



Government of Western Australia
Energy Policy WA

WEM Reform Implementation Group (WRIG)

Meeting #15

5 August 2021

Working together for a
brighter energy future.

Housekeeping

Ground rules and virtual meeting protocols

- Please place your microphone on mute, unless you are asking a question or making a comment.
- Please keep questions relevant to the agenda item being discussed.
- If there is not a break in discussion and you would like to say something, you can ‘raise your hand’ by typing ‘question’ or ‘comment’ in the meeting chat. Questions and comments can also be emailed to wrig@energy.wa.gov.au after the meeting.
- The meeting will be recorded for minute-taking purposes. Please do not make your own recording of the meeting.
- Please state your name and organisation when you ask a question to assist with meeting minutes.
- If there are multiple people dialling in through a single profile, please email wrig@energy.wa.gov.au with the names of the attendees to be recorded in the minutes.
- If you are having connection/bandwidth issues, you may want to disable the incoming and/or outgoing video.

Agenda

9.30am **Item 1: Introductions**

Dora Guzeleva | ETIU

9:35am **Item 2: Procedure Updates**

Mike Hales (standing in for Alex Gillespie) | AEMO

9:40am **Item 3: Joint Industry Plan – Plan Updates**

Dora Guzeleva | ETIU Mariusz Kovler | AEMO Mark McKinnon | Western Power Ben Connor | Synergy

9:50am **Item 4: Collaboration on the Synergy Control Room Transition**

Ben Connor | Synergy Paul Elliot | AEMO

10:05am **Item 5: GPS Update**

Clayton James | AEMO

10:10am **Item 6: Market Readiness Report**

Mike Reid | AEMO

10:25am **Item 7: Training Strategy Update**

Kristy McGrath | AEMO

10:45am **Item 8: CRC Procedure for 2021 Cycle**

Rebecca Petchey | AEMO

11:00am **Item 9: Next Steps**

Dora Guzeleva | ETIU

WEM Procedures

Session purpose: provide updates on the progress of WEM Procedures

WEM Procedures

WRIG Schedule

Meeting	Owner	Project	Topic/Procedure
5 August	AEMO	RCM	CRC Part 1 – Component Level and Procedure Staging
26 August	AEMO	WEMDE	Real-Time Market Timetable
		System Planning	ESS Accreditation
		RCM	CRC Part 2 – Linearly De-rating Methodology
		RCM	Facility Sub Metering Feedback
		System Planning	Credible Contingency Events Feedback
		Digital	Data and IT Interface Feedback
		RCM	Indicative Facility Class and RCM Facility Class Assessment Feedback
30 September	AEMO	WEMDE (RTMS)	Participant Submissions
28 October	AEMO	System Planning	Declaring Emergency Operating States

WEM Procedures

Recently Published

Date	Owner	Project	Topic/Procedure
29 July 2021	AEMO	RCM	Indicative Facility Class and RCM Facility Class Assessment
29 July 2021	AEMO	System Planning	Credible Contingency Events
29 July 2021	AEMO	Digital	Data and IT Interface Requirements

Upcoming Consultation

Date	Owner	Project	Topic/Procedure
Late August	AEMO	System Planning	Communications and Control System Requirements
Early September	AEMO	System Planning	ESS Accreditation
Late September	AEMO	RCM	Certification of Reserve Capacity

WEM Procedure Timeline

Revised timeline to be published on EPWA's Website over the coming days. Any questions can be sent to WA.ETS@aemo.com.au.

Joint Industry Plan Updates

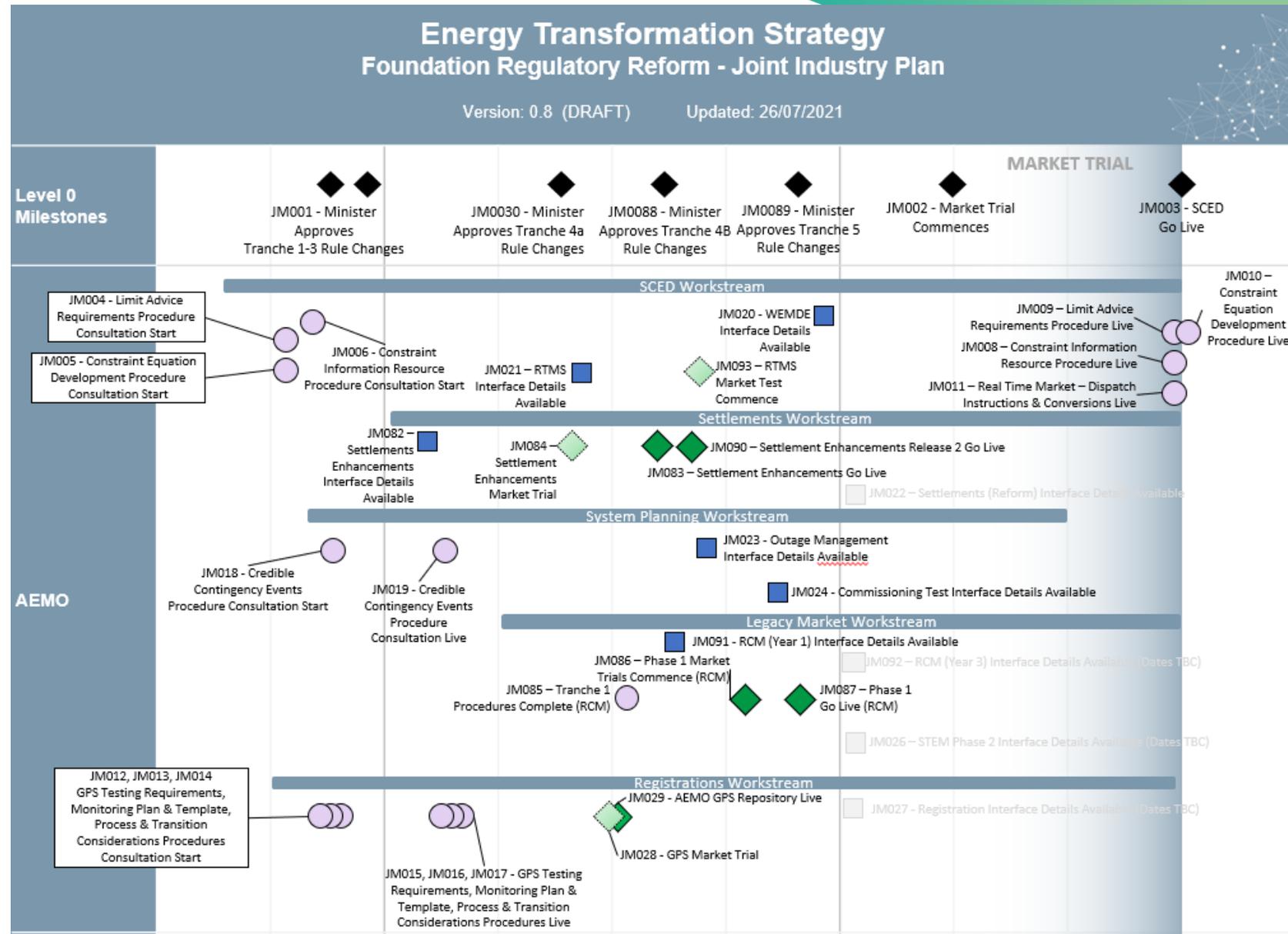
Session purpose: ETIU, AEMO, Western Power and Synergy to update WRIG on key changes to the JIP

