

Session XII

FLEXFORUM | 

Pre-reading for 7 July 2022 session

Shared 4 July 2022

Workplan on a page – progress at 7 July 2022

		Before times	May	June					July				August				
Stage	Topic		23/05	30/05	06/06	13/06	20/06	27/06	04/07	11/07	18/07	25/07	01/08	08/08	15/08	22/08	29/08
Discover	DER owner perspective		Review input														
	Sector perspective		Review input														
Define	Services & technical requirements – What can flexibility be used for?		Review input					Workshops	Workshops								
Develop	Commercial arrangements		FF 9 on 26/05 Comms & connectivity Terms of trade		FF10 on 09/06 Valuing & rewarding flexibility		FF11 on 23/06 Product templates Connection	Workshops	Workshops	Workshops	FF13 on 21/07 Review input Finalise output						
				FF10 Scoping action plan & next steps		FF12 on 07/07 Outline of Action Plan; barriers		FF13 on 21/07 Barriers & next steps		FF14 Get feedback on Draft Action Plan	Workshops	FF15 Finalise Action Plan & Delivery Programme			FF16 Launch		
Deliver	Begin delivery • Initiate projects • Assess / respond to barriers • Support iteration of Action Plan																

We are here...

These timeframes and deliverables are presented on a best endeavours basis. The main uncertainty relates to the time required to seek and address feedback

Session overview – topics and decisions

Six items

1. **Scoping the Action Plan – outline of structure and content**
 - a) Decide the structure and content of the Action Plan
2. **Barriers to action – practical and regulatory barriers to transacting flexibility**
 - a) Initial discussion on practical and regulatory barriers to action
3. **End-to-end journey for a flexibility provider**
 - a) Provide feedback on reframed end-to-end journey for a flexibility provider
4. **Scoping next steps – principles for a robust delivery model**
 - a) Consider principles and functions for a robust multi-year work programme to deliver the Action Plan
5. **Workplan, engagement and communications**
 - a) Scope and timing of 'launch' of Action Plan
 - b) Update on progress with workplan tasks
 - c) Update on planning for workshops
 - d) Update on engagement
6. **Administration – governance, budget and funding**
 - a) Update on administration, governance and budget
 - b) Wider industry involvement

Scoping the Action Plan – outline of structure and content

The annotated outline of the Action Plan (see separate document) has 5 main sections and 3 appendices

- **Context** – flexibility is a key enabler of affordable, reliable, faster electrification and decarbonisation
- **Purpose & Approach** – the purpose of the plan and approach delivery (collaboration, action & accountability)
- **A starting point for transacting flexibility (or a minimum viable product)** – the end-to-end journey for a flexibility provider to identify what services it can provide, to who, where, where, how, and for how much
- **Implementing the minimum viable product** – practical outcomes, and work(streams) required, specifying the actions and research questions
- **Coordination & Engagement** – interaction with others working on flexibility-related activities and wider engagement
- **Making it happen** – describing the approach to monitoring and sharing progress and updating the Action Plan
- Appendix 1 – detailed description of the end-to-end journey for a flexibility provider, the actions required for each step and the underlying insights and conclusions
- Appendix 2 – list of projects FlexForum are considering/developing to implement the minimum viable product and test specific research questions
- Appendix 3 – list of practical and regulatory barriers to transacting flexibility

The notes section of this page references a summary of what the group requested in session 10. More detail is available in the [session 10 notes](#)

Barriers to action – practical and regulatory barriers to transacting flexibility (1)

10 barriers have been listed in the risk and issues log – there are surely more.

