TRANSPOWER

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Attn: Electricity Authority, Commerce Commission, Energy Efficiency and Conservation Authority

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Joint Letter: Ensuring consumers benefit from efficient investment in non-network solutions

Transpower New Zealand welcomes the opportunity to respond to the joint letter from the Commerce Commission, Electricity Authority and Energy Efficiency and Conservation Authority (EECA) dated 24 February 2026 on ensuring consumers benefit from efficient investment in non-network solutions (NNS). This submission is from Transpower in our roles as grid owner and System Operator.

We strongly support the objectives set out in the letter. Efficient use of NNS, including flexibility services, has an important role to play in managing system growth, improving affordability for consumers and supporting the energy transition.

Role of coordination across agencies

Transpower welcomes the collaborative approach demonstrated by the joint letter. Effective use of NNS depends on aligned signals across economic regulation, pricing policy, market settings, information disclosure, and energy efficiency programmes. Most of the issues in the letter have been highlighted and discussed over many years, particularly around the need for standards, data, and interoperability. For example, the Electricity Authority's consultations last year on 'Our future is digital' and 'The future operation of New Zealand's power system'.

We encourage the Commerce Commission, Electricity Authority and EECA to work together to:

- Make decisions as soon as possible around standards, data, and interoperability. For example, while regulators have been encouraging the use of open protocols, leaving

it up to individual participants to select which open protocol(s) can lead to duplication or lack of interoperability.

- Sequence reforms to minimise transition risk and make sure allowances are provided to make the changes required to drive future efficiencies.
- Provide early guidance where changes may materially affect investment incentives.

General support for the direction of travel

Transpower endorses the assessment by the joint agencies that NNS can provide substantial benefits. Specifically, NNS are valuable in deferring or avoiding expensive network reinforcements and facilitating more efficient utilisation of existing infrastructure. This perspective is consistent with Transpower's commitment to technology-neutral, least-cost decision-making and supports the integration of NNS into early-stage planning processes alongside traditional network options. Such an approach aligns well with established practices under economic regulation and asset management frameworks.

Alongside deferral and efficient use of infrastructure, there is an urgent need to increase the visibility of flexibility from a system operations perspective. The primary objective of Transpower, in its role as the transmission System Operator, is to keep the power system secure at all times. To do so into the more decentralised future the System Operator must have adequate visibility of, and interoperability with, distributed and consumer energy resources (DER and CER). Put another way, the System Operator needs to know what to expect in real-time so that when things go wrong it is well prepared to respond.

Data, interoperability and market engagement

Transpower strongly agrees that open communication protocols, standardised data exchange, and transparent procurement processes are essential to developing a competitive and scalable flexibility market. From a system perspective, interoperability should support:

- Common definitions of:
    - peak demand
    - flexible capacity
    - Dynamic Operating Envelope(s)
    - availability windows; and
    - performance under stress
- Machine-readable, standardised data that can be:
    - aggregated across EDBs,
    - integrated into transmission and system operation models, and
    - updated as flexibility scales

Without this, price-responsive demand (including in response to network tariffs) remains largely invisible at the system level, forecast improvements remain local rather than system-wide, and flexibility risks being double-counted or over-assumed. There is urgent need to increase the visibility of CER and DER operating to ensure the System Operator is able to maintain a secure electricity system. This includes protecting the ability for the System Operator's load forecast to accurately forecast grid-level load in the days and hours ahead of time. It also includes ensuring that the System Operator has visibility when dispatched embedded generation is constrained down for local network or other operational reasons.

Norway's electricity system is the clearest example overseas of the creation of a central data hub and flexibility information hub to address the aforementioned issues.

Elhub is Norway's central data hub, mandated by the regulator, that:

- Enables neutral, standardised exchange of metered data
- Provides open and protected APIs
- Explicitly aims to enable automated services and innovation via standardised interfaces

In addition to this platform, Elhub is leading the development of a national Flexibility Information System (FIS), which is described as:

- A central registry of flexible assets
- A shared integration and data hub for flexibility services
- A platform to facilitate communication and data exchange between System Operators, service providers, and asset owners

While Norway's FIS is a work in progress and is currently in prototype phase, it may serve as a useful case study to observe how regulators can enable data interoperability, and how this can unlock a flexibility service market in the domestic system.

