

To: [Distribution.feedback@ea.govt.nz](mailto:Distribution.feedback@ea.govt.nz)

# FlexForum feedback on updating the regulatory settings for distribution networks

The FlexForum is an industry-led association of organisations from across the electricity eco-system which want to accelerate progress through practical action to ensure distributed energy resources (DER) and flexibility are available to:

- support affordable and reliable operation of the electricity market and power system
- enable accelerated electrification by households and businesses as part of the transition to a net zero emissions economy.

Flexibility is our focus because it is central to electrification and decarbonisation. Encouraging the supply and use of flexibility provides households, businesses, communities and the electricity supply chain with more capability and options to accelerate electrification and decarbonisation and ensure it occurs while maintaining and improving reliability, affordability of supply and consumer choice.

*Households, communities and businesses across Aotearoa New Zealand are starting on an electrification journey which will result in the proliferation of electric vehicle (EV) chargers, local generation, battery storage, electric space and water heating, electric motors and smart devices.*

*All of these are DER and can be flexible by responding to signals and events, such as price signals or ancillary services.*

*Flexible DER can – with the right frameworks and relevant capability in place – provide a range of benefits to households, businesses, communities, distribution and transmission networks and the electricity market.*

Source: FlexForum, Flexibility Plan 1.0

The FlexForum has 22 participants and four observers<sup>1</sup> and is setting itself up to support the coordinated, collaborative learning-by-doing which is essential for Aotearoa New Zealand to electrify and decarbonise while maintaining and improving the reliability and affordability of electricity for households, businesses and communities.

You can contact us at [info@flexforum.nz](mailto:info@flexforum.nz) with any questions and to arrange any further discussion of the FlexForum perspective on how the Electricity Authority (the Authority) can realise its vision for distribution networks, and more broadly to support practical efforts to maximise the value and optimise the use of DER and flexibility.

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<sup>1</sup> You can find the list of FlexForum participants and observers on page 8.

## Our main points

This response to the Authority's 22 December 2022 issues paper: *Updating regulatory settings for distribution networks* does not explicitly address the questions posed in the Issues paper. Rather, the response provides the FlexForum perspective on how the Authority can realise its vision for distribution networks "...to support innovation, promote competition and consumer choice in contestable markets such as flexibility services, and maintain reliability and security of supply." The FlexForum considers that the Authority should:

- **Ensure issues are considered in a coordinated whole-of-system way.** Our Flexibility Plan<sup>2</sup> provides a starting point for coordinating the complex and interrelated set of steps needed to develop the capability, practices and processes required to use and transact flexibility. Explicit and transparent coordination between the Authority and Commerce Commission is particularly important.
- **Provide regulatory agility by supporting learning-by-doing to inform changes to regulatory settings.** The first step is to produce a framework for parties to request regulatory exemptions for learning-by-doing. The framework should be produced quickly and be allowed to evolve with experience. The exemption request recently made by Kāinga Ora and Ara Ake provides an excellent starting point for designing and testing the exemption process.
- **Dedicate resources to triaging regulatory barriers** and working proactively and promptly with participants to identify whether the exemption process could be used to resolve the issue, or if a change to the Electricity Industry Participant Code (the Code) is even needed.

There are five areas which the Authority should prioritise for immediate focus and action.

1. making better use of available distribution network capacity
2. valuing, pricing, and paying for flexibility
3. communication and connectivity of flexibility resources
4. contracting arrangements, particularly risk allocation and management
5. learning-by-doing and regulatory barriers.

Prioritising these topics does not mean the Authority must do or lead the work. At this stage, the Authority can be most effective by encouraging and supporting industry-led efforts with learning-by-doing to explore options and identify areas for standardisation of processes and practices. FlexForum will publicly share a more detailed view of the steps in the Flexibility Plan which are on critical path and are not getting sufficient attention in April 2023.

## The Flexibility Plan provides an initial list of the steps needed to use and transact flexibility

FlexForum produced the Flexibility Plan 1.0 in August 2022 to provide an initial list of the practical, scalable and least-regret steps needed to enable households, businesses and communities to make choices which maximise the value of and optimise the use of DER and flexibility.