Barrier	Consequence	What good looks like
Visibility of low voltage network conditions is limited	DER Owner/investor can not understand where DER is required, and if investment will be impacted by grid voltages.	Ensure voltage information is available to DER investor and/or their advisors.
Visibility of low voltage network conditions is limited	EDBs may not have adequate geo-spatial maps of LV network assets (including asset locations, ICP phasing, asset condition etc.) to match against the associated LV network conditions which would allow the targeting of localised DER services	Enable investment in digitalisation of EDB assets and network configurations. Ensure ongoing support provided to account for ongoing changes to network.
Inefficient market design results in over-use of emergency response/protection/load management systems	Distorted market conditions and impaired opportunities for flexibility providers	Transparent operating decisions and market development needed to ensure market mechanisms are maximised and protection/control is a genuine last resort solution
Curtailment of DER due to network voltage	Increased risk to investment case for DER	Open up network data to third parties
Different methodologies for incentivising distribution flexibility in place across NZ (e.g. distribution pricing and flexibility markets)	Reduced participation from DER owners due to complexity	
Value of services not visible to DER owner/operators	Underinvestment in DER/flexibility	Capacity maps being developed by EDBs. Better signposting of flexibility opportunities required

Barriers to action – practical and regulatory barriers to transacting flexibility (2)

Barrier	Consequence	What good looks like
Flexibility can't be accessed because devices do not have 'smart' functionality	Lack of flexibility leading to higher overall system cost	Consider equipment standards/requirements, while managing risk of stifling innovation
Difficult for DER investor to determine the capital cost savings of installing DER to reduce connection capacity capex and opex.	Favours network solution over DER which may not be the most efficient for the customer.	Consider ensuring process for investor to access information on cost of different connection sizes and grid capacity.
Non-standardization of a communication protocol across the country/EDBs.	Creates barriers to participation and/or increased costs of participation.	Standardisation of a communications protocol nationally
Communication protocol selection	Protocol may prevent/limit value stacking or may limit the commercial models that can be realised	Careful selection of standard with input from all stakeholders
One-to-one customer/trader relationship	Limits the ability and incentive for parties to invest in flexibility by restricting the opportunity to maximise value	Enable multiple trading relationships

End-to-end journey for a flexibility provider

The initial end-to-end product and process description has been reframed following the road test to reflect the end-to-end journey for a DER owner or flexibility provider. There are four stages:

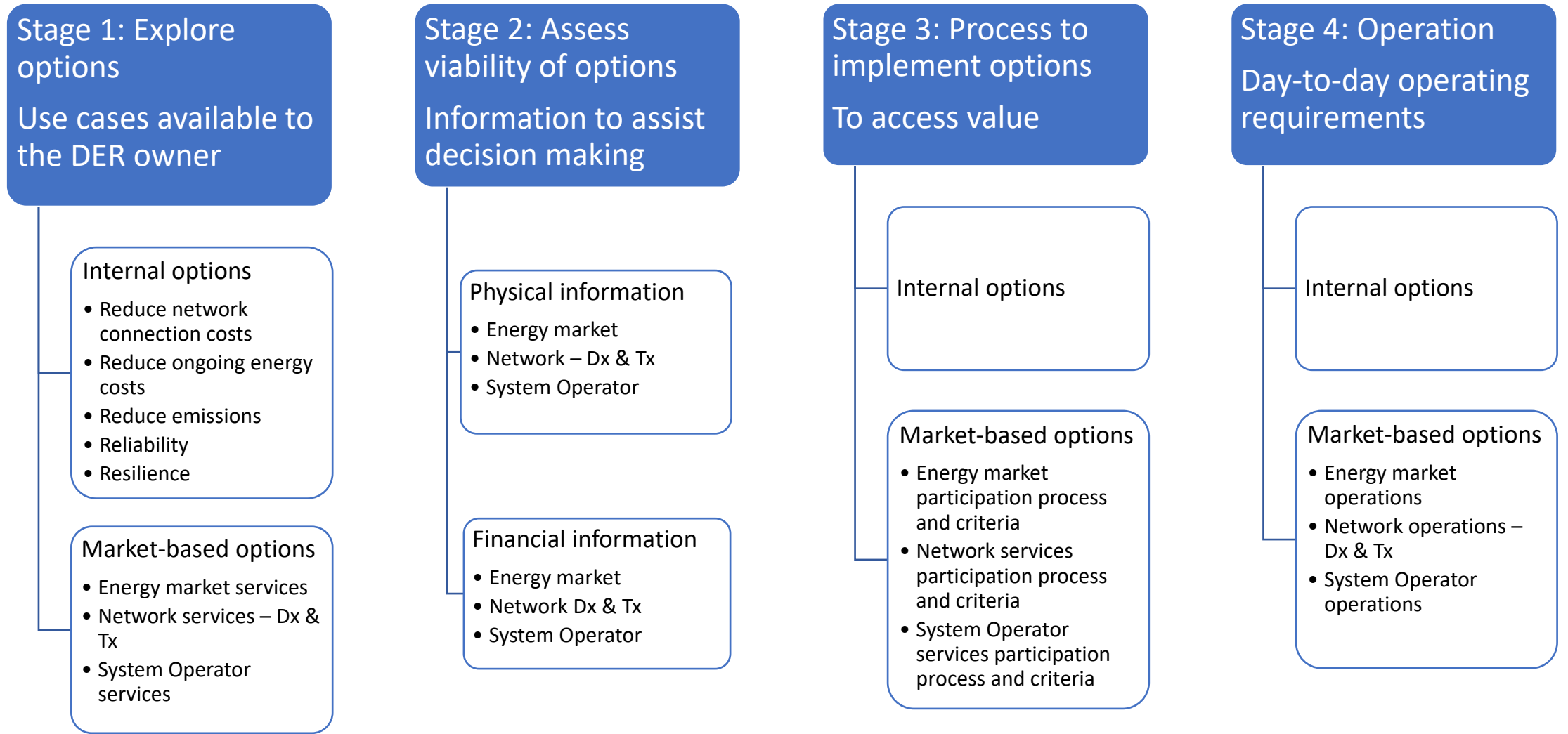
- **Exploring options:** the use cases available to the DER owner/flexibility provider given their circumstances
- **Assessing viability of options:** information required by the DER owner for decisions about applying each use case
- **Process to implement options:** implementing each use case will require a specified process and criteria
- **Operation:** the day-to-day operating requirements for the use case