Joint Industry Plan

Updates and run through

EPWA, AEMO, Western Power and Synergy to run through key milestones, status and changes in JIP.

Updated JIP and Milestone log will be circulated/published alongside WRIG Meeting Minutes.



Joint Industry Plan

Rule Drafting Timeline

Work package	April	May	June	July	August	Sept	Oct	Nov
TRANCHE 0 - GAZETTED <ul style="list-style-type: none"> Governance of constraints Technical Rules change management, etc 								
TRANCHE 1 - GAZETTED <ul style="list-style-type: none"> Generator Performance Standards Framework Frequency Operating Standards and Contingency Events Frameworks 								
TRANCHE 2 - GAZETTED <ul style="list-style-type: none"> Foundation Market Parameters (incl. STEM) Frequency Co-optimised ESS Scheduling and Dispatch Market Settlement, etc 								
TRANCHE 3 - GAZETTED <ul style="list-style-type: none"> Reserve Capacity Mechanism (RCM) Prioritisation and Network Access Quantities Framework Participation of storage/hybrid facilities in the RCM, etc 								
TRANCHE 4A - GAZETTED <ul style="list-style-type: none"> Transitional Arrangements (e.g. ESS accreditation) Changes and Rules commencement to facilitate 2021 RCM, etc. 								
TRANCHE 4B (July/August) <ul style="list-style-type: none"> UFLS & System Restart Remaining changes to facilitate 2021 and 2022 RCM Changes and Rules commencement to facilitate 2022 RCM 								
TRANCHE 5 (December) <ul style="list-style-type: none"> Non-Cooptimised ESS Framework Market Information Framework Reliability Standards Framework Participation and Registration framework Intermittent Loads 								
Drafting instructions and rule drafting	Stakeholder consultation			Ministerial approval, publication of the Amending Rules and Gazetta				

AEMO Implementation Program Activities

AEMO's implementation program update includes the following:

- WEM Dispatch Engine (WEMDE) project scope has been finalised and development work commenced.
- Continued Constraint Management Sprints, including development of the public Congestion Information Resource.
- Continued RTMS Sprints, WRIG-IT engagement and showcasing of the new API (AEMO adopted a hybrid API design for RTMS to accommodate participant preferences)
- Go live releases of Settlements Enhancements and GPS.
- Education session on framework for generator performance standards (including monitoring and compliance)
- For RCM (Phase 1) – Sprint 6 of 18 commenced; RLM requirements scoping;

AEMO Next Steps

- WEMDE Project moving to execution under formal governance
- RCM Phase 1 – publish Project Schedule & RLM Scope (WRIG IT Presentation 5/08/2021)
- Continue Operational and Market Readiness activities
- Planning upcoming releases

Explainer: Collaboration on the Synergy Control Room Transition

Session purpose: To provide an overview of preparations to hand over direct control of Synergy's generation fleet.

Context

- Early steam plant (e.g. Muja) manually controlled by operators, then Pinjar was built...
- **remote control systems integrated into the Western Power's 24/7 control centre**
- **a physical, technical and operational legacy maintained after disaggregation**
- **function transitioned to System Management, then AEMO**
- Today, AEMO is obligated to plan, dispatch and operate the “Balancing Portfolio”, by a mix of:
- **direct, remote control by AEMO and**
- **manual dispatch by means of a phone call from AEMO to the Synergy operator**
- This will change, noting that:
- **Synergy never had direct control over the dispatch of these units, due to technical and market rule requirements**
- **if project not smoothly implemented there are significant power system and market risks**
- **So AEMO need to transfer knowledge of the operation of Synergy's facilities to Synergy**

Current versus Future State

This round of reforms completes Synergy’s transition from part of a vertically integrated utility to a stand-alone competitive generator-retailer



Originally:	Western Power	N/A	Western Power
Pre-2016:	System Management	IMO	System Management
Now:	AEMO	AEMO	AEMO/Synergy
New Market Start:	AEMO	AEMO	Synergy

Current versus Future State continued...

