Submission on enabling Market Evolution:

Market Operation Service Provider 10-year roadmap

For

Electricity Authority

Submission from : Middleware New Zealand

Date of this Response: 14 July 2026

Dear Electricity Authority Operations Team,

Thank you for the opportunity to comment on the Market Operation Service Provider Roadmap and its vision to simplify and streamline the operation of New Zealand's electricity market.

Middleware New Zealand's purpose is to create open, secure and interoperable digital ecosystems that help New Zealanders thrive through trusted access to data and services. Over the past decade, we have helped establish and implement open data frameworks across government, health and financial services, including contributing to New Zealand's API standards for All-of-Government, Open Health and Open Banking.

Our interest in this roadmap centres on the proposed data hub and how it can enable secure, trusted and efficient access to electricity data for all market participants. Our perspective is guided by a vision of a future electricity sector where advances in technology deliver an abundant supply of clean electricity. This future will increasingly rely on trusted access to data, enabling consumers, communities, retailers, distributors, generators and service providers to make better-informed decisions, develop innovative services and optimise the way electricity is generated, distributed and consumed.

We see significant value in an enhanced registry that identifies distributed generators, retailers, consumers and trusted third-party service providers. A modern participant registry provides the foundation for secure discovery and trust, allowing authorised participants to locate one another and exchange information relating to electricity consumption, distributed generation, distributed energy resources (DER), forecasting and other value-added energy services.

While we support the objective of improving access to electricity data, we encourage consideration of an open interoperability model rather than a centralised data repository. Internationally, and across New Zealand's health and financial services sectors, the trend has been towards standards-based data sharing, where data remains with the system of record and is exchanged securely using common APIs, data models and consent-driven access controls. This approach improves security, reduces duplication, supports innovation and enables the ecosystem to evolve without creating unnecessary central points of dependency.

In our view, the participant registry should become the trust layer for the sector, while standardised APIs and open protocols enable direct, secure, peer-to-peer data exchange between authorised participants. This architecture aligns with global best practice and provides a scalable foundation for future innovations, including distributed energy management, consumer energy services, demand flexibility and emerging market models.

We welcome the opportunity to contribute further to the development of an open, standards-based approach that improves data accessibility, encourages innovation and supports a more efficient, resilient and equitable electricity sector for New Zealand.

Thank you for your consideration.

Sincerely,

Sera Skinner
Manager; Regional Sales

sera.skinner@middleware.co.nz

Introduction to Middleware

Middleware New Zealand (MWNZ) is a premier, New Zealand-owned, technology-independent integration specialist that delivers advisory, implementation, and support services across critical business sectors, including banking, energy and health. For over 15 years, we have helped government agencies and businesses to solve Open Systems and integration challenges. We address every phase of the digital lifecycle - from initial investigation and product selection through to enterprise deployment, governance, and post-implementation support. Our thought leaders understand integration across sectors, businesses and systems, and how it can benefit everyday consumers.

Our company was founded to help New Zealanders thrive through better, secure access to the data and systems that support them. We have over 90 staff based across Auckland, Wellington and Christchurch working on Open Systems design and implementation projects. Our work has included collaboration with organisations such as Health New Zealand and the Department of Internal Affairs to develop standards for integration across New Zealand. We also provide integration products for Open Banking that help banks to comply more efficiently with Consumer and Product Data regulations and offer interoperability to bank customers nationally.

We see strong alignment between the proposals described in this consultation document to simplify and restructure electricity delivery and our Open Everything approach, which brings people, businesses and systems closer together. In this submission, we have set out specific areas where our expertise may complement the work already undertaken by the Electricity Authority and could help advance the vision set out in the consultation paper.

Our Viewpoint on the Future of Electricity

To inform this feedback, we imagined a successful electricity sector beyond the timeline of the consultation. Our vision of a successful electricity sector is one that delivers reliable, abundant, clean electricity to all New Zealanders. This vision demands a fundamental shift in thinking about electricity generation, storage and distribution and how to transition from passive consumption to active system participation. Achieving this vision requires more than simply scaling our traditional generation. It needs transparent, accessible electricity data systems to empower consumers, researchers, and entrepreneurs to develop new efficient tools and innovative service offerings.

We agree with the EA that Distributed Energy Resources (DERs) are rapidly increasing in uptake. Distributed solar generation as seen in EA's recent Solar Map of New Zealand is thriving while installation prices have a predicted decline of 60% through the 2020s and residential batteries project up to 50% cost decrease within this decade (Electrical Authority, 2024).

