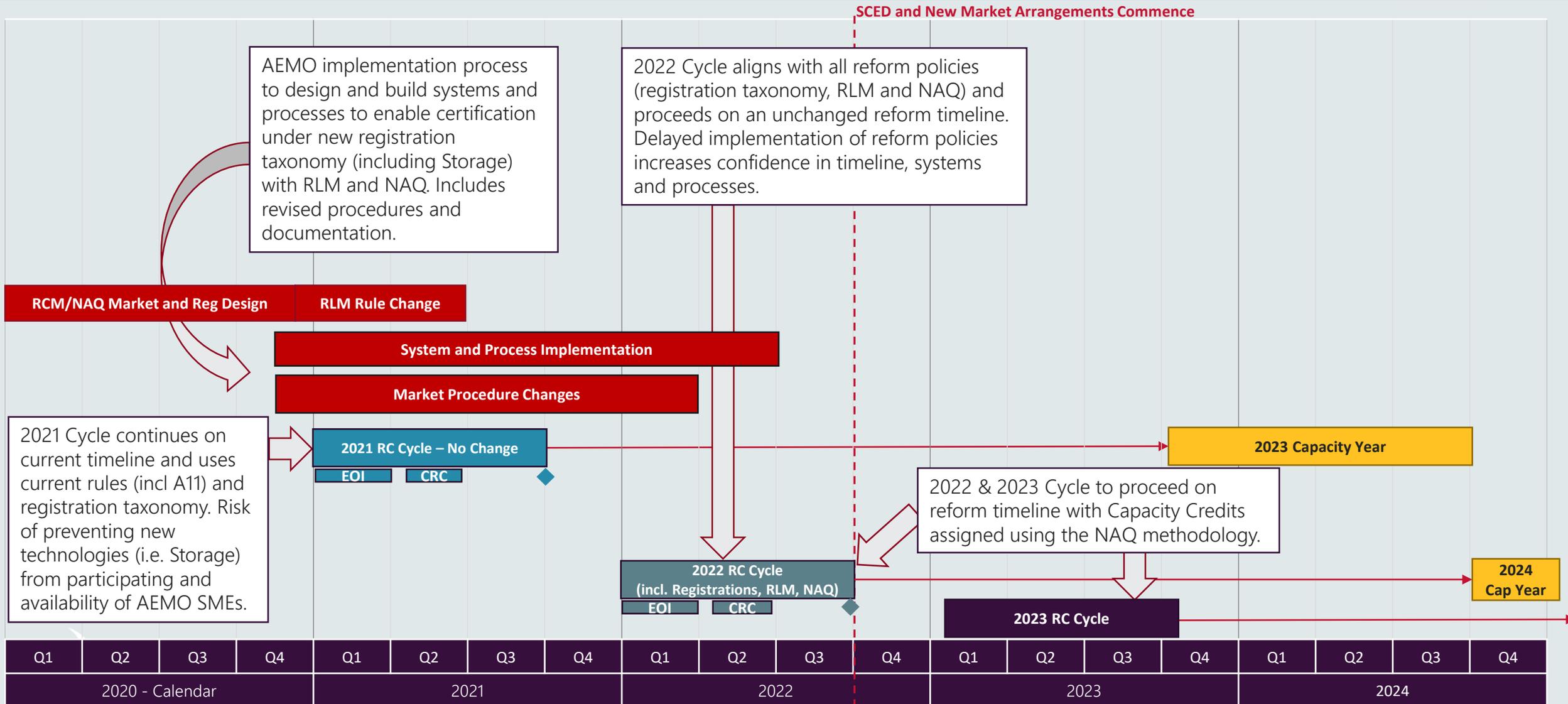
# Option 2

## Staggered Cycles - 2021 Cycle (Reg, RLM); 2022 Cycle (NAQ)



# Option 3

## Retained 2021 Cycle; 2022 Cycle includes Reg, RLM, NAQ

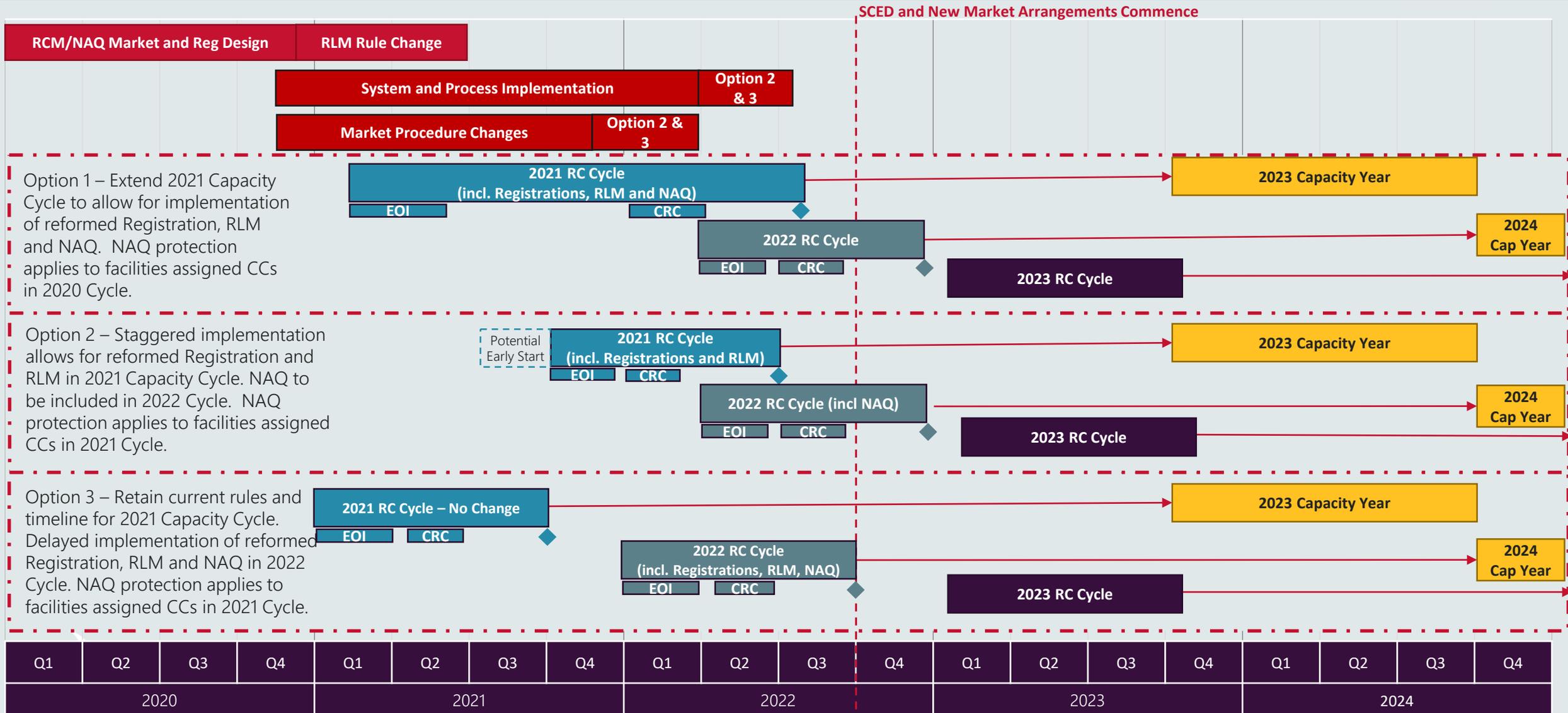


# AEMO assessment of options

Option	Regime Clarity & Certainty	Assignment->Capacity Year Timeframes	Timely incentives for new facility types	Implementation and Operational Risk
1 Extended Cycle	<ul style="list-style-type: none"> <li>Existing Facilities will have earlier certainty over their initial NAQ.</li> <li>Additional time will be available to Market Participants to assess Preliminary Constraint Equations.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 13-14 months between assigning CC for the 2021 cycle and the commencement of the 2023 Capacity Year.</li> </ul>	<ul style="list-style-type: none"> <li>Storage and hybrid Facilities can participate in the 2021 cycle under the new registration and storage framework.</li> </ul>	<ul style="list-style-type: none"> <li>High risk to further timeline delays due to complex implementation.</li> <li>Operational risk with 2021 and 2022 cycles in parallel (option to further delay 2022 cycle).</li> </ul>
