



**Energy Transformation
Taskforce**

Strategic Consultative Group

Meeting 2

29 October 2019





Agenda

1.

Welcome and apologies

Stephen Edwell | Chair, Energy Transformation Taskforce

2.

Energy Transformation Strategy – Work program status update

Stephen Edwell | Chair, Energy Transformation Taskforce

3.

Whole of System Plan – Scenarios, assumptions and modelling approach

Miles Jupp | Project Lead, Whole of System Planning

4.

Distributed Energy Resources Roadmap

Jai Thomas | Project Lead, Distributed Energy Resources

5.

Capacity Credit Rights – Allocation of capacity credits in a constrained network access framework

Stephen Edwell | Chair, Energy Transformation Taskforce

6.

Other business

Stephen Edwell | Chair, Energy Transformation Taskforce

Energy Transformation Strategy

Work program status update

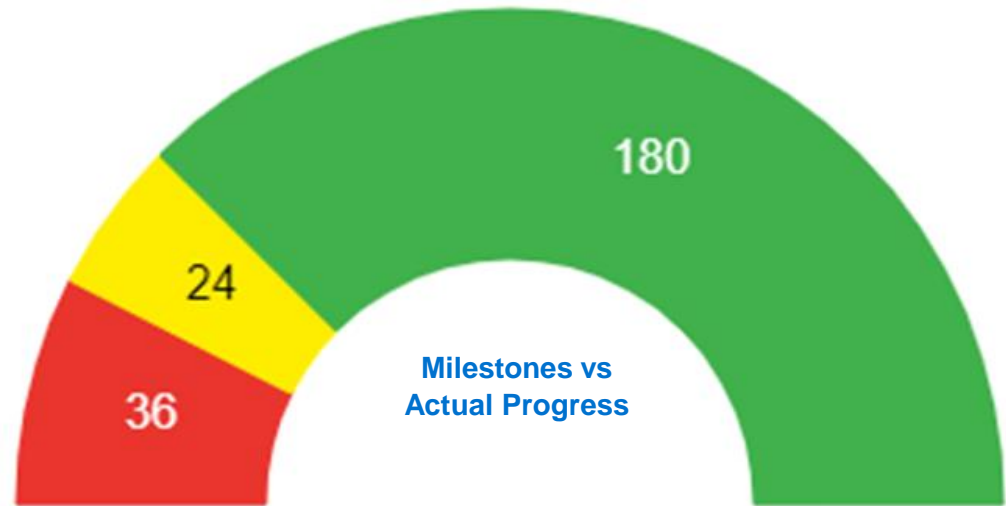


Work program status update

As of October 2019

Whole of Program ●

End Date
31 October 2022
Planned % Complete
13%
Actual % Complete
18%
Variance
5%



Note: The program and project status reports record progress made against both interim and final milestones. While some interim actions are tracking slightly behind schedule, others are ahead of schedule. Overall the Taskforce is on track to meet all key deliverable timelines.

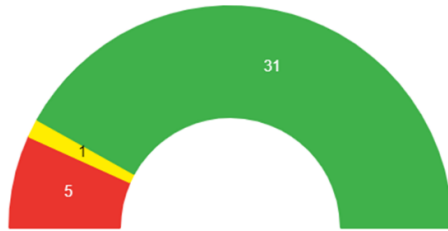
Progress Rating Key

- Where a variance is equal to or greater than -10%.
- Where a variance is between 0 and -10%.
- Where a variance is equal or greater than 0 or a task is not due to commence until a future date.

Projects status update

As of October 2019

Whole of System Planning ●



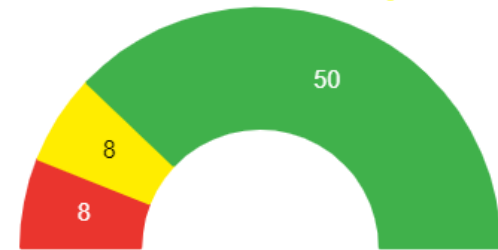
End Date
29 July 2020

Actual % Complete
35%

Planned % Complete
35%

Variance
0%

DER Program ●



End Date
28 August 2020

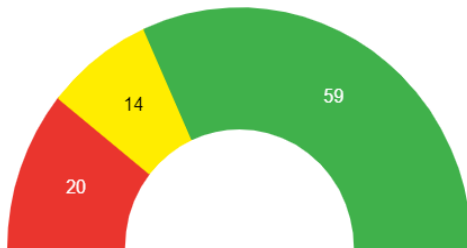
Actual % Complete
25%

Planned % Complete
29%

Variance
-4%

Roadmap
66% Complete
12% Variance

Improving Access to the Network ●



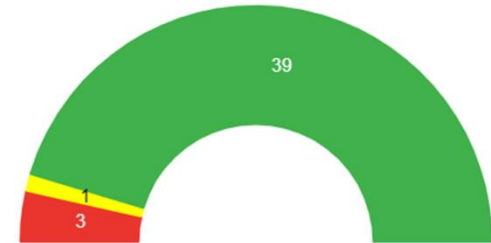
End Date
14 October 2022

Actual % Complete
12%

Planned % Complete
11%

Variance
1%

Delivering the Future Power System ●



End Date
31 October 2022

Actual % Complete
15%












Planned % Complete
13%

Variance
2%

Energy Transformation Taskforce activities

Meetings 1-7

The Taskforce has approved:


- Taskforce governance arrangements
- Communication and stakeholder engagement plan
- Project Implementation Plan 
- Scenarios for first Whole of System Plan 
- Power system security and reliability regulatory framework 
- Technical Rules change management 
- WEM foundation design parameters 
- Energy scheduling and dispatch 
- Essential system services technical review 
- Frequency control essential system services acquisition framework and technical arrangements  
- Power system constraint equations governance 
- Foundation settings for WEM settlements 

The Taskforce has also considered regular updates on all workstreams

Meeting 8 November 2019

The Taskforce is to consider:

- Detailed design of Technical Rule Change Management
- Frequency operating standards
- Draft DER Roadmap
- Proposed changes to the Access Code

 Information paper published

Stakeholder engagement activities to date



Meetings

	No.
Energy Transformation Taskforce	7
Program Implementation Coordination Group	4
Strategic Consultative Group	2
Transformation Design and Operation Working Group (previously MDOWG/PSOWG)	8
Project Working Groups	35
1:1 Meetings	174



Public forums/workshops and presentations to industry groups

	No.
Public forums/workshops	2
Presentations to industry groups (MAC, WAECF, CCI, CME etc)	16