Existing arrangements

- Synergy offers generation capacity to the market as a portfolio
- Dispatch of individual facilities planned by AEMO and implemented by AEMO controllers
- Synergy gas turbine fleet remote-controlled by AEMO
- Dispatch of thermal generators communicated by AEMO to sites by phone
- Synergy Dispatch Plan informed by BMO, AEMO analysis of required Ancillary Services and Synergy Dispatch Guidelines
- Synergy compliance largely based on portfolio as a whole

Reformed market

- Synergy offers generation facilities separately
- Dispatch of facilities determined automatically by AEMO's market clearing engine
- Synergy manages dispatch of own portfolio, including automation and manual control where required
- All generators automatically issued Dispatch Instructions every five minutes
- Dispatch algorithm outcomes determine the dispatch of Synergy facilities (taking into account offers, constraints, etc)
- Each facility monitored for compliance with its dispatch instructions

Why and Who

Why are we doing this?

- **security constrained economic dispatch (SCED), including co-optimisation, requires individual facility bids**
- **individual facility bids from Synergy implies individual 5 minute dispatch targets for all facilities**
- **manual management by controllers going forward becomes infeasible and greater automation is required**
- **coordinated planning and execution is needed to ensure a successful cut-over**

Who's involved?

- **Synergy – building the capability to take direct control including some SCADA**
- **Western Power – delivering the SCADA (RTUs) and comms to facilitate direct control and monitoring**
- **AEMO – knowledge transfer and planning for a smooth transition**

The scope of the collaboration

Elements requiring coordination and what remains for Synergy to do by itself

Elements being coordinated



SCADA and Comms

- New SCADA RTUs and comms being installed
- Existing SCADA data feeds to be cutover
- Western Power providing design and construction of comms pathways from facilities to AEMO
- Synergy funding
- AEMO supporting



Transition planning

- Precisely defining what must happen when
- Contingency planning
- Trialling new control arrangement prior to new market start
- AEMO, Synergy and Western Power all contributing

Synergy's exclusive responsibility



Operators

- Find and recruit the specialised skill sets required
- operators to be trained and accredited
- AEMO an information resource (knowledge transfer)



Trading systems

- Internal systems to consume data
- Integrations between trading and operations
- Decision support tools

Update on Generator Performance Standards (GPS)

Session Purpose: to provide an update on the implementation of the GPS system and next steps for participants

Brief update

Industry information session

- **AEMO and Western Power jointly held an information session on the 29th of July**
- **the session was well attended and provided a summary of the changes introduced for the GPS Framework on the 1st of February 2021, including transitional provisions**
- **the slides for the session were circulated to attendee's, but if anyone else would like a copy of the slides or would like to ask any follow up questions please send a request through to the WRIG mailbox**
- **AEMO and Western Power are progressing registration of Generator Performance Standards and approval of Generator Monitoring Plans with participants**
- **AEMO is also engaging with the ERA on processes for GPS compliance monitoring and data access**

Reminder of key dates

New WEM Rules Framework "Live"	February 2021
Deadline for establishing registered GPS	31 January 2022
Deadline for submitting proposed GMP	1 November 2021
Deadline for establishing approved GMP	3 November 2022

Market Readiness Report

Session Purpose: to present highlights from the first Market Readiness Report

Background

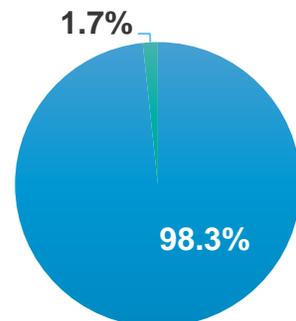
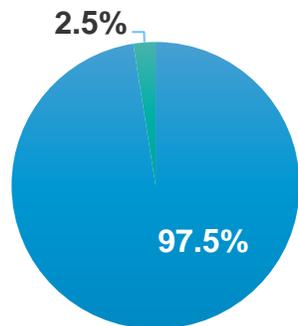
The Market Readiness Report is intended to establish a baseline of WEM participant preparedness for go-live

- In the initial phase (July to December 2021), survey focusses on general preparation
- In the next phase (January 2022 onwards), survey will focus on progress on specific tasks
- First survey was released on 30 June, open for 14 days.
- Participation voluntary and results are aggregated and anonymised.
- The Report will be published on AEMO's website.

Participation rate

Statistic	Value	Comment
Survey invitations issued	53	Note multiple participant IDs aggregated in one invitation where appropriate
Identifiable survey opens	31 (58%)	
Completed responses	24 (45%)	Excludes one response completed anonymously
Generation coverage	+97.5%	Measured either by energy or capacity

- **Fewer than half of invitees responded**
- **Responses covered most of the energy and capacity in the market**
- **A high level of participation among larger retailers was observed**
- **Quantifying coverage of other participant types, in particular retailers, raises commercial confidentiality issues**