2 Staggered Implementation	<ul style="list-style-type: none"> <li>New RLM methodology will be operational in the 2021 cycle prior to setting the initial NAQ in 2022 cycle.</li> </ul>	<ul style="list-style-type: none"> <li>Approximately 15 months between assigning CC for the 2021 cycle and the commencement of the 2023 Capacity Year (based on current assessment of timeframes).</li> </ul>	<ul style="list-style-type: none"> <li>Storage and hybrid Facilities can participate in the 2021 cycle under the new registration and storage framework.</li> <li>New Facilities in the 2021 cycle may have access to an initial NAQ when the 2022 cycle is run (dependent on transitional rules)</li> </ul>	<ul style="list-style-type: none"> <li>Lower risk to further timeline delays due to increased implementation duration.</li> <li>Operational risk with 2021 and 2022 cycles in parallel (option to further defer 2022 cycle).</li> </ul>
3 Delayed Implementation	<ul style="list-style-type: none"> <li>Market Participants will have an additional year to review new RCM Process prior to relevant cycle.</li> </ul>	<ul style="list-style-type: none"> <li>No change to existing timeframes (assignment two years ahead of Capacity Year).</li> </ul>	<ul style="list-style-type: none"> <li>Storage <u>cannot</u> participate until the 2022 cycle under the new registration and storage framework.</li> </ul>	<ul style="list-style-type: none"> <li>Operational risk with SME resources required for implementation and certification at same time as implementation in 2021.</li> </ul>

AEMO is seeking Market Participant's views on the options assessment recognising the importance of the RCM to the industry – both incumbent participants and looks to invest.

# Option Summary



SCED and New Market Arrangements Commence

Q1	Q2	Q3	Q4																
2020				2021				2022				2023				2024			

# Appendix - Improving Access to the SWIS

Implementation timeline challenges

AEMO Implementation activities

WEM Procedure changes

# Implementation timeline challenges

- AEMO must draft or revise 10 WEM Procedures to operationalise the NAQ, RLM and registration changes for the first year of the Reserve Capacity Cycle. An additional six Market Procedures will be required for the commencement of the Capacity Year.
- AEMO must revise 16 Internal Procedures and guidelines to support AEMO's systems and processes.
- AEMO must develop a Constraint formulation tool and a production version of the NAQ Model that is certified by AEMO's auditors. The detailed design of the NAQ Model is yet to be finalised and will require significant stakeholder engagement.
- Signification market training will be required for both internal and external stakeholders on the new AEMO systems and processes prior to go live.
- Other RCM reforms such as the proposed changes to the RLM, Outages changes and the ongoing RCM Pricing Project create additional complexities and resource constraints.

