

Identifying the practical steps to make the most of DER & flexibility services

Introduction and establishment session: purpose and process for a series of workshops on integrating DER and using flexibility services

17 December 2021

Welcome, introductions and ground rules

Thanks for attending this session - tell everyone who you are

We have 90 minutes - questions are the point of this session, but let's stay focused

We want input from all of you to what this looks like and what we do

Session focus: purpose and process

Purpose

Purpose of this group

Reason for the group

Goal of the group and what success looks like

Process

Process and approach

Your commitment

How to describe the group

Workshop topics and outputs

Outcome of this session

At the end of this session, we want to be able to say...

1. We all agree on the purpose of the group
2. We all agree the goal of the group is worthwhile
3. We all agree on the approach and process for achieving the purpose and goal
4. We all agree the workshop topics provide a reasonable initial structure for the workshops
5. We all commit to the entire series of workshops

Full agreement through the process isn't necessary or expected. Disagreement or uncertainty highlights things which need further consideration and testing

Context – 2 minutes each from Terry, Mark & John on why they are here

John Campbell, CEO & Founder, Our Energy

Mark Toner, Chief Public Policy Officer & Regulatory Officer, Vector

Terry Paddy, Managing Director, Cortexo

Purpose

Purpose of this group – identify the practical requirements for integrating DER

The purpose of this group is to identify the practical requirements to effectively integrate distributed energy resources (DER) into distribution networks, wider electricity supply chain and markets to produce:

1. A practical plan for the electricity sector, government, regulators and DER providers to work from
2. A specific set of hypotheses or ideas to be tested through coordinated pilots

Accelerating electrification and decarbonisation requires balancing prompt action and building consensus. This group and process are intended to strike a reasonable balance between talking and (least regrets) doing.

Reason for the group – do we really need another working group?

The group will complement other work planned or underway by producing a practical and actionable plan as soon as possible

- Builds on IPAG advice, the ENA Network Transformation Roadmap, the EV Connect Roadmap, South Island DSO group
- Complements the Electricity Authority Open Network and Security and Resilience work programmes
- Complements the ComCom IM, DDA4, and Impact of Decarbonisation on Lines Services Reviews

The point of difference of the group is:

- **Collaborative.** Product of DER owners, network operators, customer-facing electricity services suppliers, and software & hardware suppliers
- **Practical.** Focused on the practical steps for maximising the available value from DER, now and in the future (not bounded by existing regulatory settings)
- **Actionable.** Provides a common starting point for acting and setting priorities (including for regulatory change)
- **As soon as possible.** We want a completed outcome by June 2022

Goal of the group

We want to be able to say:

- **We have identified the initial practical and scalable steps required to effectively integrate DER** into distribution networks, the wider electricity supply chain and markets
- **These initial steps provide a plan for the electricity sector** to act on to maximise the value of DER available to network users (ie, households and businesses), electricity networks and the wider electricity supply chain, and accelerate the transition to a safe, reliable, and affordable electricity system which supports decarbonisation
- **The plan was developed through collaboration across the electricity supply chain.** Our group includes network operators, customer-facing suppliers, electricity producers, software and hardware suppliers, and the households and businesses which will own DER. A much wider group contributed to the conclusions
- **This plan sets the stage for industry, government and regulatory decision-makers** to accelerate electrification and to maximise the value of DER available to network users and the wider electricity system, now and in the future
- **We will begin implementing the plan** with a series of trials to test the findings in the real world.

Process

Process and approach: we must all learn new things through the process

A durable outcome requires recognising the interests of each part of the electricity supply chain, DER owners, and consumers and adopting a common approach and framework

active engagement, sharing expertise and perspectives, and welcoming constructive disagreement are central to success

A series of workshops will be used to explore the practical requirements for integrating DER

1. The “board” of 12 people (you) with diverse experience from across the electricity sector. Each “board” member commits to the full workshop process
2. Additional experts and guests will be invited to support the discussions
3. The workshops will provide a safe space to test ideas and positions. The workshop process will be supported by an independent secretariat. Each session will be led by an independent facilitator
4. Planned outreach efforts:
 1. The workshop materials and outcomes will be shared (nothing will be attributed to a specific person). Public comments will be welcomed via the secretariat
 2. Open forums at key points during the workshop series to bring others along and get wider input on the findings to date. Targeted surveys and similar options could also be used
5. The group’s conclusions will be documented and shared publicly without attribution to any one individual

Process and approach: your commitment

Your time between early February and 30 June 2022

- this *indicative* timeline starting 2 February and ending 27 April has a mix of 9 fortnightly in-person and virtual sessions , including two open forums (realistically more sessions may be needed)



The time of specialists and experts within your organisation to provide context and advice on specific topics and questions

A contribution to secretariat and overheads, based on organisation size

Having additional support roles will ensure we are efficient and successful

Independent facilitation - assist discussion, debate and involvement, support momentum

Secretariat - meeting preparation materials, documenting outcomes, supporting collaboration and engagement

Outside speakers - additional perspectives and experts from inside and outside member organisations (international?) at relevant sessions

What additional contribution - financial or in-kind - is reasonable to expect from participants?