We consider that regulators need to lead, and make decisions, in setting and requiring the use of standards. There are numerous open protocols, and it can be costly to ensure they can talk with each other. Networks may be hesitant to invest in certain open protocols if other parties go down a different path. There is a risk that without clearer direction or requirements, while adopting open standards, the industry interoperability drive will end up more costly than it needs to be. The Commission may also need to make allowances for, and incentivise, the EDBs to achieve the standardisation and interoperability discussed in this submission.

Key elements for effective planning

In its previous submissions to both the Commerce Commission and the Electricity Authority, Transpower has underscored several core elements to ensure efficient outcomes:

- Adoption of consistent, system-wide demand and generation scenarios to enable coordinated planning across both transmission and distribution networks.
- Acknowledgement that flexibility responses are inherently uncertain, often time-bound, and may vary significantly by location.
- Careful design of regulatory expectations to avoid inadvertent bias towards deferral, particularly where delayed investment may lead to congestion or reliability challenges that ultimately disadvantage consumers.

Regarding the latter point, we note that Ofgem, in its recent sector specific methodology for distribution networks stated the following:

> *"To support the delivery of consumer outcomes - notably rapid connection times where network build out cannot happen fast enough, or to smooth a programme of network reinforcement, to avoid supply chain constraints or an inefficient spend profile. In the case of the latter however, DNOs [distribution network operators] should not be using flexibility to defer the delivery of infrastructure that has been planned for ED3 into future control periods."* [1]

Cost–benefit analysis and deferral value

Achieving efficient decision-making depends heavily on robust cost–benefit analysis. The determination of deferral value is complex and requires vigilance to avoid inefficient deferrals. For example, networks must be cautious not to defer capital investments in situations where subsequent capital costs and the expenses associated with NNS result in higher overall bills for consumers. Inefficient outcomes may also occur if capital investment remains necessary and consumers end up paying for both the NNS and the capital expenditure. Furthermore, uncertainties regarding the timing of reinforcement needs and the responsiveness of NNS, coupled with asymmetric risks—such as the potential loss of electricity supply for consumers—must be carefully evaluated when making investment decisions.

The development of a common methodology[2] that EDBs for assessing NNS may improve the EDBs' evaluation of options and create improved transparency for flexibility service provider.

Asset utilisation and capacity considerations

Transpower supports efforts to maximise the utilisation of existing network assets before pursuing reinforcement. However, it is important to acknowledge that available network

[1] Ofgem, ED3 Sector Specific Methodology Consultation, October 2025.
[2] For example, the Energy Networks Association in Great Britain developed a common methodology https://www.enwl.co.uk/globalassets/future-energy/flexibility-hub/document-library/cem-tool/ena-common-evaluation-methodology-v3.0.pdf.

capacity can stimulate new regional growth. Additionally, underutilisation of network assets may be intentional, designed to provide security of supply, minimise system losses, or enhance resilience. This nuanced approach reflects the broader intent to balance asset utilisation with the need to maintain reliable and efficient service for consumers.