Publications

	No.
Reports/information papers	12
Newsletters	4

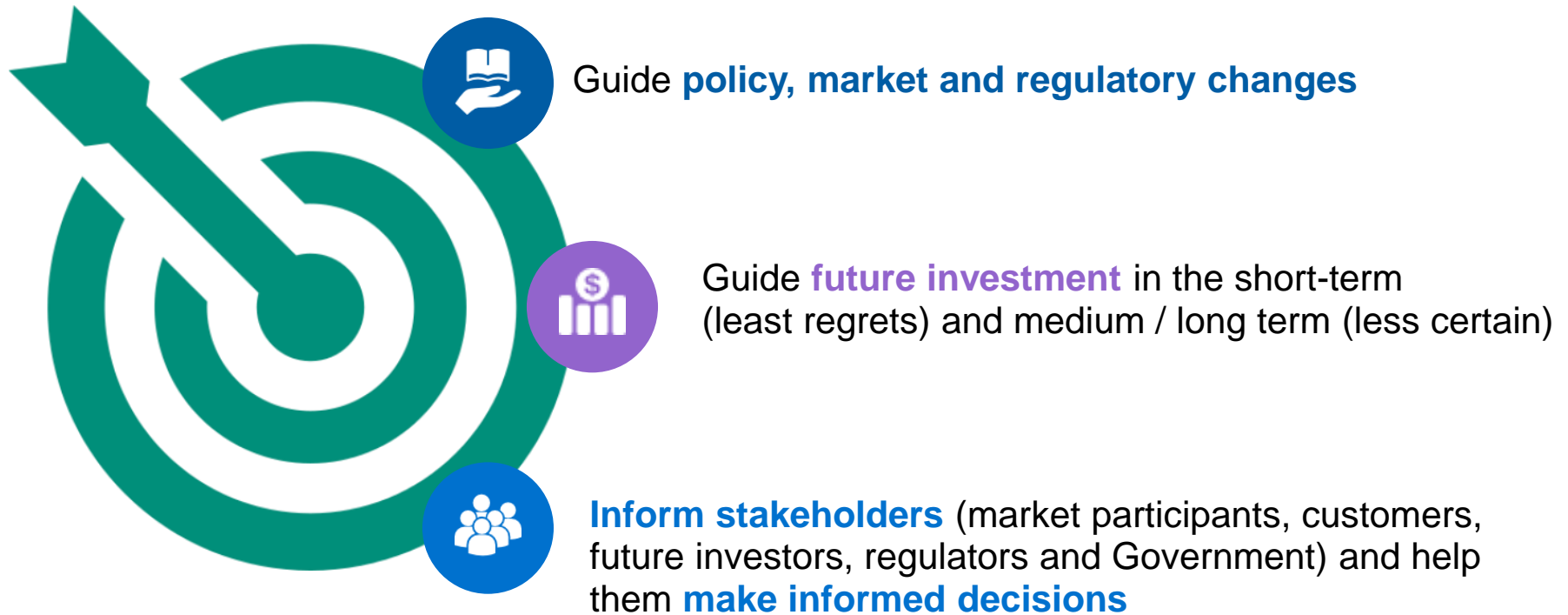
Whole of System Plan

Scenarios, assumptions and modelling approach

Miles Jupp, Project Lead

Purpose of the WOSP

WOSP should demonstrate how to deliver electricity supplies at lowest sustainable cost within the reliability and security standards over a 20 year period.



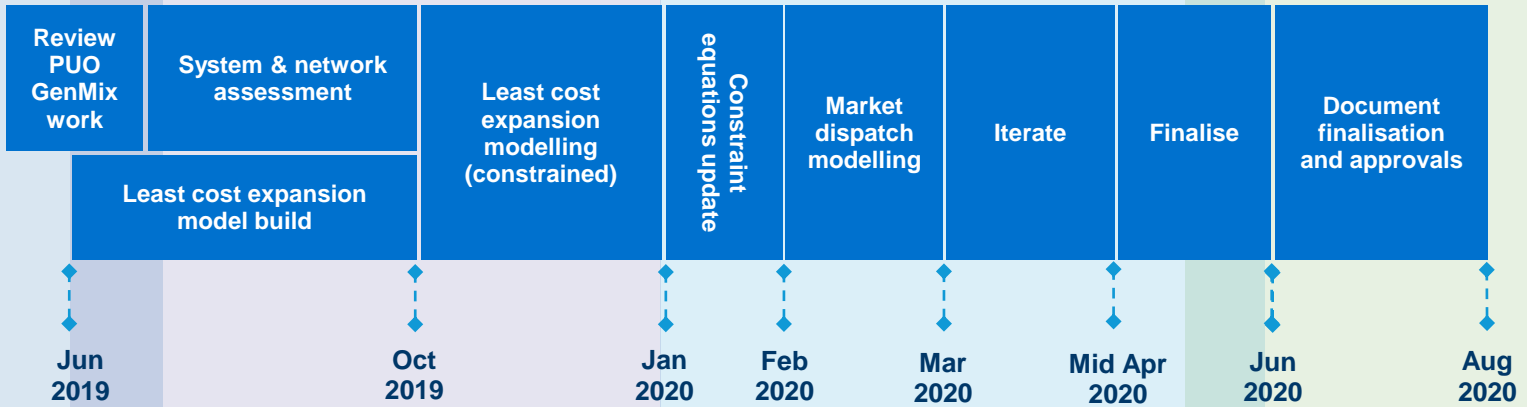
Timeframes

PHASE 1
Develop and agree scenarios
 Apr – Jul 2019

PHASE 2
Deliver forecasts, technical assessments and modelling
 Jul – Dec 2019

PHASE 3
Develop capability/network /system recommendations and investment plan
 Jan – Jun 2020

PHASE 4
Deliver Whole of System Plan
 May – Jul 2020



Q2 2019

Q3 2019

Q4 2019

Q1 2020

Q2 2020

Q3 2020

Jul 2019

- Industry forum on scenarios
- 1:1 meetings with stakeholders
- Present to MAC on scenarios
- Finalise scenarios

Oct 2019
 Present to MAC on inputs and assumptions

Dec 2019
 Present to MAC on technical assessment

Mar 2020
 Present to MAC on preliminary generation and network plans

- Jun 2020
- Present to MAC on SWIS/network investment plan
 - Industry forum on preliminary findings

Aug 2020
 Government approval to publish WOSP

Inputs and assumptions



Customer demand

Scenarios have been broken down into half-hourly demand profiles on a customer segment basis in each of the 11 nodes over 20 years



Network augmentation

Western Power are estimating network transfer limits between the nodes and providing approximate costs for network augmentation options