The Flexibility Plan reflects a whole-of-system view of the actions required by the electricity sector, policy and regulatory bodies if we are to truly use and transact flexibility.

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<sup>2</sup> You can read and download Flexibility Plan 1.0 on the [FlexForum webpage](#).

In short, the Flexibility Plan provides the starting point for coordinating a complex and inter-related set of steps requiring input from the electricity sector, the Authority, Commerce Commission, other decision-makers and consumers to create the framework for a neutral, accessible, shared marketplace for flexibility. No single party acting alone can maximise or optimise the benefits of flexibility.

### **The Authority must ensure the issues are considered in a whole-of-system way**

Just as the future electricity system will require different entities in the value chain to work together as never before, developing the capability, practices and processes required to use and transact flexibility relies on the Authority, Commerce Commission, and other decision-makers to coordinate and work together. Explicit and transparent coordination between the Authority and Commerce Commission is essential given the critical path starts with ensuring distributors have the necessary incentives and funding to invest in digitalisation and monitoring capability.

## Regulatory processes need to adapt to include material support for learning-by-doing

The Flexibility Plan 1.0 highlights how much learning is needed to realise the full value of DER and flexibility. This includes ensuring the right regulatory settings are in place to promote competition and access to the distribution network. More broadly, households, businesses and communities must be enabled to make choices which maximise the value of flexibility and to integrate flexible DER efficiently and equitably into both the physical and market systems that deliver electricity.

Learning-by-doing is about how to connect, use and transact flexibility, moving from exploratory pilots and trials to product testing and commercialisation. It is essential to identify and develop the capability, technical requirements, processes and practices which will underpin a neutral, accessible, shared marketplace for flexibility.

We strongly support the Authority's preference *"to move at the speed of the fastest adopters, not the slowest, and be able to pick up pace as the market matures. Therefore, regulatory flexibility is needed to allow participants to test and develop new services without regulatory restrictions that impede their progress."*

### **The Authority can support learning-by-doing by providing regulatory agility**

The Flexibility Plan is based on using coordinated and collaborative learning-by-doing to provide experience and insights into the capability, practices and processes required to maximise the value of and optimise the use of flexibility. This experience can then inform a parallel track of effort to implement the capability, practices and processes, including changes to regulatory settings.

Learning-by-doing is our preferred approach to developing the capability, practices and processes needed to use DER and transact flexibility. We are currently developing advice for the Ministry of Business, Innovation and Employment (MBIE) and other decision-makers about opportunities to improve support for learning-by-doing. The input already received from Authority staff is appreciated. We will share the advice with you once it is ready in April 2023.

We consider regulatory agility to involve encouraging learning-by-doing to identify and find solutions to regulatory barriers and using that experience and evidence to inform the Code change process. The Authority should prioritise regulatory agility by:

- using its new powers to exempt an industry participant from compliance with given clauses in the Code alongside imposing any terms and conditions that it reasonably considers necessary to enable learning-by-doing.<sup>3</sup>
- dedicating resources to triaging regulatory barriers identified by participants trying to innovate or adopt new business models and practices.

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<sup>3</sup> The Electricity Industry Act was amended in 2021 to, amongst other things, to allow the Authority to grant an individual exemption subject to terms or conditions that it considers necessary. See [Electricity Industry Amendment Bill 2021: Bills Digest 2655](#)

Regulatory agility – from the Authority, Commerce Commission and other regulators – will complement needed improvements to incentives and funding to enable exploration and learning-by-doing so that the solutions are ready to deploy at scale when needed and commercially viable.

There is significant opportunity to expand the use of pilots and trials in Aotearoa New Zealand to support more informed, evidence-based policy making and regulatory changes, while avoiding tying progress to the pace of the “slowest adopters” or “slowest adapters” in the energy transition. Projects should be multi-party and multi-lateral wherever possible to co-design and demonstrate real-world solutions, identify and mitigate any possible risks, and provide evidence of consumer benefit, thereby avoiding the 'he said, she said' flavour of consultation processes.