Length of flexibility as a non-transmission solution

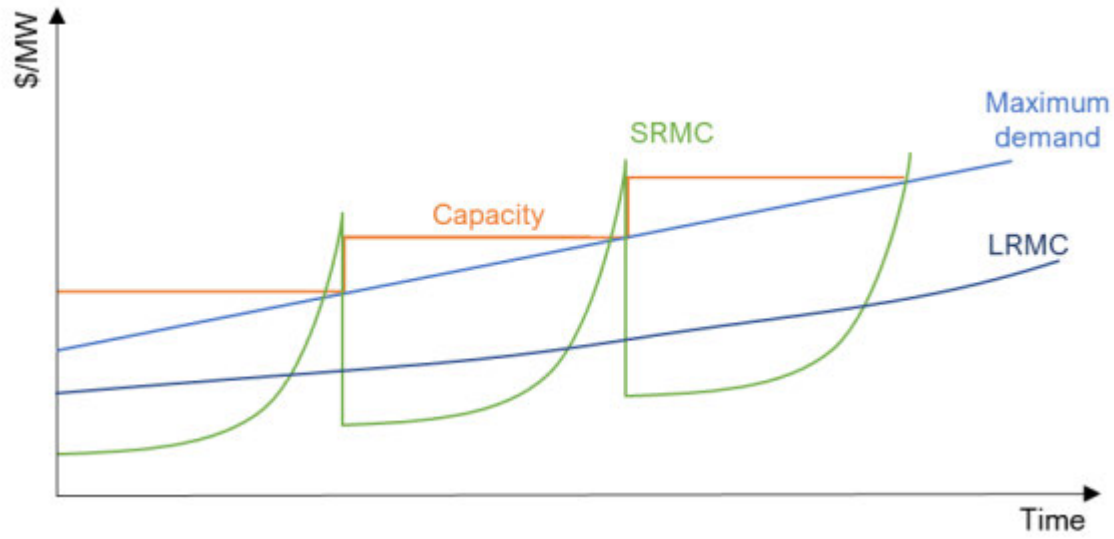
Transpower has heard from electricity distribution businesses (EDBs) and flexibility services providers that short deferral horizons discourages investment in new flexibility resources that require upfront capital and longer-term revenue certainty.

This is a difficult to solve. We understand this sentiment, however the nature of the services Transpower is typically seeking means that deferral does need to be contracted short term. If the reinforcement is still required, and Transpower has contracted for long-term deferral, then consumers will end up paying twice for the same service. Similarly, if the flexibility is already operating before Transpower identifies a need, we will not pay for the existing flexibility that has altered the demand profile. This will be built into our planning forecasts.

Pricing as an enabler of flexibility

Transpower supports the focus on distribution pricing reform as a fundamental mechanism for enabling efficient flexibility within the electricity network. It is essential, however, to carefully consider the type of price signals implemented—whether they are long-run, short-run, or a combination of both—as well as the costs and complexity associated with introducing these new pricing structures, particularly during the transition phase. Time-of-use tariffs can be designed to get enough response across consumers while allowing consumers to choose whether and how they want to respond. This type of approach to incentivising more active market participation from smaller consumers can support the System Operator's load forecast to learn what to expect in real-time grid-level demand. Internationally, there are varying approaches to how the value of NNS is communicated to markets and consumers. For example, though contracting through flexibility markets or location-specific tariffs, noting that these are not mutually exclusive.

Figure 1: Simple illustration of how SRMC and LRMC develop as maximum demand increases



Source: CEPA[3]

Alignment of pricing signals

It is also important to ensure that distribution pricing reform is coordinated with upstream transmission signals to avoid inefficient outcomes. In the absence of explicit price signals in the Transmission Pricing Methodology, new transmission services are established through investment contracts between Transpower and EDBs. When cost estimates for these services are available, they can help inform and support the development of effective pricing signals at the distribution level.

Equity, equality, and cost recovery

Consideration must also be given to issues of equity and equality in network pricing, particularly with regard to fixed cost recovery. More granular, cost-reflective pricing or targeted payments for those able to provide flexibility may help avoid future investments. However, these price reductions or payments are ultimately funded by other consumers. While a robust cost-benefit analysis may demonstrate an overall increase in consumer welfare, it is crucial that pricing reforms are designed to ensure all consumers share in the benefits, rather than disproportionately rewarding only those who are able to respond to price signals.

Retailer pass-through and system certainty

Finally, although it is important to align transmission and distribution price signals where suitable, the effectiveness of these signals depends on how retailers choose to pass them on to consumers. Retailers may face limitations or make decisions that do not result in the distribution price signals being consistently passed on. As a result, from a system

[3] CEPA, Distributed Energy Resources Integration Program – Access and pricing, 2020.

perspective, there is less certainty regarding consumer price response compared to networks' direct control measures. This inherent uncertainty increases the overall risk to achieving the intended flexibility outcomes.

Analogy: paid demand response ↔ airlines paying passengers not to fly

Imagine an airline that routinely "oversells" a flight because it expects some no-shows. When the day arrives and too many people turn up, the airline doesn't (usually) cancel the whole flight—it raises an offer at the gate: "Who'll take a later flight for a voucher/hotel/upgrade?" If enough passengers accept the price, the problem is solved with a small, targeted group. If not enough people respond, and the airline can escalate—ultimately denying boarding to a limited number of passengers (who may receive a smaller compensation than if they had volunteered), rather than disrupting everyone.