The reframed approach takes the perspective of a flexibility provider (individual or aggregated) and their outcomes and experience, rather than aligning to an industry-like RFI/RFP view

The journey provides the basis for the minimum viable product & the practical, scalable, least-regrets steps outlined in the Action (Flexibility) Plan

- each outcome and step of the journey requires specific action on the part of an industry participant, eg, for the flexibility provider to access information on network headroom requires a network operator to produce that information. The minimum viable product in the Flexibility Plan represents a starting point for commoditising what services that DER can provide, to who, when, where, how and for how much
- each specific action requires specific capability and practices which are either already available or need to be developed, eg, to produce information on network headroom, a network operator must have relevant network visibility (and this capability is available for higher voltage network layers, but not the lower voltage layer).

End-to-end flexibility journey: from the perspective of a DER owner or flexibility provider



Stage 1: Explore options

Use cases available to the DER owner

Internal options

- Reduce network connection costs
- Reduce ongoing energy costs
- Reduce emissions
- Reliability
- Resilience

Market-based options

- Energy market services
- Network services – Dx & Tx
- System Operator services

Internal options: a household or business can use DER to achieve specific outcomes based on their preferences, desired outcomes and circumstances

1. Reduce network connection costs
2. Reduce ongoing energy costs
3. Reliability
4. Resilience
5. Reduce emissions

Information is required from the electricity sector to decide on options: move to Stage 2

Market-based options: a household or business can maximise the value from DER by generation or supplying flexibility

- Energy market services
- Network services – Dx & Tx
- System Operator services

Information is required from the electricity sector to decide on options: move to stage 2

Stage 2: Assess viability of options

Information to assist decision making

Physical information

- Energy market
- Network – Dx & Tx
- System Operator

Financial information

- Energy market
- Network Dx & Tx
- System Operator

Physical information: Energy Market

- [?]

Physical information: Network

- Current & forecast network headroom – Dx & Tx
- Connection requirements and network access options – Dx
- Network planning information, ie, plans to manage actual/forecast constraints
- Network (Dx & Tx) policy and criteria for using flexibility, including services which can be delivered with flexibility

Physical information: System Operator

- [?]
- SO policy and criteria for using flexibility, including services which can be delivered with flexibility

Financial information: Energy Market

- Current and forecast spot prices
- Current and forecast retail tariff structures and options

Financial information: Network Dx & Tx

- Network pricing structure, pricing levels, and long-term pricing strategy
- Flexibility payment structures and pricing ranges

Financial information: System Operator

- [?]