Private investment in high-efficiency solar generation, high-density energy storage and smarter, more flexible devices is giving consumers greater control over how they generate, store and use energy. However, this rapid growth is outpacing the data infrastructure needed to effectively manage and optimise these distributed resources. The demand for greater independence from traditional electricity supply models and rising energy costs continues to grow, driving a rapid shift towards greater energy autonomy. As the cost of technologies such as solar, battery storage and smart energy devices continues to fall, we expect New Zealand to transition from a system of passive electricity consumers to one where households and businesses become active participants in the energy ecosystem. This will create millions of distributed energy endpoints that will require reliable, high-quality data and coordinated digital systems to ensure the electricity network remains secure, efficient and responsive.

Over time, we imagine a move to:

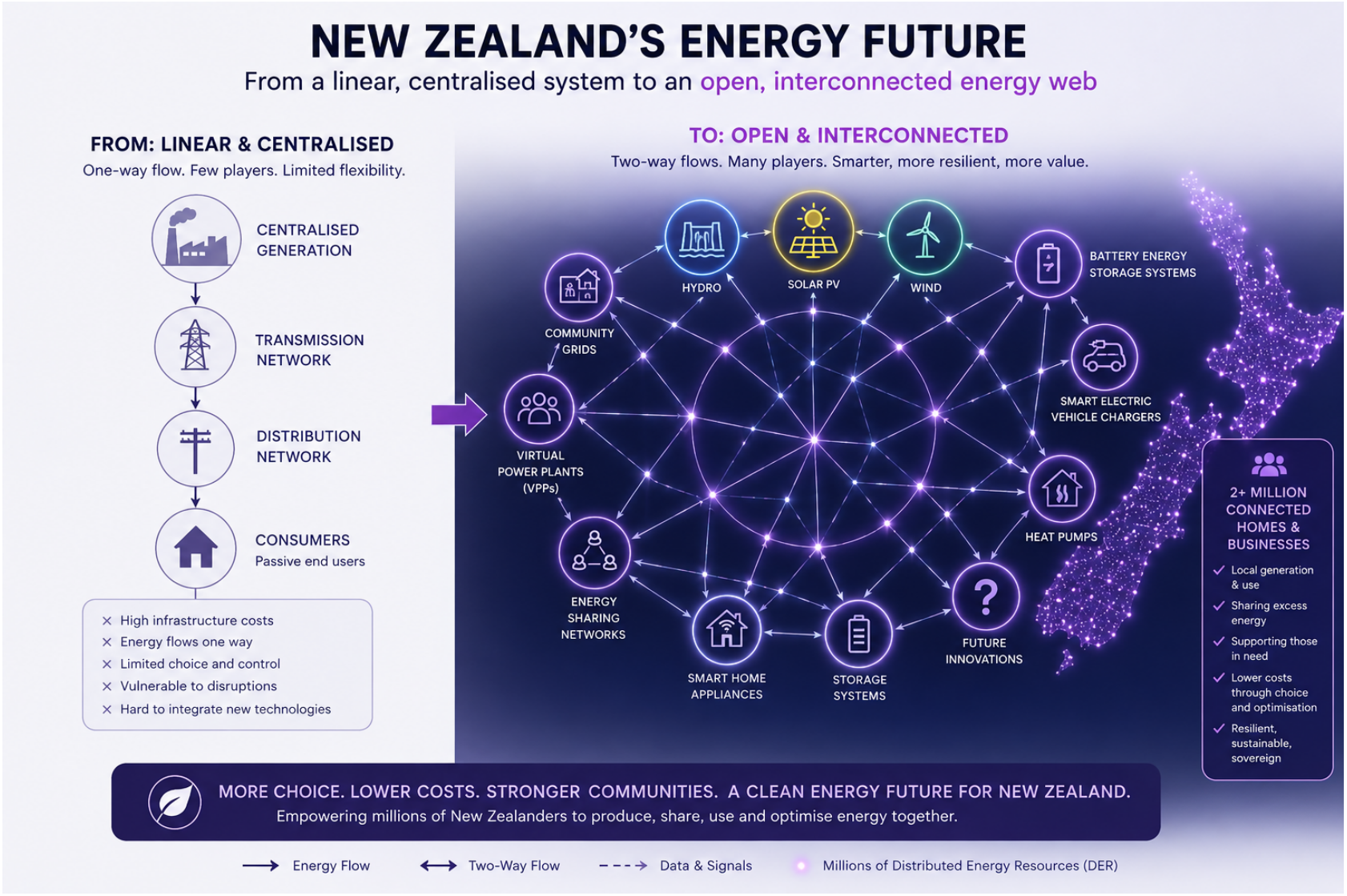
- **Abundant Energy Islands:** Dwellings achieve sovereignty-for-one with private investments in solar, batteries and EVs at individual homes reducing their reliance on traditional supply. AI optimisations, automation and smart devices allow consumer driven decision making to avoid high cost traditional models, provided households have access to the data needed to make those decisions well.
- **Abundant Resilient Communities:** Individual electricity islands integrate into connected ecosystems and communities. Enabling resilience, sustainability and increasingly equitable distribution. Local investments in generation to protect vulnerable communities become increasingly likely. Virtual Power Plants (VPPs), peer-to-peer (P2P) trading platforms and community micro-grids are just the start of electricity trading technologies driving community resilience.
- **Abundant Nation:** New Zealand's future electricity infrastructure will encompass more than 2.1 million residential dwellings and thousands of commercial buildings, schools, hospitals, and public facilities. Community generation, the possibility of advances in fusion technology and adoption of home storage technologies allows electricity trading amongst all generators to benefit the whole country rather than a small number of generators and retailers. This scale of coordination is only possible with an open, interconnected data framework that lets these distributed generators see and respond to the electricity system in close to real time. We can build an equitable, efficient, sovereign capability if we allow ourselves to move away from our current paradigm.