Generator costs

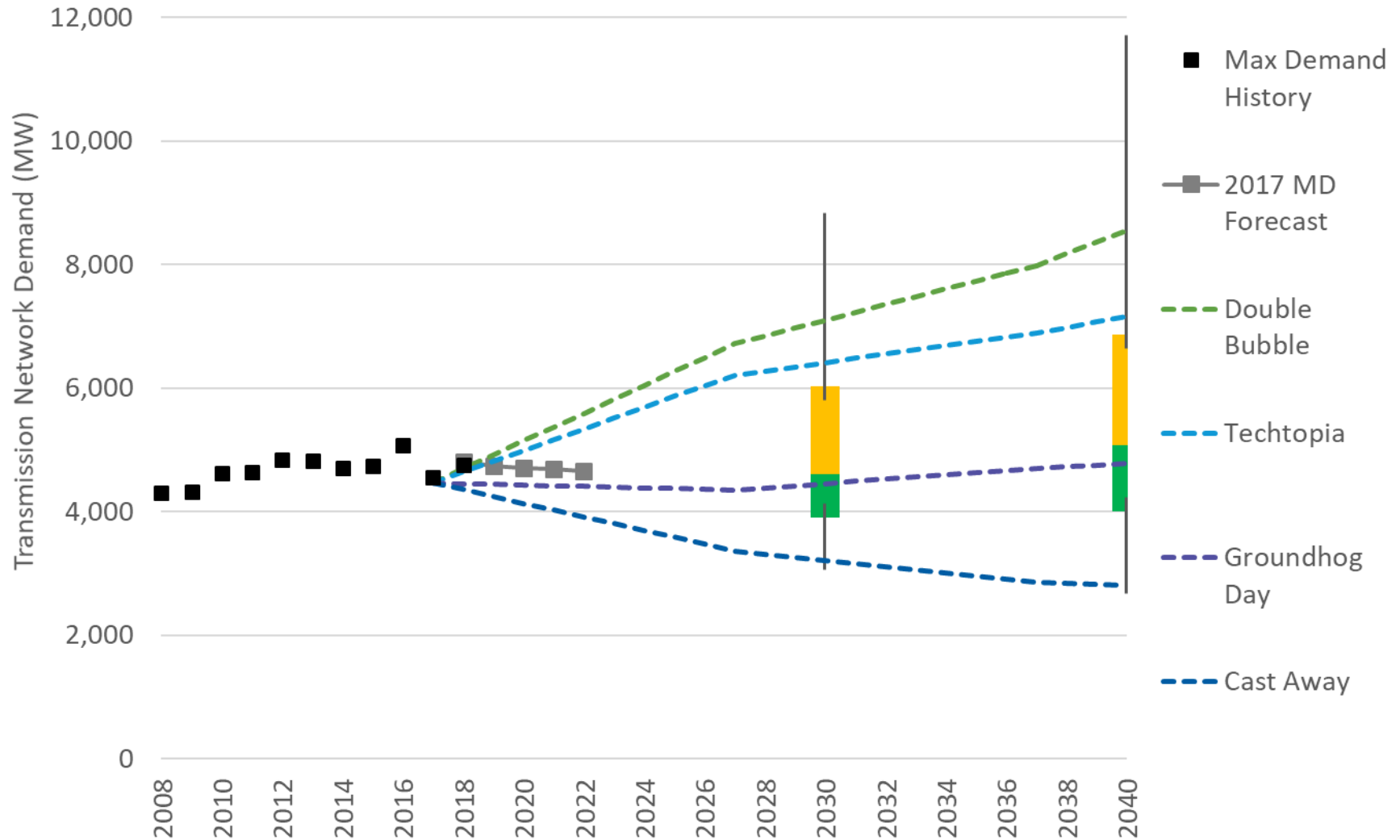
Cost assumptions of both existing and potential new facilities have been collated in collaboration with a wide range of industry participants

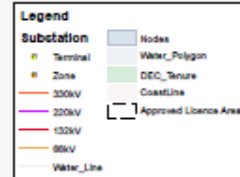


Essential system services

System constraints are assessed in the modelling and examine frequency regulation (load following) and frequency contingency reserves (spinning reserve and load rejection reserve)

Maximum Demand – Four Scenarios





Customer segments (residential, business and industrial)

Allocated per substation (108) and point loads (600)