Not all projects should be granted exemptions from existing Code provisions. However, providing regulatory agility and enabling learning-by-doing means requests for targeted exemptions should be prioritised. This approach will allow fast adopters facing specific regulatory or technical barriers to keep moving forward using temporary Code exemptions to build evidence in favour of a permanent Code change to remove the barrier – if they can justify it. By enabling regulatory exemptions, trials can be set up to gather the necessary evidence that benefits do materialise and accrue and demonstrate how harms or costs can be managed or mitigated. A temporary Code exemption can easily be walked back. There is no commitment to make a permanent change, so risks and regrets are indeed minimised.

The first step is to produce a framework for parties to request exemptions for learning-by-doing. The framework should set out the Authority’s view of what it expects to see to be able to grant an exemption as not all requests could reasonably be accepted. For example, preference could be given to projects with multiple industry participants intending to collaborate, those addressing issues raised by several parties, and those seeking to achieve a clear consumer benefit.

Most importantly, the framework should be produced quickly on a learning-by-doing basis and allowed to evolve with experience. FlexForum considers an initial framework could easily be available within 30 days. It will also be important to process exemption requests in a timely manner (ie, 30 days), so that participants that have committed funds to trials are able to proceed within their budgets.

Two FlexForum members, Kāinga Ora and Ara Ake, are currently engaging with the Authority with the intention of obtaining regulatory exemptions for industry participants in a “Multiple Trading Relationships” (MTR) “lite” trial to maximise the use and value of solar PV on social housing and ease energy hardship for social housing tenants. This trial requires regulatory exemptions so that consumption and generation can be split at the household ICP level, which is not currently permitted by the Code. This request provides an excellent starting point for designing and testing an exemption process to support learning-by-doing. FlexForum strongly supports this trial as an example of learning-by-doing and recommends that the Authority works towards a decision on the exemptions as quickly as possible.

### **The Authority should dedicate resources to triaging regulatory barriers**

FlexForum is aware its members are encountering regulatory barriers when learning-by-doing. The Authority should dedicate resource to address such barriers, triaging the most critical or important and working proactively and promptly with participants to identify whether the exemption process could be used to resolve the issue, or if change is needed.

The transition to net zero emissions and greater electrification of the economy will increasingly cause organisations across the electricity ecosystem to encounter technical barriers when learning-by-doing. Given this, the pace of the transition will increasingly rely on policy and regulatory bodies adopting agile decision-making processes which pay close attention to these fast adopters and can quickly realise the value of both the mistakes and successes from learning-by-doing.

Firms attempting to roll-out DER, monetise it, set-up and offer flexibility, or strike deals with a range of participants are encountering a range of barriers due to:

- regulations or rules which are not fit-for-purpose
- regulations or rules which make it difficult to achieve a desired outcome or behaviour from existing or potential counterparties.

Regulatory agility will require more flexibility around resource allocation to support quick responses and advice on regulatory barriers. The existing once-yearly prioritisation and resource allocation approach to the Authority's business planning is more suited to a steady state regulatory environment focused on incremental change. It does not provide the agility needed to respond to emerging concerns at a pace which supports innovation and learning-by-doing.

Learning-by-doing will be more productive and deliver faster gains than the traditional propose-respond consultation model. The Authority has commissioned research and advice and consulted many times on regulatory settings affecting DER and flexibility going back to 2015. Over the same period, other regulators and government agencies have consulted on similar topics. And for all the time and effort expended, there has been not much practical or tangible progress. A different and more agile approach is warranted.

## Issues the Authority should prioritise

The Authority intends to prioritise a programme of work regarding the regulatory settings for distribution networks based on feedback from submitters.

The issues paper considers topics that need to be addressed. Most of the topics and questions are matched by a step in the Flexibility Plan. Without being exhaustive, the topics covered complement or are matched by steps #2, 6, 7, 8, 10, 11, 12, 13, 16, 17, 19, 27, 28, 30, 31, 32, and 33.