Stage 3: Process to implement options

Internal options

Process to implement internal options

- Distributor connection application process and decision. This determines amount of network access (ie, static or dynamic envelopes), potential to use DER (eg, extent of possible PV or load curtailment), upfront connection costs, type of DER investment, and ongoing network charges
- Retail market interface. This determines the nature and extent of participation – ie, single or multiple traders – including retail pricing options (and ongoing energy costs), ongoing revenue from generation, and options to supply flexibility

Market-based options

- Energy market
- Network Dx & Tx
- System Operator

Process(es) to implement market-based options

Energy market

- ...[?]

Network Dx & Tx

- Service parameters
- Procurement parameters
- Commercial parameters

Financial information: System Operator

- [?]

Stage 4: Operation

Day-to-day operating requirements

Internal options

Internal options: Day-to-day operating requirements

- [?]

Market-based options

Market-based options: day-to-day operating requirements

Energy market

- ...[?]

- Energy market

- Network Dx & Tx

- System Operator

Network Dx & Tx

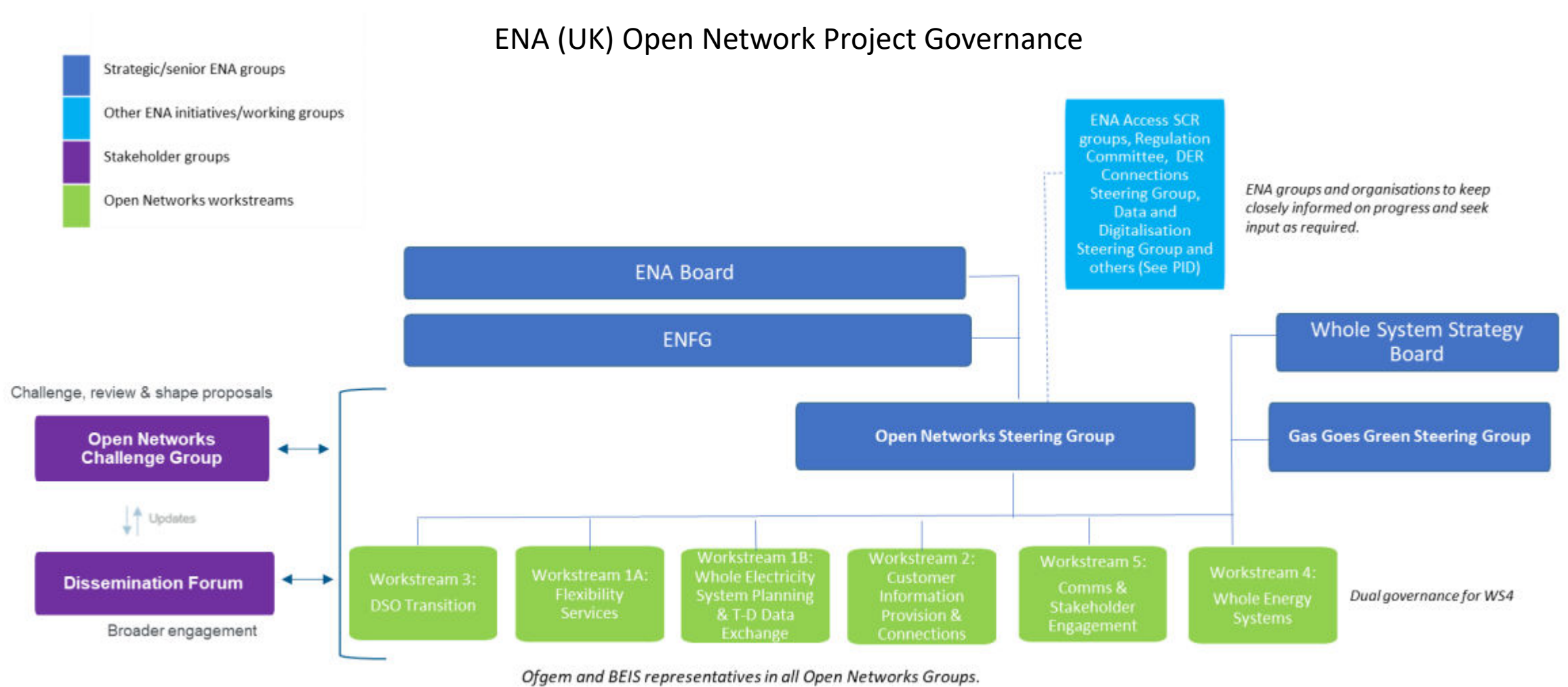
- Scheduling and notification, including ability to opt-in/out
- Instructions
- Coordination between Dx, Tx and SO
- Measurement / communication / verification of response
- [?]