Allocated to one of the 11 nodes

Adjusted for seasonality






For every interval over a 20 year period

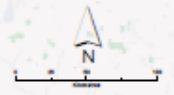
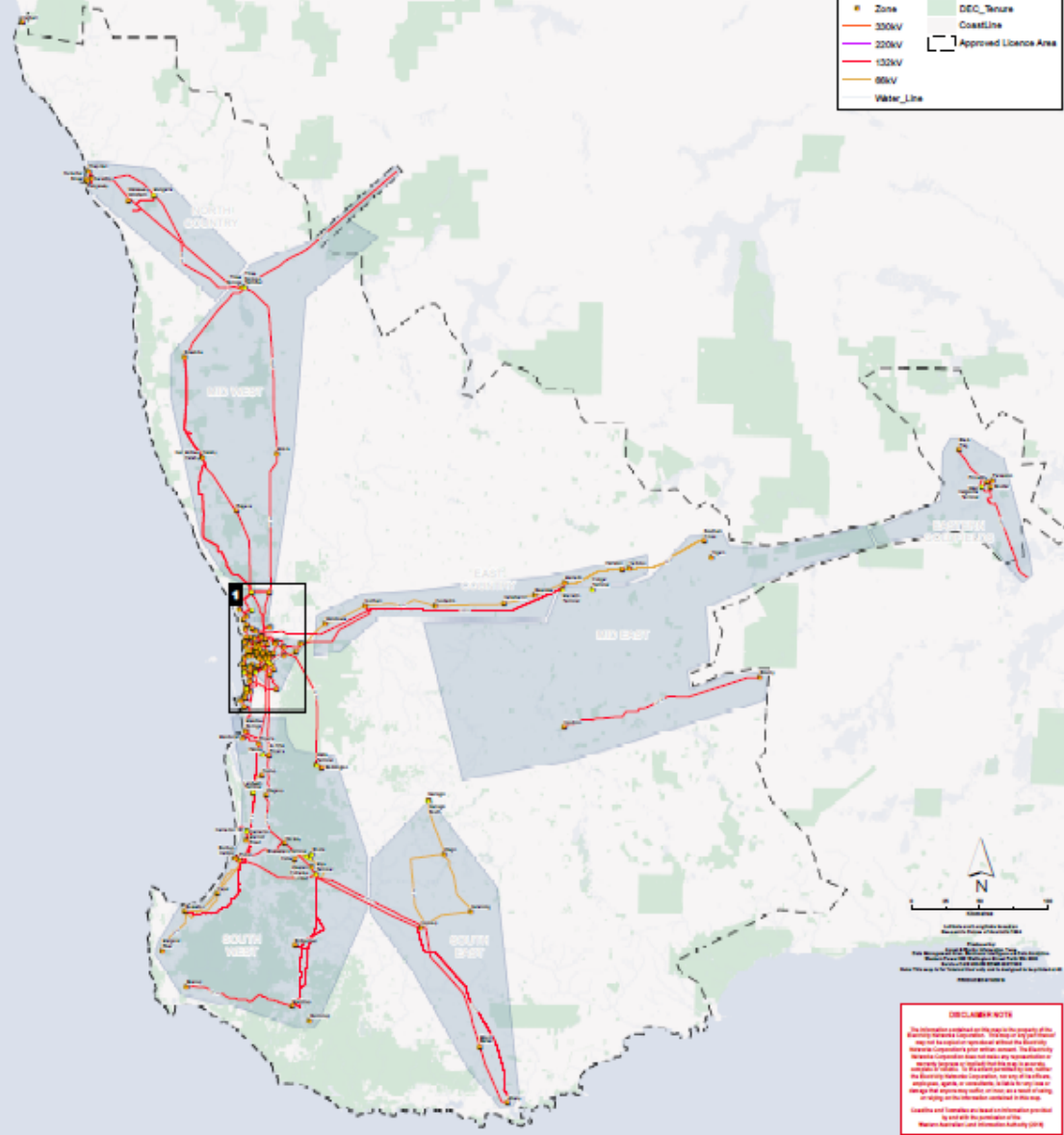
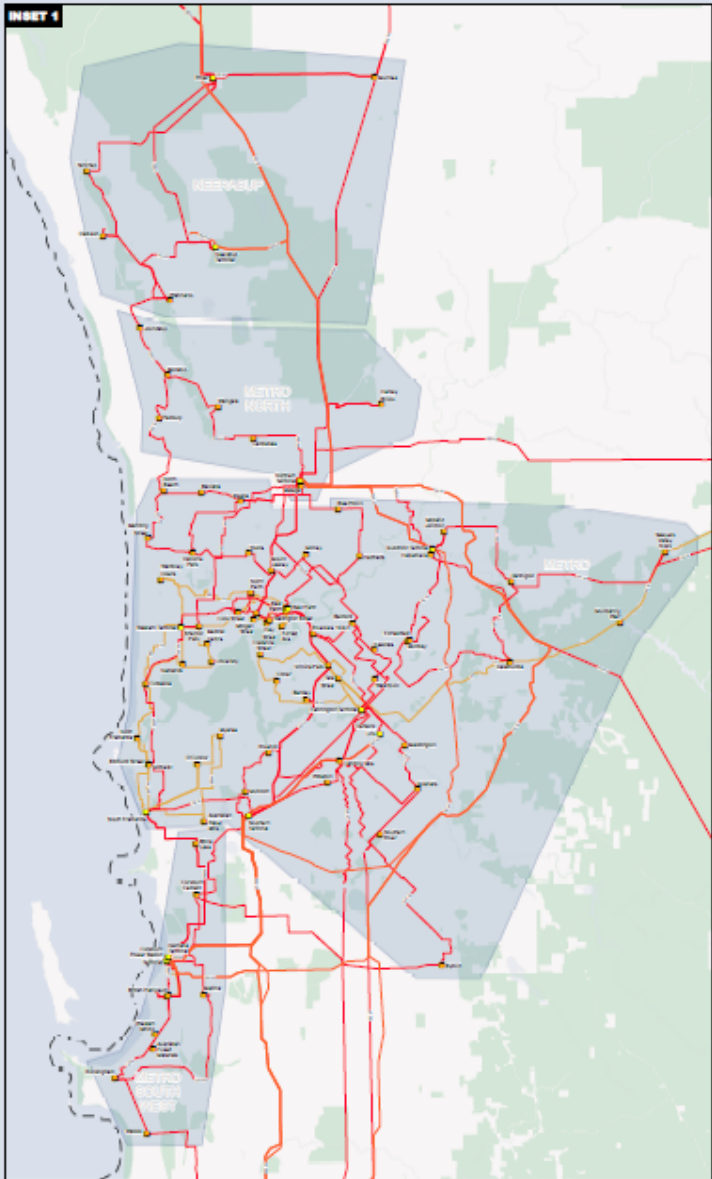
For 4 demand scenarios

Then adjusted for customer segment DER at each of the substation or point loads for every interval

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Legend

 Nodes	 Water_Polygon
 Terminal	 DEC_Tenure
 300kV	 CoastLine
 220kV	 Approved Licence Area
 132kV	
 66kV	
 Water_Line	



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Generator assumptions

1

Existing plant parameters

2

Replacement capex

3

Fuel prices

4

Wind and solar planting list

5

Generator retirement dates

6

Bespoke new generation and storage

7

Capex multipliers by node

8

Wind capacity factors

...then we tested all of these assumptions

Stakeholder engagement

The Project Team has tested the modelling inputs and assumptions with a wide range of industry stakeholders