Depicted in the following diagram, we believe the future electricity system will coordinate millions of electricity end points across the country enabling equitable distribution of abundant electricity supply. The widely distributed generation and consumption end points will move data across the network differently to the current centralised one-way flow. Flexibility decisions using real-time AI can be enabled throughout the network supporting efficient use of distributed resources, based on accurate, accessible and timely data.

The barrier to achieving this is no longer technical feasibility—the technology exists today. The true challenge is systemic design. The future electricity sector will feature standard structures, protocols and regulatory frameworks guided by the EA to create a distributed mesh network. Sharing data and abundant generation in non-traditional ways helps New Zealand achieve efficient, equitable electricity.

NEW ZEALAND'S ENERGY FUTURE

From a linear, centralised system to an open, interconnected energy web



Our Key Points

Our vision is an interconnected, decentralised electricity system connecting distributed generation provided by private and government funded installations to strengthen community resilience and equity. In our experience delivering API-led open systems, we have observed how value is created in distributed models without single points of switching and control. In our view, the Centralised Data Hub and the potential Central Meter Data Store described in the consultation document risks limiting innovation and impeding development across the system. We believe a distributed model is needed to enable innovative new services, one that supports sharing data from authoritative sources rather than a centralised replica of data. There are many examples of a distributed model in operation today which do not require centralised data, a notable example being the internet.

Our submission centres on the proposal to establish a Centralised Data Hub, which we believe addresses short-term standardisation needs but may create long-term structural issues:

- **Transitional vs. Long-term Viability:** While a central hub may assist retailers in the short term, we consider this to represent a transitional solution rather than an enduring one. Our understanding of the proposal appears to create a central standardised replica of existing data rather than addressing the inevitable source standardisation issues. In our view, the central translation and storage function may become constraints rather than a catalyst for data sharing, and the electricity system as a whole will only be as efficient and resilient as the data layer it depends on.
- **Centralised Structure:** We believe a centralised system reinforces a 'hub-and-spoke' model supporting a central replica of data rather than a distributed model where data is accessed from the consumers and businesses that generate it. We submit that innovation tends to occur at the edges of a system and will take advantage of data in ways that may not be anticipated by a central model. In our assessment, innovators will seek to establish direct relationships with data holders to bring value to their customers and may be constrained if they have to wait for a centralised change to be implemented across all participants, which may slow the delivery of new services at a time when demand for electricity data and supply flexibility is accelerating.
- **Security and Resilience Risks:** Consolidating records into a centralised registry risks creating an expensive bottleneck and single point of failure (SPOF). We are concerned that this 'honey pot' architecture could present a target for malicious attackers. If the centralised service were to be compromised, breached or made unavailable, the whole electricity ecosystem could be compromised as a result.

A ‘Open Electricity’ architecture would establish a common data language that would enable secure, interoperable interactions across New Zealand's electricity ecosystem. Rather than designing around today's technologies, such an architecture would provide a language for current and future systems to interoperate. This would support capabilities such as machine-to-machine electricity trading, automated consumer participation, local resource coordination and the encouragement of participation from third party innovators, each of which depends on trustworthy, real-time data and on an electricity supply robust enough to support the transactions that data enables. We submit that standardised, open access to data is preferable to ongoing translators and hubs of data.