# AEMO implementation activities

In considering the various options AEMO developed its timeframes based on the following necessary implementation activities (Note: that not all are sequential/waterfall):

- Project initiation
- Market Procedure development
- Requirements gathering with Business/IT SMEs
- Procurement (e.g. RFQ development, assessment and negotiation)
- Solution design
- Development and system testing
- User acceptance testing
- Certification
- Training and handover
- Market trial
- Deployment
- Project closure and hypercare

# Relevant Level Methodology

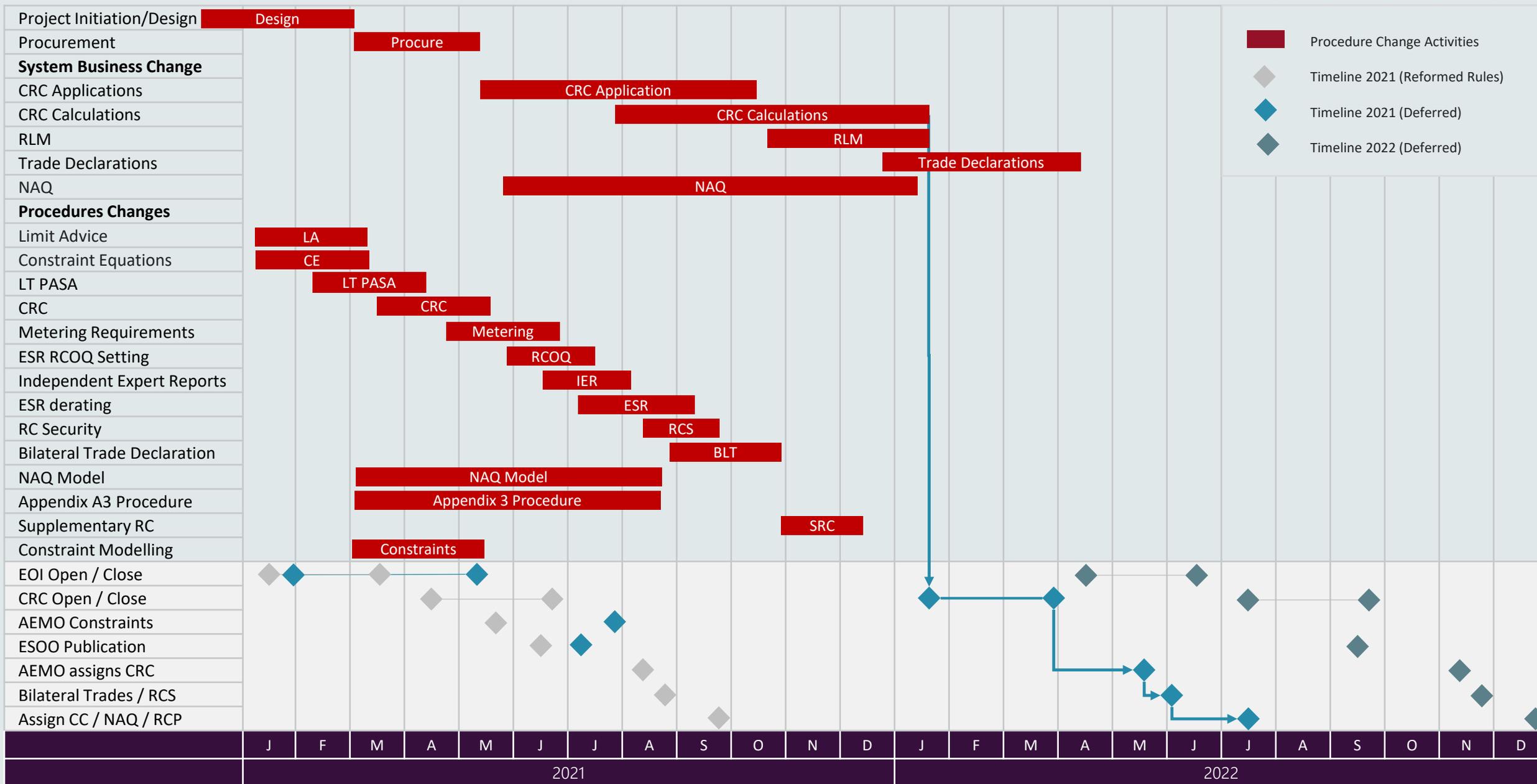
- AEMO notes that modifications to the Relevant Level Methodology (RLM) are pending following the Economic Regulation Authority's (ERA) review.
- AEMO assumes a formal Rule Change Proposal (2019\_03) will be made before the end of 2020 and that a Final Rule Change Report is issued (with approved modifications) by the end of Q2 2021.
- AEMO's planning activity assumes that the expected modifications can be carried out in parallel with WEM Reform led modifications and while there is additional scope/risk it is not on the critical path.
- If there are delays to the RLM rule development process or significant changes to the design that place it on the critical path then it would be deferred to the next cycle