50+ 1:1 meetings with interested stakeholders since project start

20+ 1:1 meetings with interested stakeholders re inputs and assumptions

Industry participants



Investors



Advocacy Groups



* Please note data is as at 18 October 2019

Investment evaluation

1

Existing participants

2

Developers of new generation

3

Industry organisations

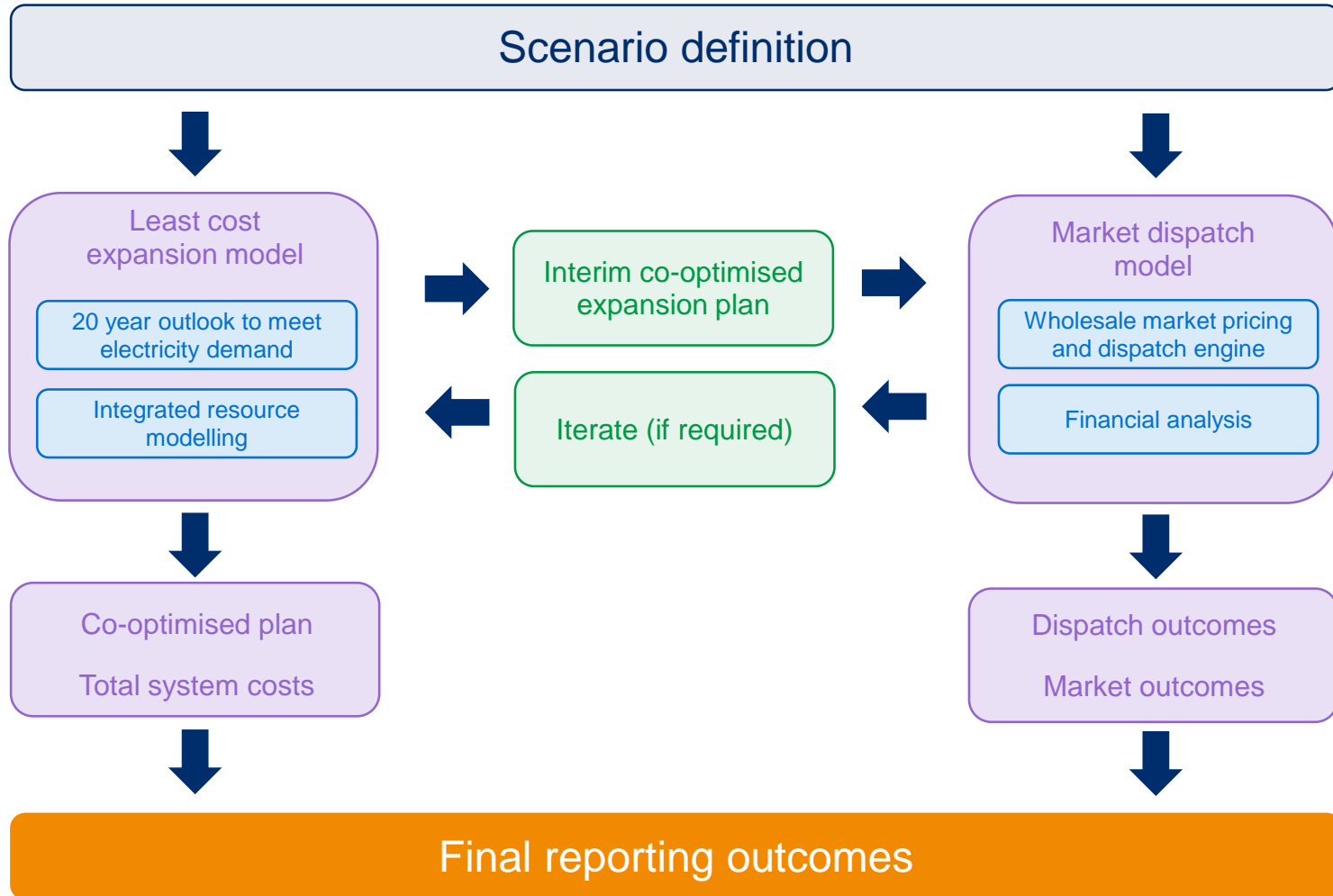
4

Debt funding providers

5

Rates of return

Modelling overview



Next steps



Publish high-level modelling methodology, inputs and assumptions information paper

November 2019



Conduct least cost expansion modelling

November 2019 – January 2020



Provide modelling update to the Energy Transformation Taskforce and Market Advisory Committee