We are currently working to identify the steps in the Flexibility Plan which are on the critical path and are not getting sufficient attention; effectively a prioritisation plan. We will share this work with the Authority when it is available in April 2023.

Ahead of this work being available, we can highlight the areas the Authority should prioritise based on the topics which drew the most discussion and questions while developing the Flexibility Plan 1.0.

1. making better use of available distribution network capacity
2. valuing, pricing, and paying for flexibility
3. communication and connectivity of flexibility resources
4. contracting arrangements, particularly risk allocation and management
5. learning-by-doing and regulatory barriers.

Prioritising these topics does not mean the Authority must do or lead all the related work. We consider the answers will come from learning-by-doing, which is why we recommend the Authority work proactively with fast adopters that are encountering regulatory barriers.

We are also producing a series of FlexForum Insights on each of these topics to share what we have learned and to create the conversations and action which are needed to make tangible progress.

### Making better use of available distribution network capacity

There has been considerable effort in Australia over the past five years to develop the capability and processes needed for dynamic allocation of network capacity, and management of network (export) constraints, in light of the ever-increasing uptake of solar generation.

While constraints on network access have not typically been a feature of Aotearoa New Zealand's distribution networks to date, in this and coming years, distributors will be making value judgements regarding dispatch priorities of different generation and other connected resources, particularly solar farms and electric vehicle charging.

Challenges around network access will also show up with the introduction of Dispatch Notification in April this year, and the provision of ancillary services by DER operators. While the overarching intent is for more DER to participate in, and be dispatched into, the

wholesale market, there is currently no way for either the System Operator, or the operators of the DER, to know what the real-time configuration of the host distribution network is and therefore what actions from the DER can be accommodated safely at a particular point in time, without negatively impacting the consumers on the network. This is a concerning gap in the market design, but one that needs to be solved urgently if we are to successfully enable value-stacking by DER.

We consider that the answer involves making better use of available capacity by identifying and allocating spare network capacity across each connection (or a group of connections) across time and location to match the available real-time capacity of the local network or power system (ie, dynamic allocation). At the least, mechanisms to enable and facilitate coordination between distribution networks and DER operators need to be introduced, under urgency, to ensure that both the physical limits of the network are adhered to, and that DER operators are not unnecessarily constrained from operating to optimise value.

We published a FlexForum Insights piece on this topic in January 2023 and will shortly host a webinar to socialise the topic more broadly and share the Australian perspective.<sup>4</sup> Shifting to more dynamic approaches for allocating and using spare network capacity requires extensive new capability, processes, and practices, and particularly, significant investment in digitalisation across the supply chain. There are several contractual, pricing and capability questions, including funding, which need input from the Authority, Commerce Commission, distributors and flexibility suppliers. FlexForum would be willing to lead, host or participate in workshop with the Authority to discuss the immediate progress steps that are needed.

The FlexForum view is that prioritising exploration of dynamic allocation and management of distribution network capacity, including constraint management, will highlight and deliver capability needed to accelerate electrification and decarbonisation.

## Valuing and pricing flexibility

Transacting flexibility requires buyers and sellers to have common and transparent processes for determining the value and price of flexibility. Flexibility buyers need this information to make decisions about when to use flexibility as an alternative way of responding to the specific network, system or market condition. Flexibility suppliers need this information to make decisions about what, when and where to invest in flexibility resources and operate them.

The key to maximising the value of flexibility and optimising its use - through value-stacking across the value chain - is providing clarity about the two main commercial mechanisms for financially incentivising flexibility:<sup>5</sup> These are:

- Price-based flexibility (indirect or implicit flexibility), in which energy demand or generation responds to the price of energy and network use (via retail tariffs and network charges).
- Contracted flexibility (direct or explicit flexibility), in which different entities exchange flexibility with each other and set up procurement contracts specifically for that purpose, including performance guarantees. Contracted flexibility can be transacted using bilateral contracts or flexibility platforms.