System Operator

- [?]

Scoping next steps – principles and functions of a robust delivery model

What might this look like in an NZ context?



Balance long-term strategy with quick wins to keep momentum

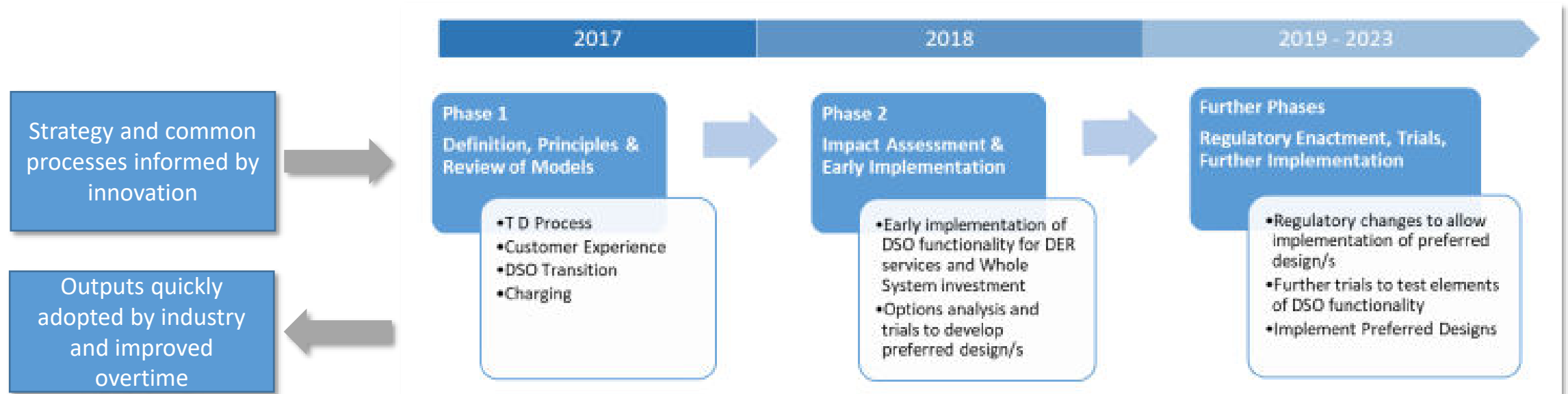
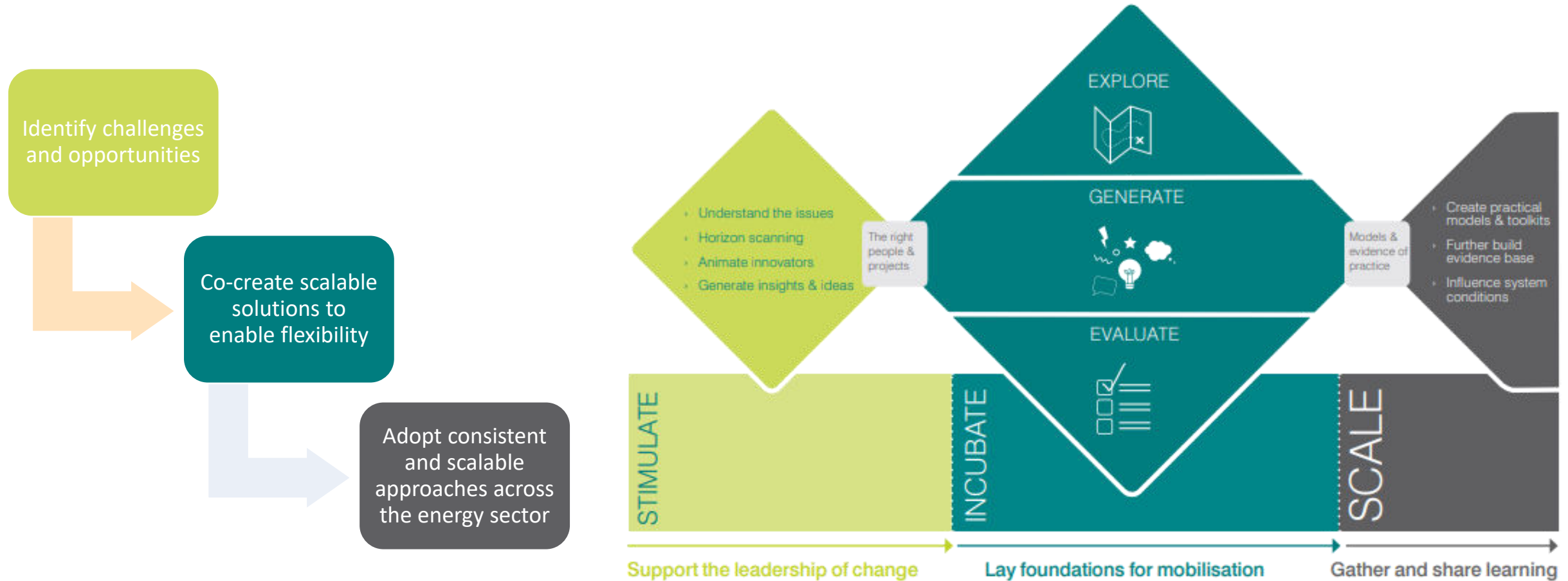