Early 2020

Thank you

Miles Jupp

Project Lead, Whole of System Planning

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08 6551 4710

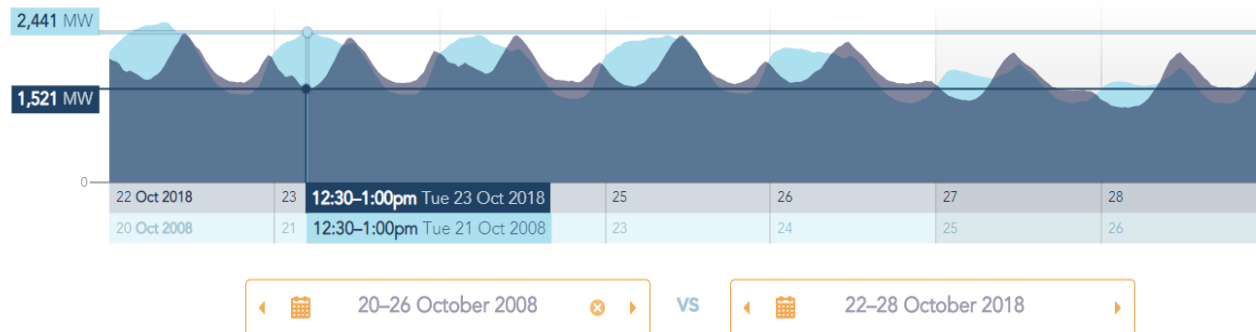


DER Roadmap Update

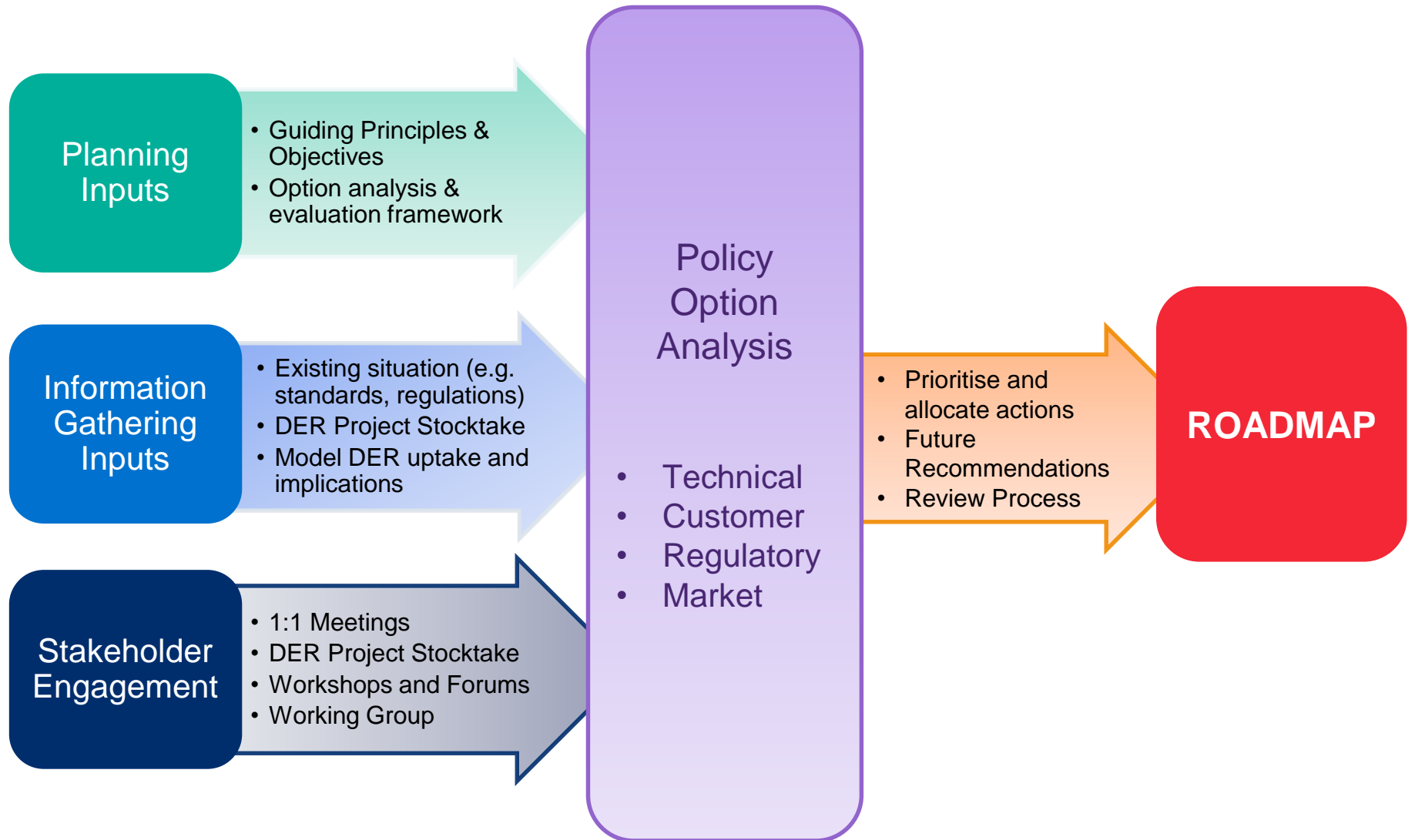
Jai Thomas, DER Project Lead

What is the DER Roadmap?

“An action-oriented plan that seeks to identify the policy, regulatory, customer and technical requirements (and who is accountable for delivering them) to support high levels of DER on the SWIS whilst ensuring safe, secure and affordable electricity supply in the short, medium and long-term.”