# WEM Procedure Changes

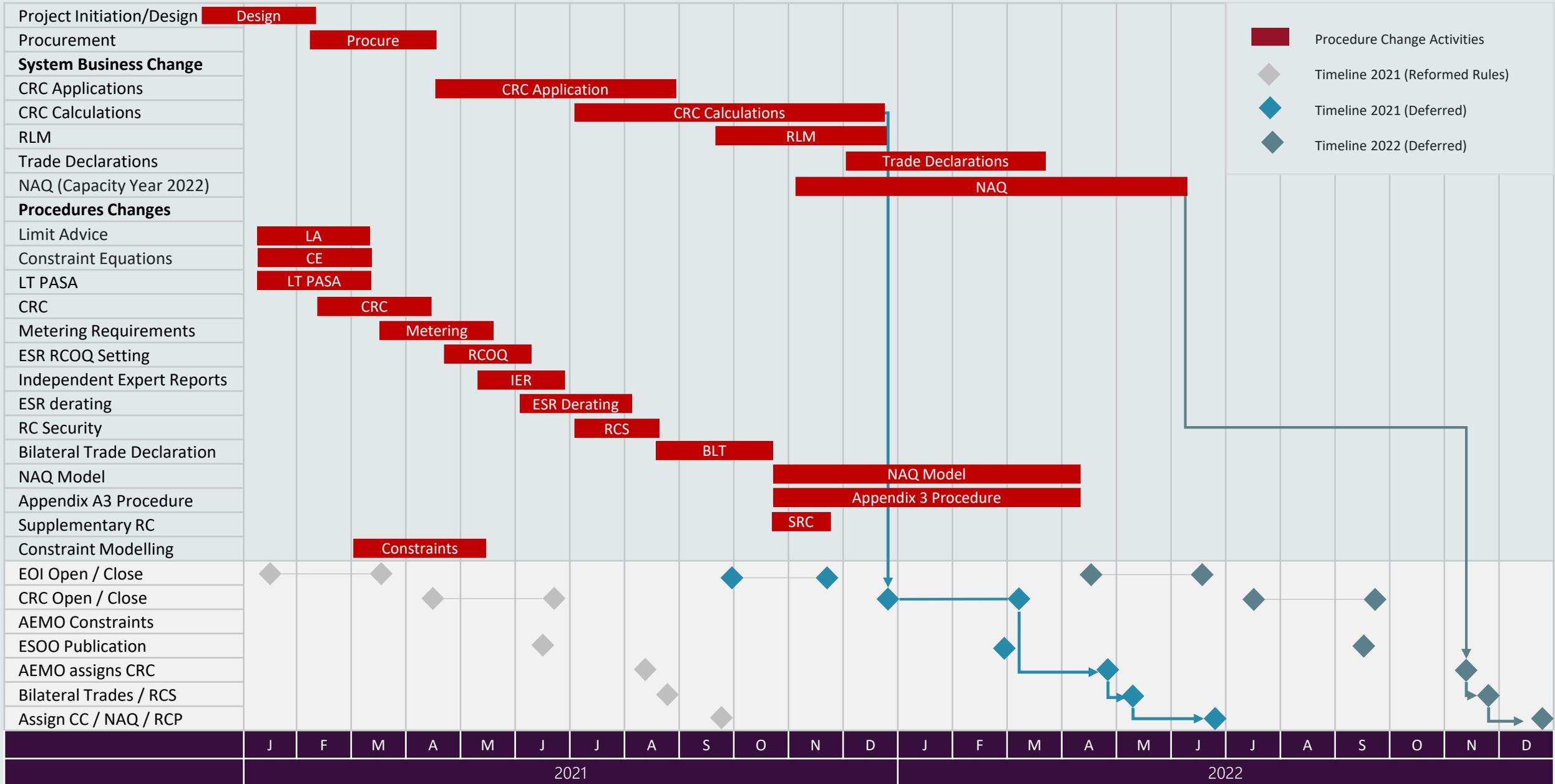
The following table provides a list of the AEMO WEM Procedures which must be created or modified to enable the RCM/NAQ reforms for Year 1 of the Reserve Capacity Cycle:

#	WEM Procedure	Needed for Cycle Stage	New/Modify	Size (S/M/L)	Key changes/requirements
1	RCM Limit Advice	Pre CRC	Modification (to new)	S/M	<ul style="list-style-type: none"> <li>New sections required to reflect specific RCM requirements</li> <li>Required for WP and AEMO to carry out constraint development for NAQ process</li> </ul>
2	RCM Constraint Equations	Pre CRC	Modification (to new)	S/M	<ul style="list-style-type: none"> <li>New sections required to reflect specific RCM requirements</li> <li>Required for WP and AEMO to carry out constraint development for NAQ process</li> </ul>
3	Long Term PASA	ESOO	Modification	M	<ul style="list-style-type: none"> <li>Changes required to the process to incorporate constraints in EUE forecasting</li> </ul>
4	ESR Obligation Intervals	CRC	New	M	<ul style="list-style-type: none"> <li>Covers process AEMO must follow when setting the ESR Obligation Intervals (for RCOQ)</li> </ul>
5	Certification of Reserve Capacity	CRC	Modification	L	<ul style="list-style-type: none"> <li>Significant changes required for ESR and registration, and additional information requirements for Network Augmentation Funding Facilities</li> </ul>
6	Metering Requirements	CRC	New	L	<ul style="list-style-type: none"> <li>Required to set the metering requirements for all hybrid Facilities</li> </ul>
7	Reserve Capacity Security	Trade declarations	Modification	S	<ul style="list-style-type: none"> <li>Minor registration changes required</li> </ul>
8	Bilateral Trades	Trade declarations	Modification	M	<ul style="list-style-type: none"> <li>RC Auction to be removed; additional information for hybrids; and NCS treatment to change</li> </ul>
9	NAQ Model/Appendix 3	CC Assignment	New	L	<ul style="list-style-type: none"> <li>Details the NAQ model and how AEMO assigns NAQs and Capacity Credits to Facilities</li> </ul>
10	Supplementary Reserve Capacity	Post CC Assignment	Modification	S	<ul style="list-style-type: none"> <li>Minor registration changes required and inclusion of constraints when procuring SRC.</li> </ul>