Figure 1 Short/Medium/Long-Term Open Networks Programme Phases

Triple diamond design thinking – this should be familiar to the group. It's similar to the discover-define-develop-deliver model used to date



Workplan, engagement and communications

Scope and timing of 'launch' of Action Plan

Update on progress with workplan tasks – see page 11

Update on planning for workshops

Update on engagement – see page 12

Key tasks, actions and timelines - update

Task	Activity	Responsible	Progress
1. Valuing & rewarding flexibility	Identify: <ul style="list-style-type: none"> How much is the buyer prepared to pay the provider? How does the provider get paid for the service they are providing? 	<ul style="list-style-type: none"> Network perspective: Evie, Scott, James Market perspective: Buddhika, Fiona, Jason, John 	<ul style="list-style-type: none"> DG, market & network perspectives shared 9 June A collated view needs to be developed
2. Contracting arrangements	Identify: <ul style="list-style-type: none"> Headline terms Terms which materially impact transacting flexibility 	Secretariat	Initial draft shared 28 June to James, Fiona, Scott. Discuss with the group at 21 July session
3. Communication, measurement & validation	<ul style="list-style-type: none"> Information / data exchanged when sending/receiving instructions Measurement and validation methods 	Terry, Matt, Quintin & Mike	Workshops being scheduled
4. Product templates	Develop and refine templates for each service	Secretariat	End-to-end journey raised at this session (item 3)
5. Connection requirements	Describe interaction between physical and contractual aspects	Secretariat coordinating input from Shay, Glenn, Evie, Scott, Eric	Document to be revised following feedback
6. Pre-procurement information – planning & operational information	<ul style="list-style-type: none"> Refine planning & operational information (tables 1 & 3 of first paper) Closely related to task 4 	Secretariat, John, Fiona.	2 lunchbox sessions 5 & 8 July with community/flexibility providers

Engagement – interaction since the previous session

Who	What
EECA	Invite to EECA to attend a session to share how EECA might be able to partner to practically test use of flexibility
Stakeholder conversations / workshops	2 sessions on 5 & 8 June with community & flexibility provider interests
System Operator	System Operator is scoping its flexibility-related activities for the coming years. It wanted to know: 1. what do/will you need from the system operator to help meet your needs? 2. Where do you see the biggest impacts on the ability to operate the system reliably and efficiently? During the transition to increased renewables? In a future with increased (100%) renewables? 3. How should the System Operator get involved?

Administration

- Budget update
- Managing wider industry involvement
- MBIE interaction