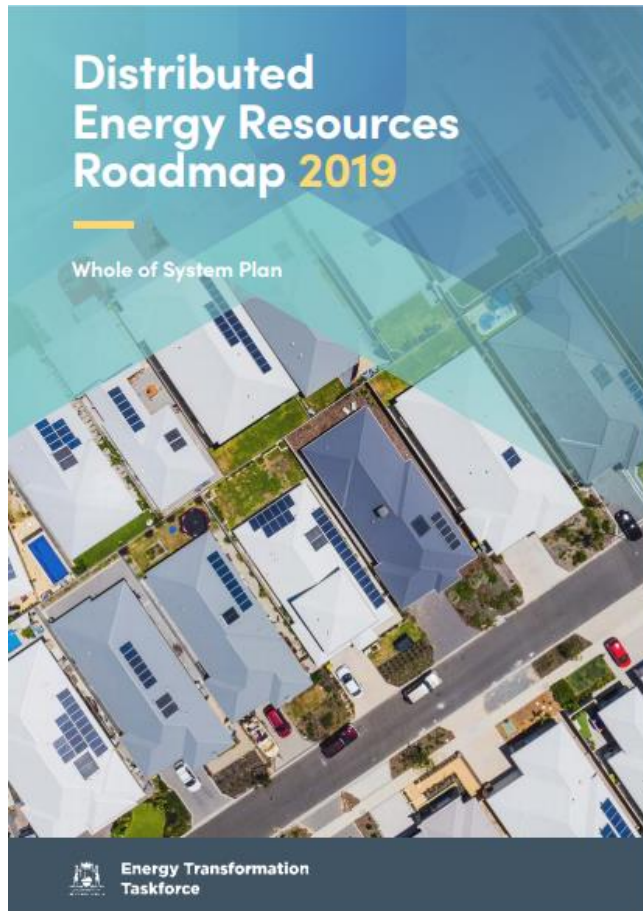


DER Roadmap Approach

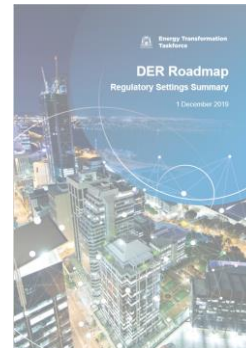


DER Roadmap - Outputs

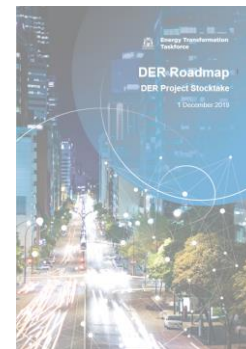
DER Roadmap



Appendices



Regulatory Settings Summary



DER Project Stocktake

Stakeholder consultation



1:1 Meetings

40+ Stakeholder Meetings held to date



Industry Workshop

30 July 2019



Working Group



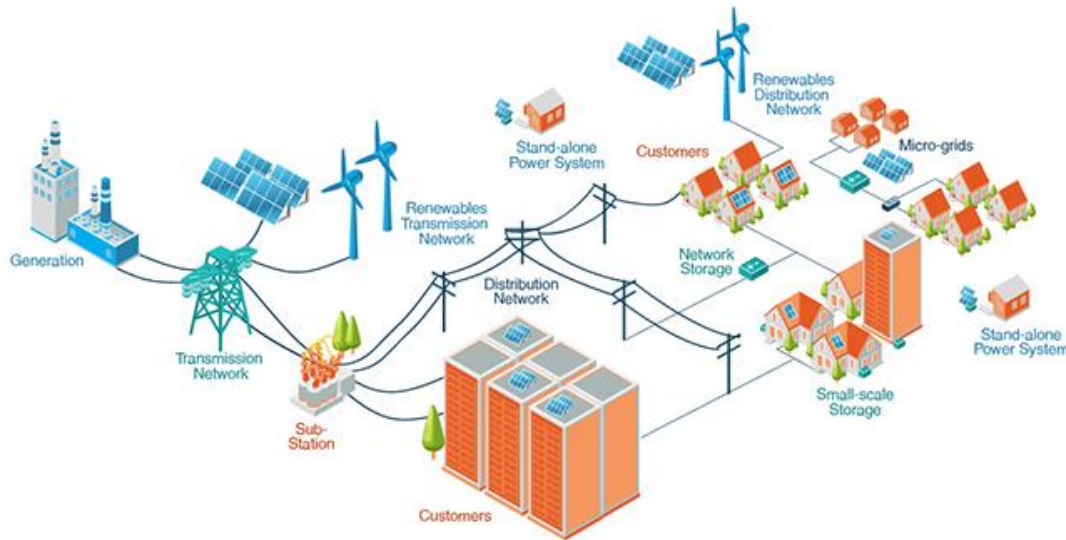
DER Project Stocktake

26 Projects Reviewed

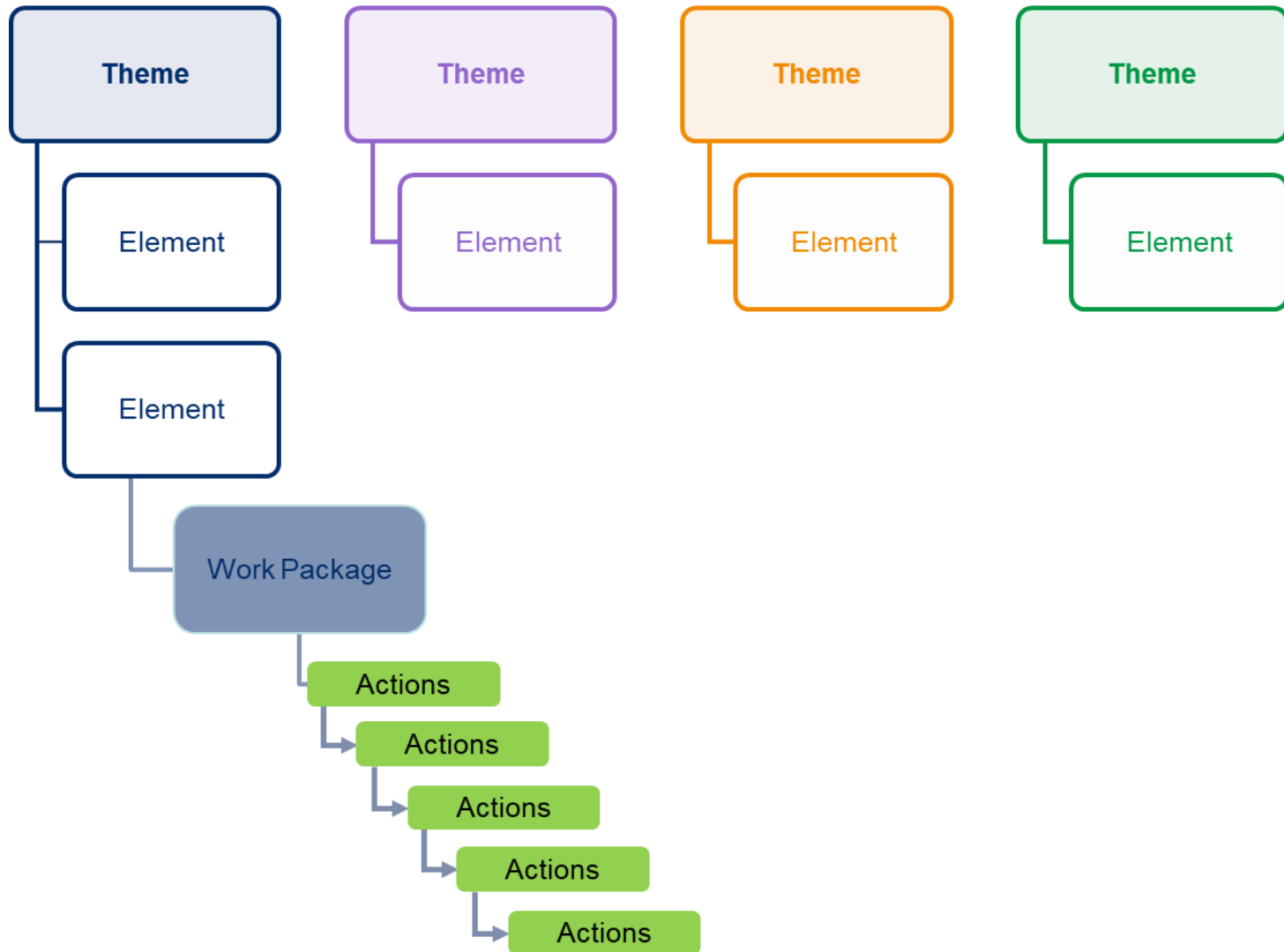
DER Vision

A vision for DER in the SWIS in 2025

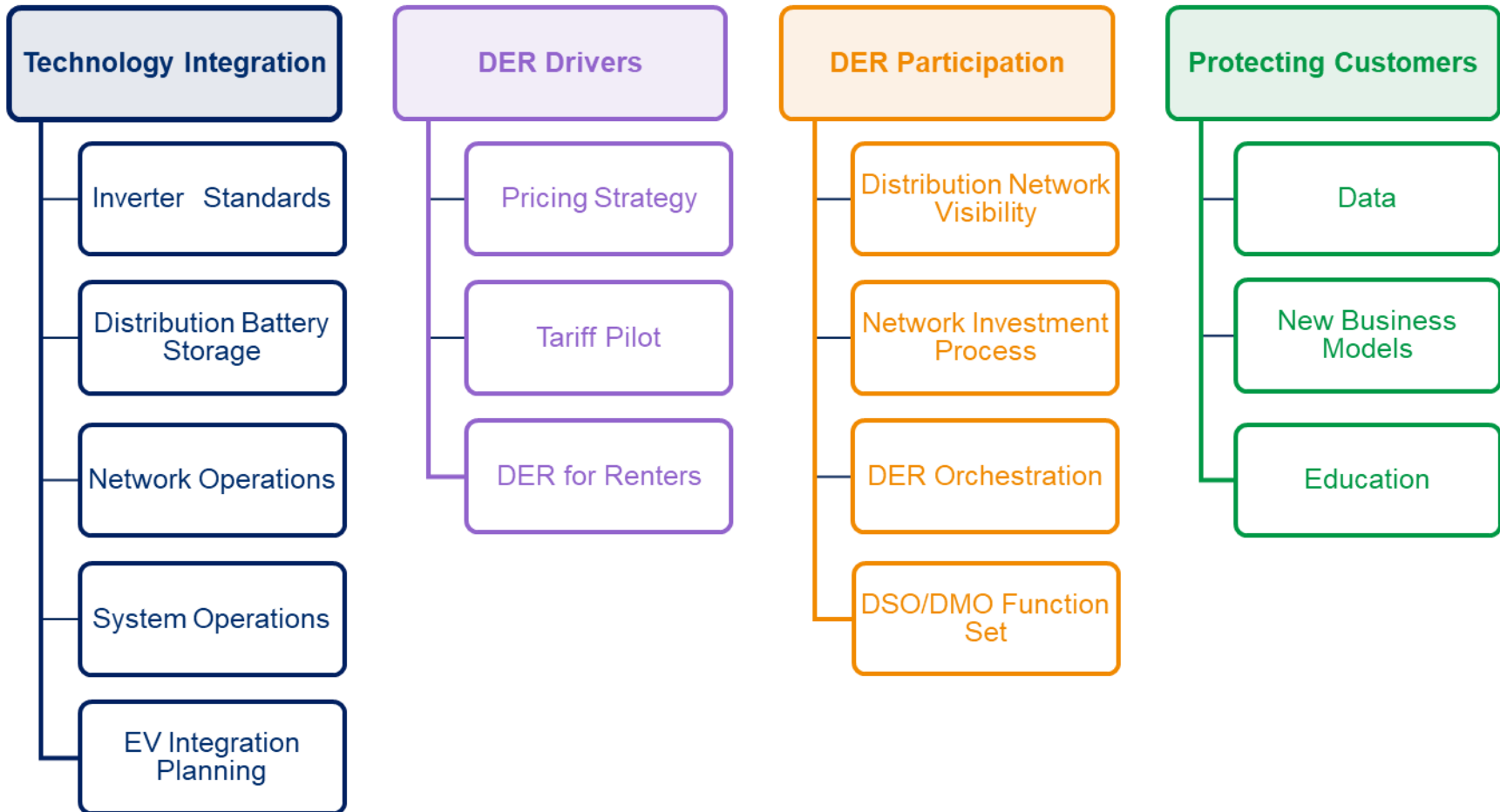
Our vision is a future where DER is integral to a safe, reliable and efficient electricity system, and where the full capabilities of DER can provide benefits and value to all customers.