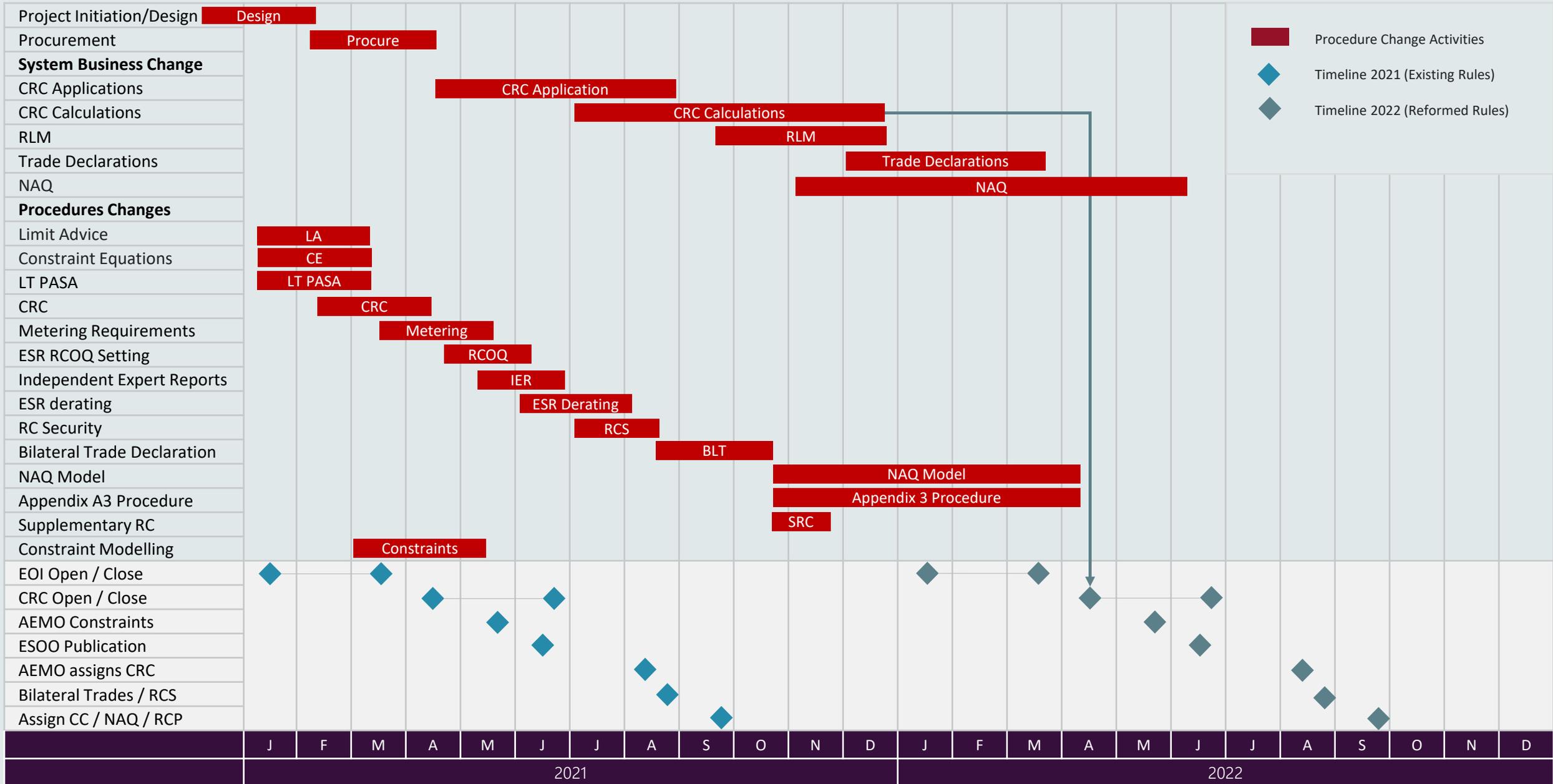
# Option 1 - Extended 2021 Cycle incl. Registration, NAQ and RLM