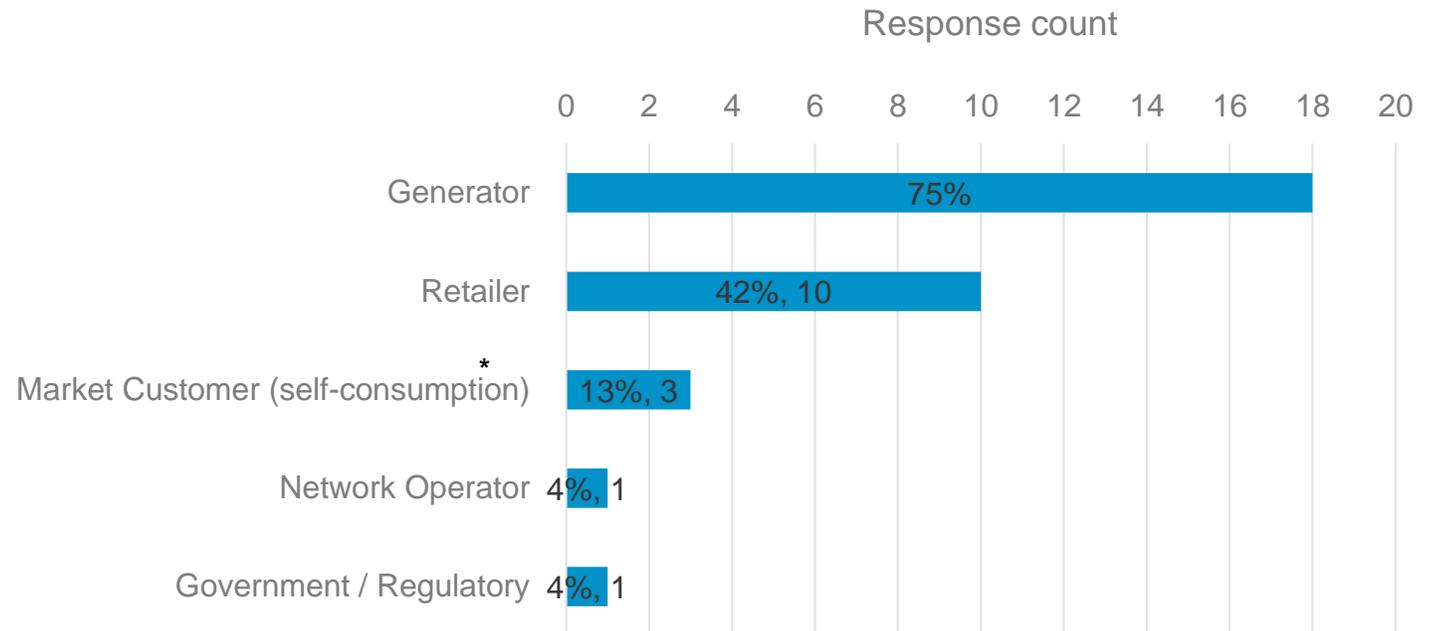
■ Capacity credits held by respondents
 ■ Capacity credits held by non-respondents

■ Energy generated by respondents
 ■ Energy generated by non-respondents

AEMO will continue to investigate suitable approaches to measuring retailer participation

Respondent types

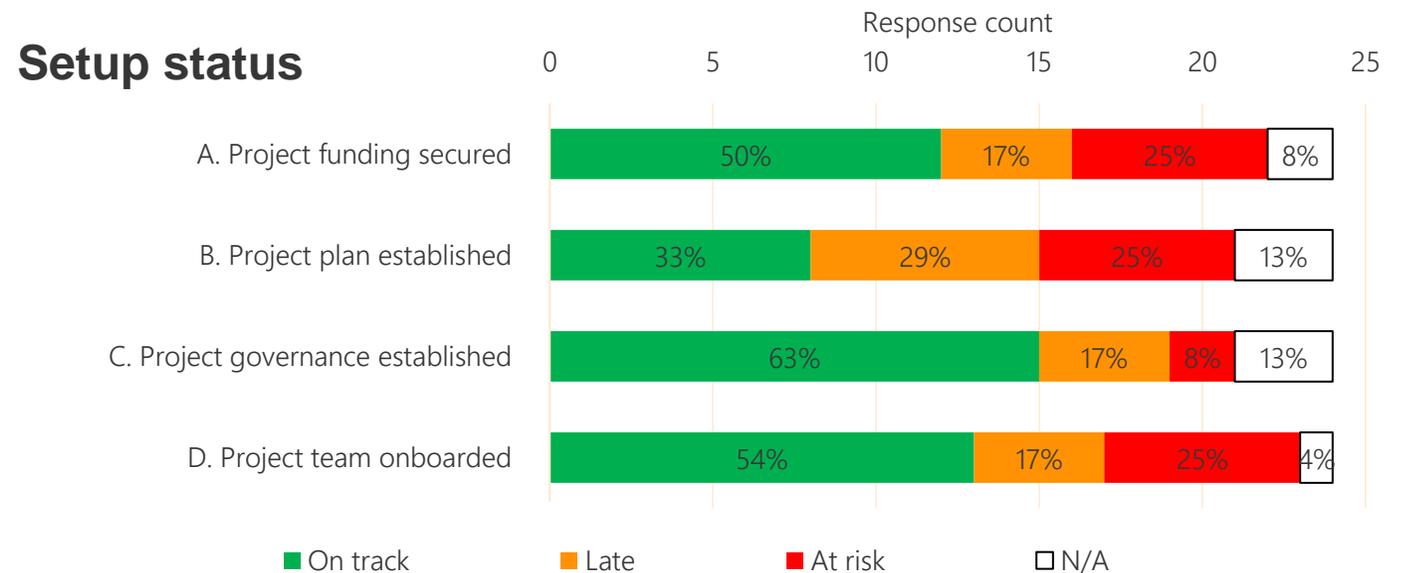
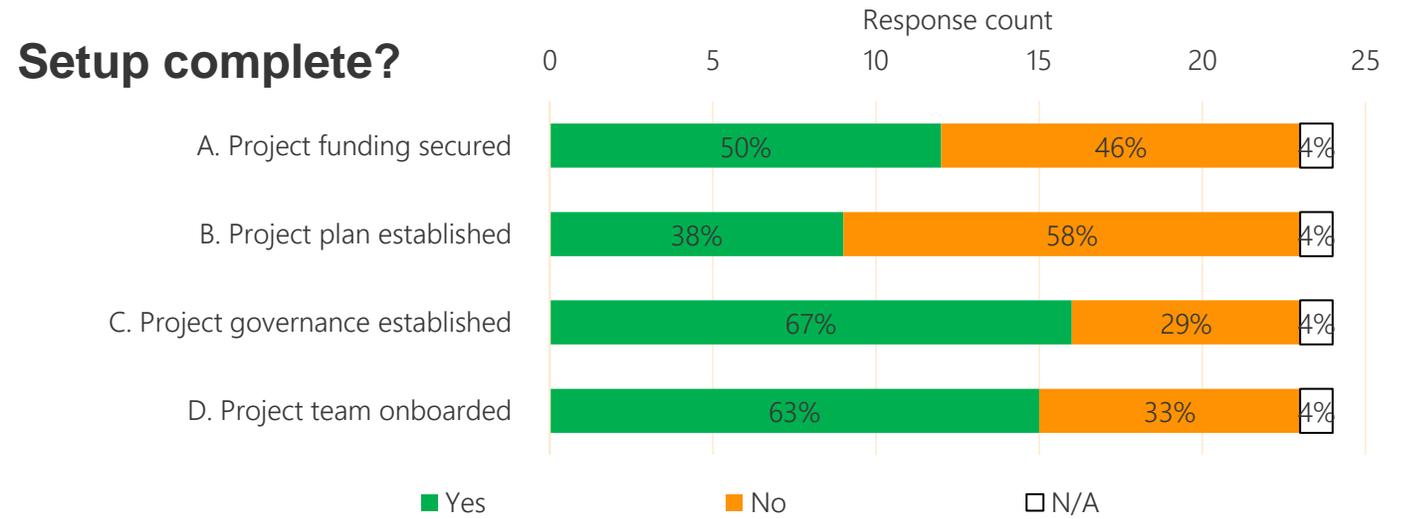
- **Most of the respondents self described as generators**
- **Fewer than half self-described as retailers**
- **Only one large industrial user responded**