Format for submissions

Enabling market evolution: Market Operation Service Provider 10-year roadmap – consultation paper

Submitter	Middleware New Zealand

Questions	Comments
Q1. What else should the Authority consider when reviewing our MOSP arrangements? Are there other aspects of the services we should consider changing and why?	We agree with the need to move away from the existing linear system based around careful control over scarce electricity resources. We consider that the current model encourages competition based around traditional retail plans but limits the innovation required by new distributed generation points in private homes and communities. We submit that an equitable, sustainable model is needed built for consumers operating in an electricity abundant New Zealand. We support moving towards a cleaner, simpler structure and consolidating like functions within most of the proposed MOSP arrangements. However, we do not support, and have concerns regarding, the shift towards a centralised point of control. We consider that the use of a data hub as a temporary measure may facilitate standardisation and assist legacy systems, but submit that it could ultimately create a rigid, centralised bottleneck that may be hard to move away from in the future. In our view, the whole system will only be able to move at the pace of the central hub, which would be trying to fund and prioritise competing demands between traditional players seeking to protect current ways of working and innovators seeking to introduce consumer- and community-oriented change. We believe a distributed data and generation future need not rely on a centralised data store. In our view, data should be kept at the edges where it is created and accessed via secure peer-to-peer requests. Given the critical importance of data sharing, we believe that consideration of a Data Manager responsible for data exchange within the ecosystem could be more valuable than strictly operational services.
Q.2. What do you think of the Authority's view of the future of MOSP services? What else should the Authority consider?	We agree that simplification of contracts and parties involved in electricity distribution is the right approach to facilitate access and reduce costs. Our main concerns relate to the risks and long term impact of the proposed new MOSP data hub services. We consider that initially, having a central translation and delivery service may reduce participant entry costs into sector wide data sharing. However, we think a long-term translation service may not bring participants closer together and ongoing maintenance requirements may become burdensome over time. In our

	view, the long-term objective should be a coordinated, open data ecosystem where all participants communicate using a shared data language rather than relying on continual translation between disparate systems. Regarding the Datahub, we have identified the following uncertainties and concerns: ● Transitional Gap: We are concerned that a datahub could become a permanent, central infrastructure intended to solve a temporary technological gap. We accept that initially it would help initiate and facilitate standardised conversations within the sector, while reducing legacy issues. However, as participant maturity increases and Open APIs are more widely adopted, we believe this could leave a central data store as a relic of the transitional phase. ● Centralised control: We consider that a long term distributed model would not need a mandatory intermediary between two parties, as it allows direct connections between parties. In our view, an intermediary risks becoming a restrictive, controlling entity and a potential "honey pot" posing cyber risks. We believe that innovation tends to occur at the fringes and submit that a data hub should help enable and support participants all the way to the edges, or, preferably, start with the edges. ● Handshake Problem: There is an increasing volume of data to be shared with an increasing number of companies and stakeholders in the sector. We are concerned that creating a 'Data Hub' does not address the complexities of handshaking; rather, we submit that it simply masks them as the responsibility of a central organisation. ● Authentication and authorisation: We consider that a common ability to authenticate trusted users is reasonable to confirm participation in the data sharing mesh. However, in our view, once authenticated, communication should take place over connections directly between the connecting parties. Additionally, we believe that moving data into a 'hub' raises issues around data ownership and consent.
Q.3. What factors should the Authority consider when investigating the need and benefits of a CMDS?	The proposed CMDS appears to duplicate existing data storage requirements associated with keeping business records. Meter data is already stored with retailers or metering providers. We submit that the open systems concept of requiring data holders to supply data on valid requests should be implemented rather than duplicating all data for the purposes of translation and integration. In our view it is not a storage issue; it's an availability mandate issue. We consider that the proliferation of DERs and development of community based networks will drive data sharing between system participants. Open data

	connections based on standard formats and access mandates would be better suited for the distributed model we envisage and would not require a separate CMDS. We accept that a CMDS may be a useful transitional step to improve data access and reduce retailer investment costs today, but submit that it should not become the long-term architecture of a decentralised electricity system. We foresee that implementation could create permanent sector reliance and impede development. We believe that data sharing is increasingly important and access should be to the source of the data. In our view, metering providers, consumers or delegated third parties would play a bigger role in managing access and maintaining records. We consider that data holders providing access increases availability while reducing reliance on a single central function. Future use cases requiring access to data sharing could include; ● Community micro-grid sharing infrastructure: Secure data sharing enabling communities to coordinate efficient generation, storage and consumption technology to improve resilience and electricity independence. ● Electricity sharing: Standardised, distributed data sharing would support trading platforms or machine-to-machine electricity trading. allowing consumers to find new uses for their own surplus electricity. ● AI, automation and optimisation: Available, real-time data would enable AI to optimise homes, communities and help make the wider network more efficient and accessible. ● Electric Vehicle innovations: Standardised, real time data signals would support vehicle to grid (V2G) services, smart charging, battery swapping and integration with public transport. ● Real-time settlement: Shared market data would facilitate automated, real-time settlement between consumers, generators, retailers and other market participants. ● Electricity as a service: Consumer-authorised data access would enable third parties to develop new products, services and subscription models. ● Active Electricity Participants: Kiwis making private investments in their own generation capability could become small-scale but widespread generators. We submit that the future is likely to involve widespread generation in homes and communities. In our view, making equitable and efficient use of abundance