- Indicative estimate for the support roles across the whole process is ~60 days and up to a total of \$120,000 (but the process and outcomes are what we're discussing today so estimate could change)
 - Ara Ake is considering support (other industry participants or government agencies?)
- Want participants invested in the process and outcomes, but not create barriers to participation

How should we describe the group?

What name and acronym do you want to use?

Here are some options you can probably improve on...

- FlexForum
- FIG – Flexibility Industry Group
- DERFG – Distributed Energy Resources & Flexibility Group
- DER Partnership Accelerating Customer Take-up (DER PACT)
- DER Alliance
- TeamFlex

There are 10 proposed workshop topics designed to focus on specific areas of the challenge, and build upon each other

1. Set the scene

2. Network technical limits and interaction with connection requirements

3. Network planning and operation

4. DER capability – what is it & what can it do?

5. Flexibility product specification

6. Visibility and information

7. Requirements for deploying flexibility services

8. Methods for valuing and compensating flexibility services

9. Contracting and terms of trade

10. Agree on the plan

See Appendix A for more detail on each topic

Possible outputs from the workshops

The workshop topics are intended to provoke discussion in the group to consider the practical requirements of integrating DER and using flexibility to deliver three broad outputs

- a description of connection requirements for DER
- a description of the plausible range of uses of DER and flexibility services
- a description of the practical requirements for transacting flexibility from DER

We think these outputs will identify the practical steps the electricity sector needs to take

We think these outputs also will inform development of multi-party trials which advance DER integration and use of flexibility services

end

Appendix A. More detail on the workshop topics

1. **Set the scene.** Consider the plausible scenarios, implications and timescales of electrification and uptake of DER to confirm the topics
2. **Network technical limits and interaction with connection requirements.** Consider the physical constraints (eg, thermal and voltage limits) which determine network operation, how these influence connection to and use of the network, and the reliability and quality outcomes experienced by network users
3. **Network planning and operation.** Consider the network planning process, how network operators decide how and when to respond to actual and forecast network conditions, and thinking on the challenges and opportunities arising from electrification and uptake of DER
4. **DER capability.** Consider the capability of different DER, both individually and in aggregation, and the known or assumed implications for network use
5. **Flexibility product specification.** Identify what distribution, transmission, system and market conditions could be managed using flexibility from DER and identify the minimum viable flexibility product(s)
6. **Visibility and information** for matching supply of, and demand for, flexibility products. Consider the minimum requirements for a distributor (or other buyer) to identify and signal expected or actual need for a flexibility product, taking account of things like network visibility and providing flexibility providers with the confidence to invest
7. **Requirements for deploying flexibility services.** Consider the minimum viable requirements – operational visibility, communication, and dispatch capability etc - required to practically deploy and use flexibility from DER
8. **Methods for valuing and compensating flexibility services.** Consider the methods available for valuing and compensating flexibility from DER
9. **Contracting and terms of trade.** Consider the basic terms of trade and key commercial terms required to enable transactions between DER owner/aggregator/network operators, particularly considering appropriate allocation of risk and cost
10. **Agree the plan.** Confirm the conclusions and discuss options for product testing

Appendix B. Reference points for workshop topics

There are many examples of plans to integrate DER from Aotearoa New Zealand and overseas. Here are four, ordered by recency of publication.

1. United Kingdom [Transitioning to a net zero energy system: smart systems and flexibility plan 2021](#), July 2021
2. Wellington Electricity, [EV Connect draft roadmap](#), June 2021
3. Western Australia [Distributed Energy Resources Roadmap](#), December 2019
4. IPAG [Advice on creating equal access to electricity networks](#), April 2019 & ENA [Network Transformation Roadmap](#), April 2019 (these two documents advise essentially the same things)

Comparison of main themes from 4 plans to integrate DER

UK Smart Systems & Flexibility Plan 2021	WE EV Connect Roadmap	WA DER Roadmap	IPAG/ENA Equal access / NTR
Flexibility from consumers: smart technology, flexibility providers, cyber security, consumer protection & engagement	Customer value: connection protocols, equipment standards, data and information needs, EV & DER services and technology (contracting and pricing)	Technology integration: DER performance, network visibility, market visibility, power system operations	Open network framework: network access; flexibility markets, use of flexibility for network support
Flexibility on the grid: integration and use of storage, including pricing signals and commercialisation; transmission interconnectors	Secure & affordable network: LV visibility, demand management capability & DSO, platform technology	Tariffs and investment signals: price signals & network planning, coordination of flexibility markets, metering	Investment and cost-reflective pricing: price signals, network planning and investment incentives (including flexibility from DER)
Flexibility markets: flexibility services product standards, contracting and valuation methods, coordination of dispatch, pricing signals	Policy & regulatory alignment: policy settings, funding, oversight and accountability	DER participation: access markets, incentives on networks to use DER, connection requirements, dispatch of DER, product definitions & valuation, aggregators	Standard technical arrangements: DER connection codes, equipment standards; network engineering, cyber security
Digitalising the system: reducing barriers to digitalisation - scale of change, incentives to support open data, and (lack of) shared infrastructure		Customer protection and engagement: market entry, privacy and data management, including access by 3 rd parties	Network operation and capability: LV monitoring and visibility, network operation (stability); availability of network information
			Capability: network performance; contracting for network support, asset management practice