*The survey gave respondent the option to nominate as Generator, Retailer, Market Customer (self consumption), Network or Government/Regulatory. Three respondents selected Market Customer (self consumption), of which two were small retail businesses. The intention had been to capture within this category large industrial-scale loads that directly participate in the market. AEMO will investigate the two unexpected responses and consider how best to clarify the intention for future surveys.

Program setup - Quantitative

- **Most respondents have established their work programs or made good progress**
- **Governance and staffing are better progressed than funding and planning**
- **More than half consider project planning to be late or at risk.**



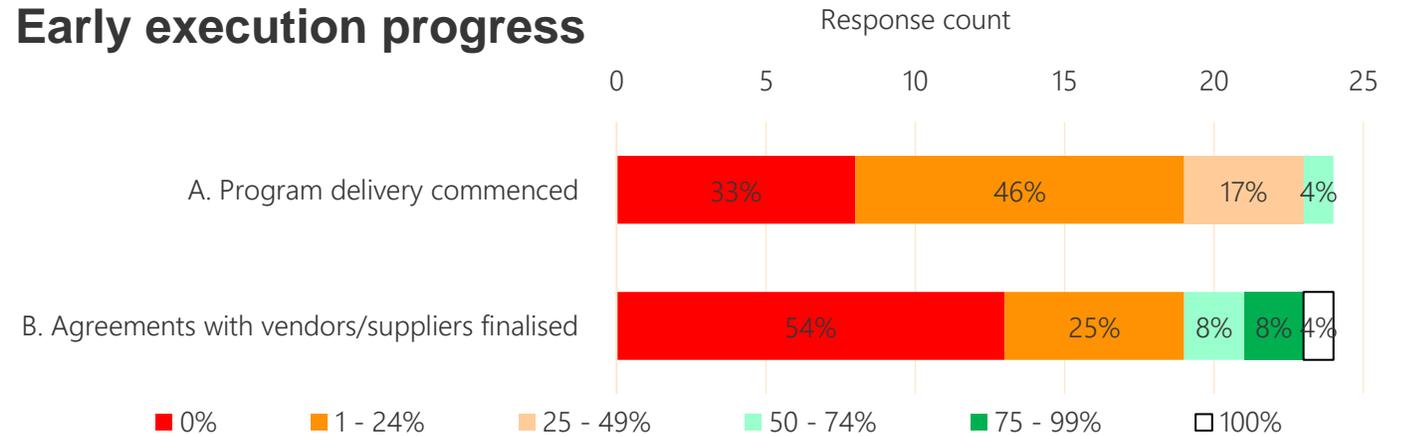
Program setup - qualitative



Early execution - quantitative

- Most respondents have made limited progress towards executing early stages of their work programs
- Most respondents have commenced their work programs
- A third are yet to start
- Despite limited progress, more than 40% regard their execution as on-track (relative to what could reasonably be expected?)

Early execution progress



Early execution status



Early execution - qualitative



Key Risk Areas

Participants rated different parts of their readiness work programs for:

- Impact on readiness if not successfully completed
- Confidence that they could successfully complete the work by go-live

Responses indicated:

Most concerned about readiness work in these areas:

- IT - market interface
- IT - internal functionality upgrades
- Business operations
- Resourcing and skills uplift

Less concerned about:

- Commercial and contracts
- Physical equipment and infrastructure

Risks - timing

Respondents raised strong concerns and described large risks related to the timeframe for the WEM Reform



Risks – Delivery of technical information

Respondents emphasised risks connected to the provision of technical information by AEMO. These stressed the importance of both timeliness and sharing information in a structured way.