We think that prioritising valuing and pricing flexibility will help accelerate both the uptake and implementation of flexibility-based network alternatives, the reform of distribution pricing, and the development of efficient customer-centric offerings by flexibility suppliers, as well as retailers and other parties.

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<sup>4</sup> Read and download the FlexForum Insights on Making better use of available distribution network capacity will enable more affordable and reliable electrification on the [FlexForum webpage](#)

<sup>5</sup> Note: these two exchange mechanisms were defined through development of the UK Smart systems and flexibility plan. Refer <https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>

## Communication and connectivity

Communication and connectivity are foundational capabilities of a power system and market which maximises the value of DER and flexibility.

Electrification will put millions of DER - EVs, solar, battery storage - on our distribution networks. These will need to be seamlessly integrated into the networks, electricity system and market in a way that gives power (and value) to the households and businesses who own the DER.

Digitalisation must be at the heart of this integration to make that data and information available to balance, second-by-second, the electricity and capacity required to keep the lights on, and to make sure that people and businesses have the information they need to make their electrification decisions and to participate in the electricity market. This is a critical enabler of the capability highlighted above of making better use of network capacity.

The electricity sector needs to embrace digitalisation. Digitalisation means converting information into a digital and computer-readable format so all types of information in all types of formats can be processed, intermingled, stored, shared and transmitted with less fuss, bother or hassle and at lower cost.

We are working on FlexForum insights on communication and connectivity.

Fortunately, learning-by-doing is already underway through the demand flexibility common communication protocols project being delivered by industry (represented by the EEA) and EECA and the acquisition and use of network operational data by EDBs.

## Contracting arrangements, particularly risk management

Flexibility will increasingly be transacted across the electricity supply chain. Electrification will result in more buyers, buying flexibility more often, and an exponential increase in sellers.

Streamlining the exchange of flexibility through common contracting arrangements and terms of trade will make it easier to supply flexibility by reducing cost and hassle of transacting with multiple counterparties in multiple locations. Over time, this will assist to create a virtuous cycle which will increase the supply of flexible resources by accelerating investment in DER and flexibility.

Common terms of trade must be the goal, but they should be allowed to evolve over time through a collaborative and experience-driven process (learning-by-doing). However, the terms of trade for transacting flexibility will share many similarities with terms in existing standard contracts used in the electricity sector.

Risk management terms and risk allocation are the most likely barriers to streamlining the contracting process, particularly if there is a mis-match in the sharing of risk between provider and buyer in the pre-and-early commercialisation phases of using flexibility.

Currently, a buyer of flexibility needs to make a calculated business decision about the extent to share or transfer risk to suppliers, trading off a choice to support growing supply and trying to eliminate risk. If non-performance negatively impacts consumers, the flexibility buyers will be the parties held to account by the regulatory regime and community, and hence are required to take a 'leap of faith' in contracting with new, untested flexibility suppliers. These risks encompass both deployment risk (can sufficient units of capacity be deployed in a short enough time) and performance risk (will the units deployed perform as expected). As such, risk management is a key issue to resolve, both as a contracting matter and to gain buy-in about allocation of risk of non-performance in the pre-commercialisation phase of flexibility when there is little opportunity to manage risk through diversity.

We are finalising our FlexForum Insights on contracting arrangements for publication in March 2023.

## Learning-by-doing and regulatory barriers

The FlexForum gathered a series of insights and questions while developing Flexibility Plan 1.0 about barriers to households, businesses, communities and the power system making the best use of flexible resources.

Barriers are things that get in the way of learning-by-doing and implementation. These barriers can be put into two groups:

- cultural barriers which affect how things are done, particularly due to decision-making by regulators and firms
- technical barriers which affect what things are done, particularly due to specific legislative and regulatory settings.

We are finalising a FlexForum Insights piece on regulatory barriers which has informed several points made in this response.

There is a close relationship between learning-by-doing and regulatory barriers. We are also documenting the main challenges faced by organisations when attempting learning-by-doing, and any gaps in the support available to them. We are also talking with organisations with a role in supporting learning-by-doing. We plan to deliver this advice to MBIE, and to other decision-makers in April 2023.