Electricity networks face a similar "too many people turned up" moment—except its kilowatts rather than passengers. At peak times (or during contingencies), the network can't safely "seat" everyone's demand on the wires and transformers available. So, the system tries the equivalent of gate-offers: pay customers to use less (or shift load) for a short window. That's demand response: customers change consumption in response to prices or incentives rather than the network building extra capacity for rare peaks. However, if electricity networks do not have control over devices to reduce demand then they would need to disconnect parts of its network as they are unable to disconnect the precise load to avoid a wider outage.

The key difference: *directing a few vs shedding many*

Here's the ~~sharp~~ contrast:

- **Airlines can "direct" the outcome at the margin.**
  They can keep increasing the compensation until they get enough volunteers, and if they still fall short, they can **select a small number of passengers** to offload (involuntary denied boarding). Either way, the disruption is bounded to the number of seats the airline is short.
- **A network relying only on "price" can't guarantee who responds, or how much, or where.**
  Price-based demand response (dynamic pricing, critical peak pricing, etc.) is voluntary. If too few customers respond—or the "wrong" customers respond in the "wrong" location on the network—the operator may still have a local overload. In extremis, the system's backstop is not "a few people take a later flight," it's involuntary curtailment / load shedding, which can end up affecting **a much wider set of customers** than the marginal shortfall would suggest.

Put simply: airlines can target the exact number of seats they need, but price-only demand response for electricity networks can be too blunt—and if it under-delivers, the only remaining tool may be broader outages to protect system security.

Network planning and forecasting

The joint letter correctly identifies the value that NNS can bring to network planning forecasting. By leveraging NNS, network owners are able to refine their forecasts prior to committing to irreversible investments. One of the challenges highlighted is the burden of fragmentation faced by flexibility providers, who currently must navigate multiple procurement processes across different networks. The letter notes that this inefficiency should be addressed to facilitate a more streamlined approach.

The same principle applies to forecasting and the use of data. For flexibility providers to effectively respond to system needs, they must have access to reliable and understandable information on the networks' forecast which underpins their requirements for flexibility. If forecasts are opaque or inconsistent, providers may lack the confidence to participate, which undermines the effectiveness of flexibility services.

For example, Transpower seeks inputs from distribution networks on their assumptions that underly their forecasts. This includes on areas such as electric vehicle (EV) uptake, EV charging behaviour, price responsiveness, and flexibility availability. However, we often do not receive these underlying assumptions or they are constructed differently from other distributors, preventing comparisons across distributors. Such variability introduces risk when distribution-level forecasts are aggregated into transmission planning, which is used to determine the necessity for network reinforcement or its deferral, and is critical for system adequacy assessments.

Establishing common requirements would offer several benefits:

- Enable EDBs to conduct more robust cost-benefit analyses between network and non-network options.
- Increases transparency for flexibility service providers, Transpower, and regulators.
- Provide clearer investment signals for flexibility providers operating across multiple networks.
- Facilitate better aggregation of flexibility services into system-level planning.

This approach aligns with the joint letter's emphasis on having objective, comparable, and transparent criteria in planning.

Transpower, in both its roles, therefore encourages regulators to collaborate with the industry on developing and mandating common approaches to incorporating flexibility into planning forecasts. This does not necessarily mean adopting a single set of assumptions or a single methodology. Rather, it involves setting requirements to standardise data reporting requirements of electricity network service providers' planning forecasts. For instance, each

provider could be required to publish assumptions related to EV adoption, step-loads (where confidentiality permits), distributed generation, and other relevant factors. Doing so would support transparency and help build confidence in the planning forecasts produced by distribution businesses and Transpower alike.

Conclusion

Transpower broadly supports the direction and intent of the joint letter and looks forward to ongoing engagement with the agencies and industry on how best to realise the benefits of non-network solutions for consumers. We consider that greater leadership from the Regulators in pushing forward with standards, data requirements, and interoperability it need in order to improve the ability of network lines companies and the System Operator to engage with flexibility.

If you wish to discuss any of the points outlined in this submission, please contact us.

Yours sincerely,

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