“[We] highlight the lack of a consolidated database for WEM reform related information. Currently information is **scattered** between various webpages and sometimes only sent to attendees of specific market forums. This poses huge risk to participants of missing **potentially vital information**”

“We are having difficulty even identifying from the **deluge of technical information** being provided to us by the multitude of AEMO sections/groups as to what is even required of our company to prepare for the coming market changes”

Information Delivery

“There is a tight development timeframe and it hinges on AEMO being able to **deliver the relevant specifications in a timely manner.**”

“[Participant] is deeply concerned with current progression of the WEM Reform program and the **lack of useable information** provided to participants to date”

Key Insights

- **Strong engagement with reform**
- **Some progress in establishing work programs**
- **Engagement ≠ progress**
- **Execution of work programs remains in a very early stage**
- **Significant barriers to establishing and progressing work programs including:**
 - Waiting on detailed interface specifications
 - deficits in some participants' understanding of the WEM
 - Internal and external competition for skilled resources in IT, commercial and operational areas
- **Work program risk assessments remain quite preliminary**

Next steps

General readiness

- The next Market Readiness Survey is due to be released September

Specific readiness

- AEMO developing specific readiness criteria with input from RWG
- Release the first readiness survey on specific criteria in early 2022.
- timeline partially reliant on WEM participants informing us about key readiness risks



Market Participant Training

Session purpose: To consult and gain feedback on the approach to Market Participant Training

Market Participant Training Objectives



Create awareness and understanding of the new market design



Support the development of the knowledge, skills and capabilities required to participate in the new market



Support Market Participant technical teams to develop systems that interact successfully with AEMO market systems



Ensure the security and reliability of the SWIS by supporting a smooth transition to the new market

High Level Impacts and Training Needs Analysis

Generator	Market interface impacts (IT)	Business operations impacts	Examples of potential education and training needs
SCED	Constraint Management Reform	Medium	<ul style="list-style-type: none"> Guidance on consuming the Congestion Information Resource
	WEMDI UI and E-terra integration	High	<ul style="list-style-type: none"> Using the user interface to obtain information; Manage and respond to instructions from E-terra.
	WEM Dispatch Engine	Low	<ul style="list-style-type: none"> Education in the principles of SCED and how prices are derived in a co-optimised and constrained market
	Real Time Market Submissions	High	<ul style="list-style-type: none"> Using the user interface to make submissions; Information and support for API development
	DTS Integration and SCED Offline tools	Low	<ul style="list-style-type: none"> Using the SCED offline tools
Settlements	Settlements Enhancements	Medium	<ul style="list-style-type: none"> Understanding new settlement systems; Information and support for API development
	Settlements Reform	Medium	<ul style="list-style-type: none"> Understanding new settlement processes, stages, data and calculations Information and support for API development
System Planning	Outage Management Reform	Medium	<ul style="list-style-type: none"> Understanding Outage Intention Plan and processes; Using the user interface to manage outage requests
	Forecasting Integration	Low	<ul style="list-style-type: none"> N/A
	PASA Reform	Medium	<ul style="list-style-type: none"> Understand the arrangements for notification and intervention
	System Planning Tools	Low	<ul style="list-style-type: none"> N/A
Regist'n	Registration Reform	Low	<ul style="list-style-type: none"> Understand the procedures for registration
	GPS Reform	Medium	<ul style="list-style-type: none"> Understand the Generator Monitoring Plans etc; Using the user interface to manage compliance
Legacy Market	STEM	Low	<ul style="list-style-type: none"> Largely covered through settlements
	RCM Reform	Medium	<ul style="list-style-type: none"> Understand WEM procedures, RCM timetables; Using the user interface to participate in capacity market

Level of Impact

- High
- Medium
- Low

Education & Training Delivery



GO-LIVE

WEM Reform Training Skills Ladder

 Socialisation 1	 Education 2	 Familiarisation 3	 Formal Training Modules 4	 Scenario-based Training Sessions 5	 Post GO-Live On-demand video walk-throughs T
Raises awareness on what to expect from the new rules, systems and procedures.	Provides stakeholders with an understanding of new processes, and the system's look and feel. Delivered in the second half of system-build.	Allows structured familiarisation and testing with working system components during mid-to-late stages of system development.	Allows detailed step-through of systems and new ways of working. Individually in the lead-up to go-live, and supplemented with group learning sessions.	Provides an unstructured parallel operational-practice environment to build confidence and to consolidate learning, to small groups of end-users / colleagues.	Provides on-demand support to assist with post-training 'memory slips'.
<ul style="list-style-type: none"> • WRIG • TDOWG • Market Design Summary 	<ul style="list-style-type: none"> • WRIG-IT • Showcase presentations 	<ul style="list-style-type: none"> • Structured familiarisation in a sandbox environment • Walkthrough guides 	<ul style="list-style-type: none"> • E-learning modules • Facilitator-led training • Quick Reference Guides • User Guides 	<ul style="list-style-type: none"> • Simulations • Market Trials- End to end scenario testing • Specialised Coaching – where required 	<ul style="list-style-type: none"> • On-line help • Bite sized 'how to' videos

AEMO Training Themes

1

How the market works

(Socialisation and Education to help you engage with the program)

- Market Design Summary
- Market Education sessions (Overview, RCM, Power Systems)
- WRIG WEM Procedures

2

What our projects are delivering

(Education and Familiarisation to help you build your systems and processes)

- WRIG-IT - project scope, technical specs, delivery calendars
- Technical Showcases, Sandboxes, Walkthrough guides
- Market testing – Single application