	for the good of the country requires coordination and governance rather than a system designed to ration a scarce resource. We consider that the short to medium term benefits of a CMDS should be weighed against the longer term costs of developing distributed integration capabilities. We believe that the cost difference between development to support a centralised store versus development to support longer term peer-to-peer connections warrants review.
Q4. What other examples of data sharing arrangements should the Authority consider?	Our vision connects all generators, consumers and third parties and believe that the sharing of data is equally important as the supply of electricity. In our view, consumers would connect to community and centrally based generation and third parties would provide equitable and efficient usage options, underpinned by trusted, accurate and timely data. We note that other sectors such as banking and health have embarked on distributed open data strategies and do not envisage large central data stores as part of their vision. By way of example, the Open Banking model has similar large parties to retailers (trading banks) holding data on behalf of their customers and they provide access to other banks and third parties through standardised exchange protocols. In our view, innovation and mobility have been encouraged by consented access to information without any centralised store of financial records. Similarly, we note that health records are created and maintained throughout a distributed network of patients, practitioners, hospitals, laboratories and specialists. Data is shared under strict consent regimes to ensure that critical data is available to those that need it when they need it. We understand that this environment does not rely on a central store facility translating data into standardised formats. Rather, data is created throughout the network and sent to authorised parties in agreed, documented formats under clear sharing rules. We consider that the internet itself provides a further example, as it is the largest information distribution network and has been developed through standardised access to a distributed network of information creators and holders. A registry system has enabled information providers to be identified and standard protocols define how information is requested and provided. We acknowledge that electricity data is more clearly defined and structured than general internet information but submit that the same principles could be applied to locate and share information.
Q5. What else should the Authority consider in planning and scheduling changes to the MOSP services?	We consider that the sector is moving towards decentralised electricity generation and decentralised data about that electricity. We note that today there is an abundance of data in siloes held by agencies and companies with limited sharing requirements and, where arrangements exist, data is largely difficult to access. In our view, centralised policy development to enable and

	require data sharing would enable a system wide view of New Zealand's electricity system, regardless of where the electricity is generated and where the data is stored. We believe that planning for consumers and communities becoming future generation points is necessary to support moving beyond a system built around managing a small number of generators and retailers towards one capable of coordinating many thousands of participants. We submit that equitable access and communication, particularly as the number of participants in the system grows, are needed throughout the market to help build New Zealand's abundant future for everyone. We believe that another aspect for consideration is the future inter-disciplinary use across sectors. Open data and the Consumer Data Right (CDR) are expanding across sectors, and we consider that integrated, cross sector use cases are likely in the future. In our view, any future planning done now should encourage and enable these possibilities, rather than foreclose them. We submit that if a data hub is adopted, it should be viewed as a transitional solution to support retailers through the change. As the consultation acknowledges, centralised decisions and regulatory changes can take considerable time to implement. We consider that, rather than introducing an interim architecture that will later require replacement, the sector should invest now in an open flexible model that can evolve over time, avoiding the cost and disruption of transitioning away from a centralised hub at a later date. We also consider that a cost benefit analysis comparing this data hub against investing in open data principles would be beneficial. From our understanding, creating the infrastructure to store and manage the sector's data centrally would be quite costly, could pose security risks and could hinder innovation in the long-term. We believe that the sector would find greater long-term value in investing today in standardising, protecting and opening electricity data, rather than centralising it. We submit that New Zealand should aim for an abundant electricity future that is equitably distributed across the country, respects the Crown's treaty principles, and creates a sustainable, abundant, sovereign New Zealand. In our view, New Zealand needs to plan differently and coordinate the equitable distribution of electricity rather than restricting and controlling its electricity flows. We consider that the future should combine private and public investments and encourage a collaborative approach rather than a rationing one. Fundamentally, we believe that any future MOSP structure should play a coordination and governance role to guide and accommodate this transition.

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