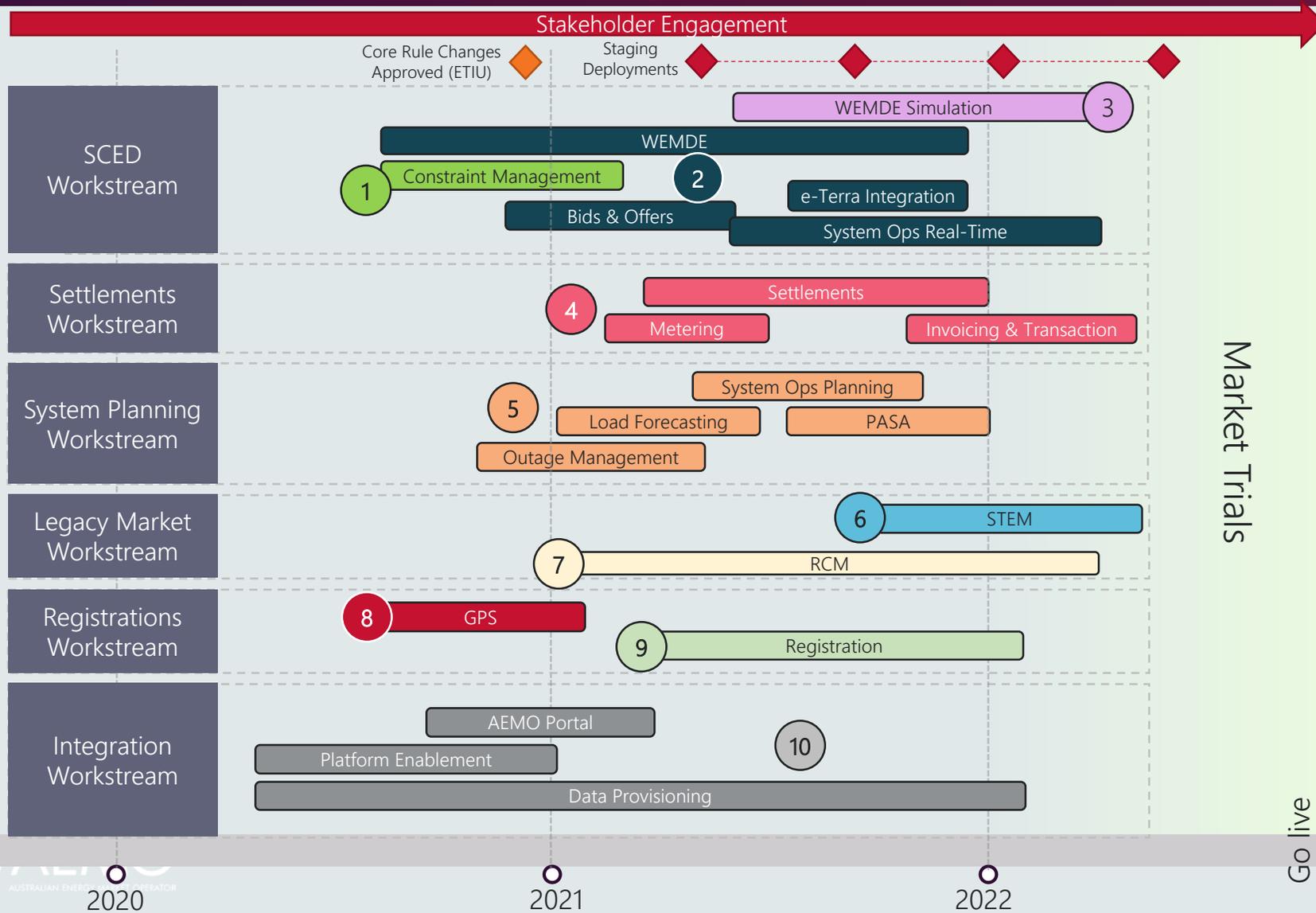
# Option 2 - Staggered Cycles - 2021 Cycle (Reg, RLM); 2022 Cycle (NAQ)



# Option 3 - Retained 2021 Cycle; 2022 Cycle includes Reg, RLM, NAQ



# WEM Reform Project Breakdown



The WEM Reform Program consists of ~23 work packages in 6 workstreams.

The work packages have been grouped into 10 implementation projects (numbered) based on the involved stakeholders and impacted systems and processes.

The project timelines set out reflect forecast development (e.g. system design/build/test) activities. However, there are initiation and non-system activities (e.g. Procedure development) that will commence before the start dates shown here.

These timeframes reflect the maximum time allowable to maintain a 2022 Go Live. Detailed planning is underway to determine actual time needed.