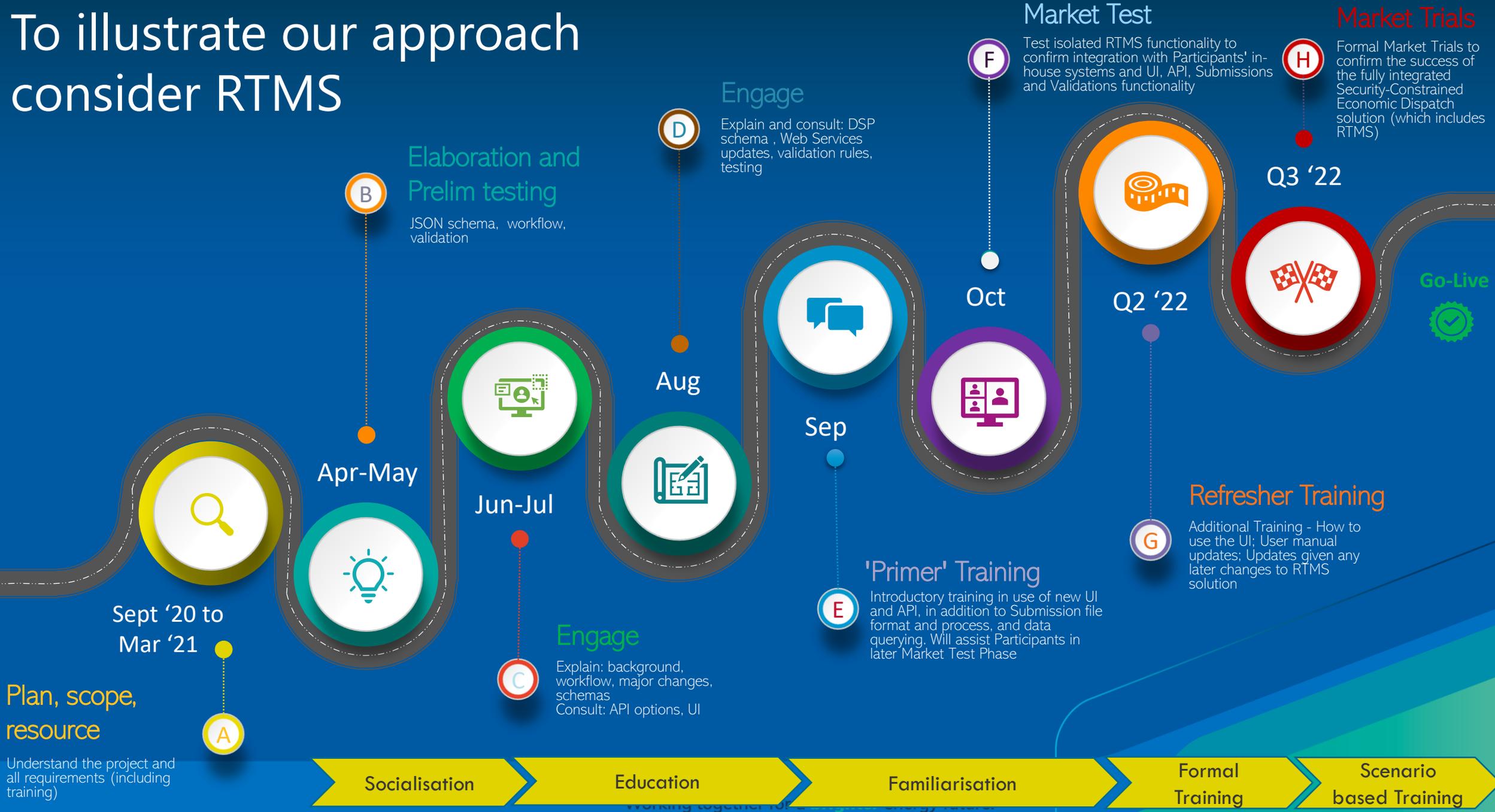
3

How to use our products

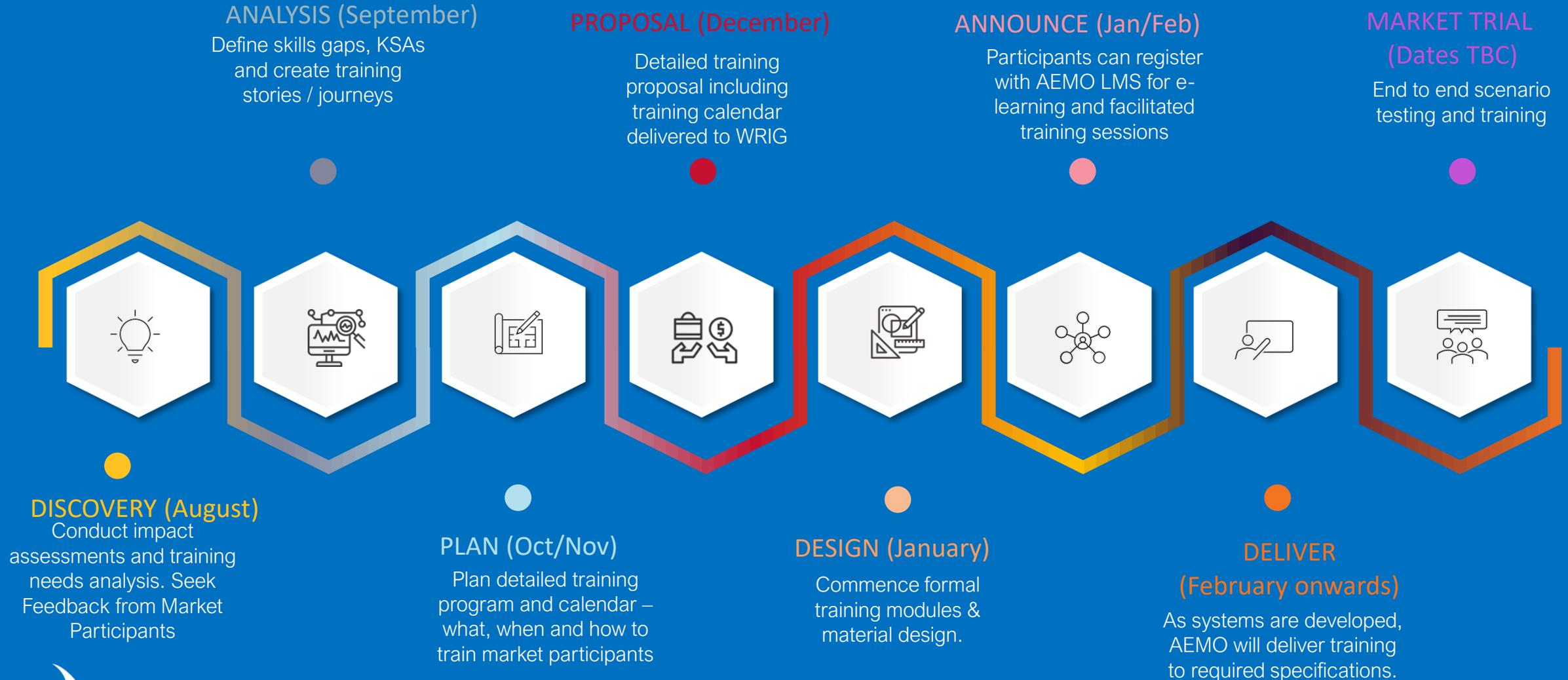
(Formal Training and Market Trial to develop knowledge and skills)