DER Roadmap – hierarchy



DER Roadmap – themes and elements



Next steps



Industry Forum with Stakeholders on 29 October (this afternoon)

Final meetings with Stakeholders

Energy Transformation Implementation Unit will finalise development of the DER Roadmap actions and recommendation

Thank you

Jai Thomas

DER Project Lead, Energy Transformation
Implementation unit

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Capacity Credit Rights

Stephen Edwell, Chair



The need for reform

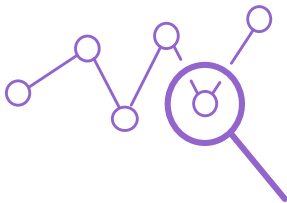
Purpose of the Reserve Capacity Mechanism (RCM)



The RCM is important considering the South West Interconnected System (SWIS) is a small isolated system with high peak demand.

- ✓ Provide consumers with a reliable electricity supply
- ✓ Incentivise sufficient investment in capacity to meet demand
- ✓ Provide generators certainty about revenue adequacy

Issues arising from the transition to a constrained network access model:



Network constraints will be a prominent factor in accrediting and allocating Capacity Credits to facilities



Accounting for constraints may create an uncertain outlook for existing and new investment in capacity



May create incentives for capacity resources to locate where their capacity does not contribute to overall reliability

Capacity credit rights

A Capacity Credit Right is an instrument that:

- protects a facility's allocation of Capacity Credits from displacement, in specific circumstances; and
- defines the network capacity, in MW, available to a capacity resource for the purpose of calculating the Capacity Credits that can be allocated to the facility (up to its Certified Reserve Capacity).



For facilities seeking access in a specific region

Capacity Credit Rights

≤

residual capacity of the network in that region after accounting for rights that have been allocated



Do not affect dispatch or settlement of the energy or essential system services markets

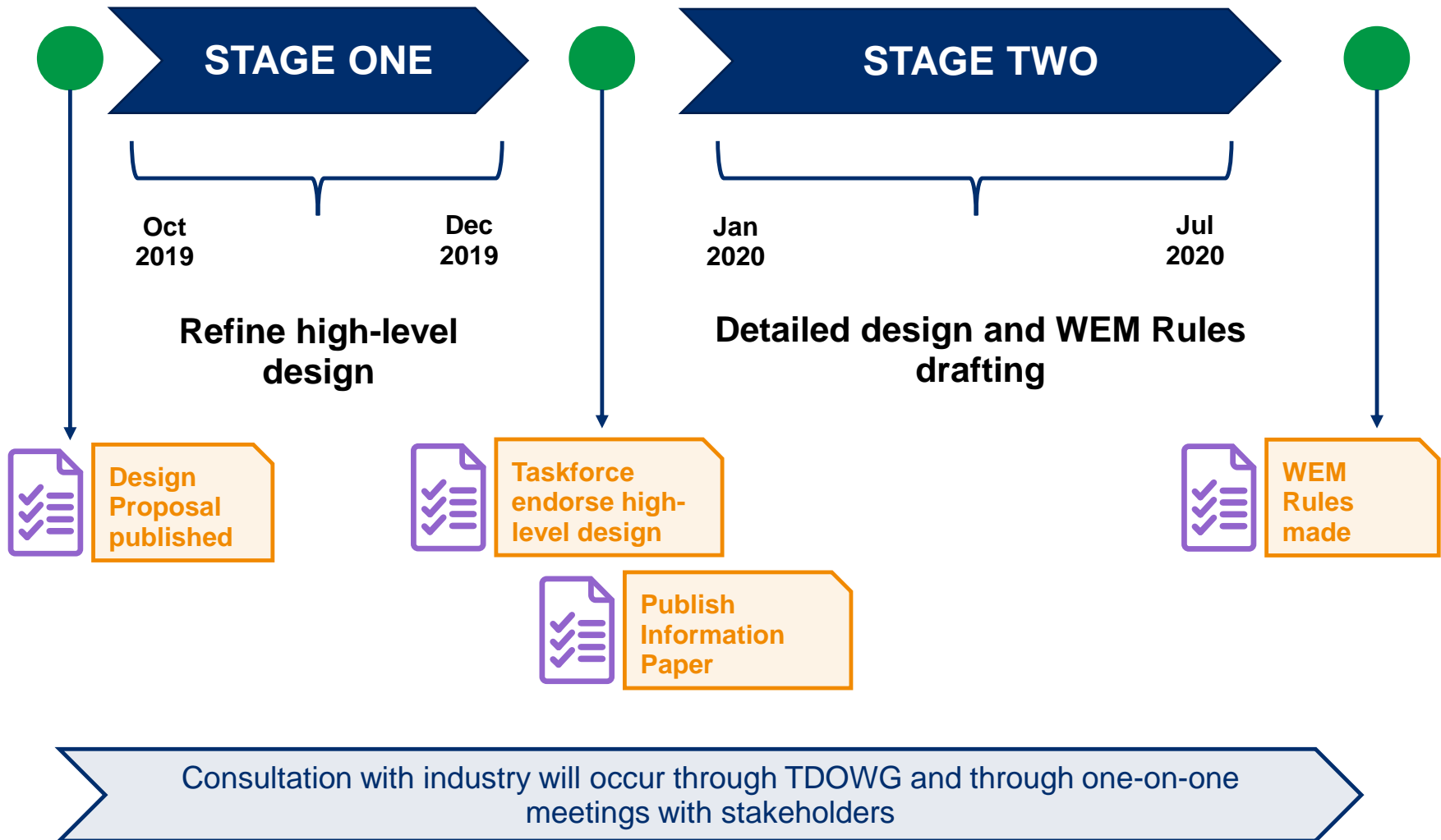
which will operate under the new co-optimised security constrained economic dispatch



Performance-based and will continue for as long as the underlying asset is capable

of providing capacity and contributing to the reliability of the power system

Next steps



Thank you
Questions are welcome