- Formal training modules (self paced e-learning and facilitated sessions)
- Market Trial with end-to-end scenario testing
- Market Transition activities
- User Guides

To illustrate our approach consider RTMS

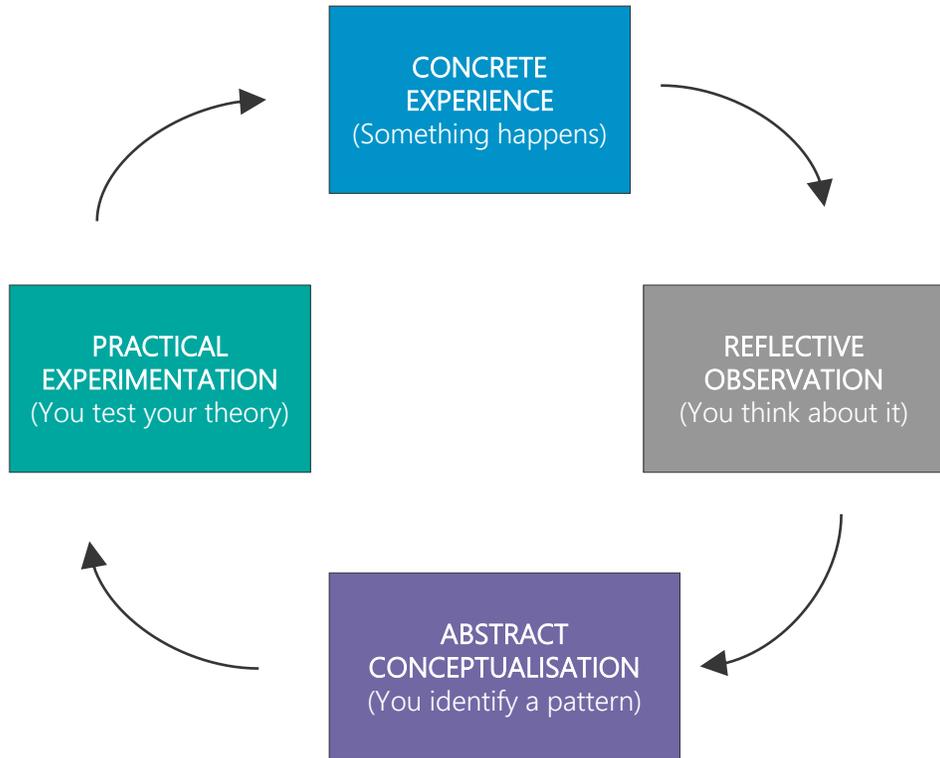


Formal training plan development



A little bit of theory...

Tailoring training to learning styles



Learning Styles & Training Methods Survey

- Go to [slido.com](https://www.slido.com)
- Enter code #367804
- Answer the questions

The survey is anonymous and will take around 2-

Someone with a preference for this stage ...	Is described as a ...
Concrete experience	Activist
Reflective observation	Reflector
Abstract conceptualization	Theorist
Practical experimentation	Pragmatist

Activists	Reflectors
<ul style="list-style-type: none"> • On-the-job learning by trial and error • Coaching from a respected practitioner • Activity-based learning in groups • Well-simulated work environments 	<ul style="list-style-type: none"> • Observing others 'live' or on video • Knowledge Sharing • Making notes and keeping learning diary • Well-simulated work environments
Pragmatists	Theorists
<ul style="list-style-type: none"> • Practical workshops • On-job learning by trial and error • Applying tools and models to practise situations • Well-simulated work environments 	<ul style="list-style-type: none"> • Courses and seminars • Lectures and presentations • Reading and personal research • Well-simulated work environments

CRC WEM Procedure for the 2021 Reserve Capacity Cycle

Session purpose: explain key features of the procedure

Next Steps

Next Steps

- **Next WRIG 9:30am Thursday 2 September 2021**
- **Next WRIG-IT meetings scheduled**
- 5 August 2021: DSP schema and Web Services updates
- 19 August 2021: Consultation on Developer Support
- 26 August 2021: Submission validation rules and Market Participant testing
- **Readiness Working Group #4 scheduled for 17 August**
- **WRIG Members – please continue to provide offline feedback, queries and suggestions on topics you would like further information on**