

Axos Systems Limited

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Electricity Authority Te Mana Hiko
Level 7, AON Centre
1 Willis Street
Wellington 6011

By email: OperationsConsult@ea.govt.nz

Subject: Submission on “Enabling market evolution: Market Operation Service Provider 10-year roadmap”

Executive summary

We support the Authority’s goal of MOSP arrangements that keep pace with an evolving market. This submission makes one central argument. The cost in today’s market and the barriers to entering it come from the same source: a decentralised, many-to-many data architecture in which every participant builds and maintains its own version of the same data machinery. The consultation focuses on modernising interfaces and re-scoping contracts to ensure they don’t become barriers to future changes and innovation. We support that focus, and recommend designing the market-data architecture first, with the contracts shaped around it.

A note on our interest: Axos builds and operates market systems for electricity participants, so we have a commercial stake in how these arrangements evolve. We state that upfront so the Authority can weigh our views accordingly.

Barriers to entry

Each participant independently runs meter data capture and validation, reconciliation submissions, network billing files, outage data and meter-equipment billing support, and they connect through file formats that vary by participant. A new entrant retailer must build and maintain many interface variants across 29 networks and several metering providers before it can serve customers throughout New Zealand. This duplication is a significant cost for new entrants and barrier to competition and innovation.

Barrier to change

Each market change can run through all of these systems at once. Settlement of flexibility, for example, has yet to be defined, but it could conceivably require a flex-load reconciliation calculation, a dedicated meter, a special network tariff and a feeder-level critical-peak signal, illustrating how one innovation in bringing a product into the market can impact multiple systems.

This suggests a simple test for where consolidation creates value. Centralise the market functions that are both duplicated across participants and complex in their interactions. Functions that are duplicated but simple should be standardised and validated, not centralised. Leave alone functions that have low levels of duplication.

The attached one-page framework (Figure 1) plots the MOSP and market-data functions against these two tests.

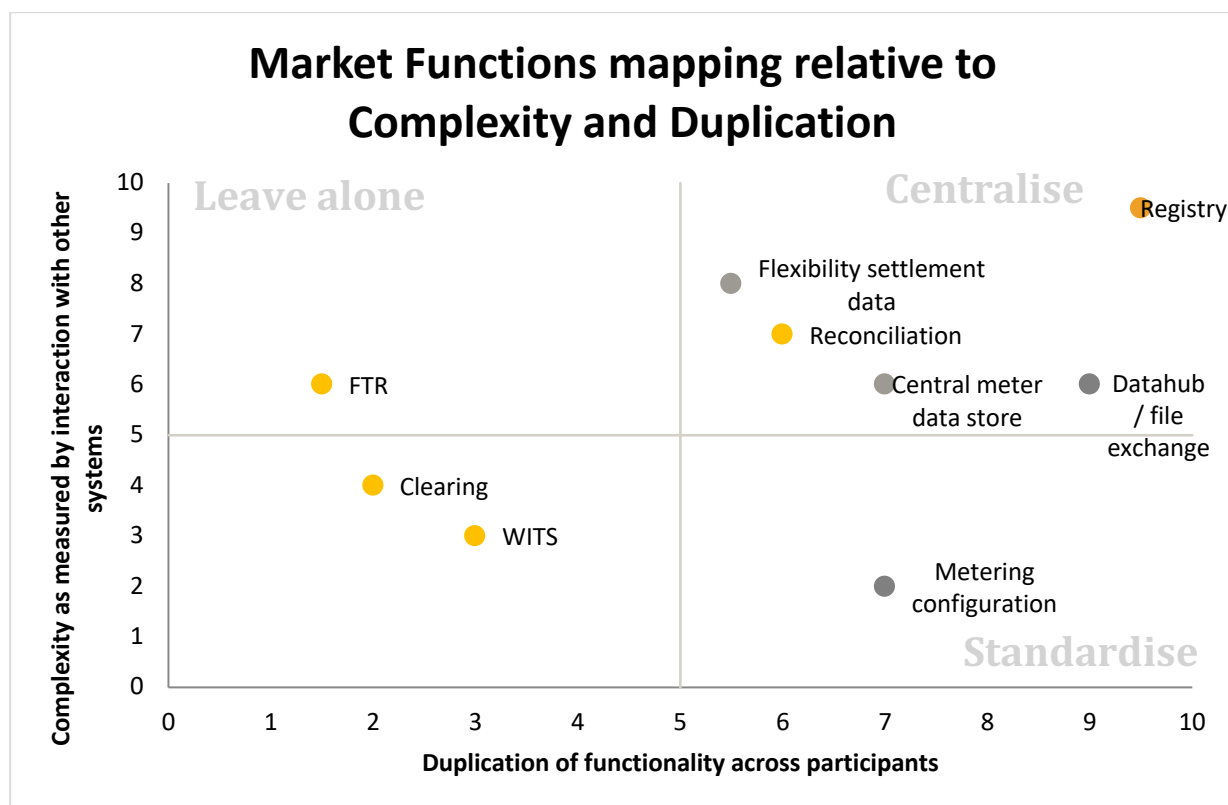


Figure 1. Which market functions to centralise.

The functions that pass both tests form one cluster focused on metering data, reconciliation and file exchange, anchored on the registry as the authority for who may access, send and receive each data set. Together these are an integrated market-data layer. Clearing sits outside it. Clearing is a financial and prudential function, already singular and specialised, with a different risk profile. It takes reconciled volumes through one narrow, stable interface; reconciliation's tie to the registry is wide and changes with every switching and market development. FTR is self-contained. Both should stay separate.

This leads to a different first step from the one proposed. The consultation frames consolidation around the wholesale settlement process and pairs reconciliation with clearing (paragraph 9.6). We recommend pairing reconciliation with the registry. Reconciliation determines and allocates physical volumes; it is a data function that depends directly on registry responsibility and switching data. This pairing can start as a contracting change, not a systems build. One provider and one change-management framework across the two roles capture the procurement benefit on day one, and systems integration can follow as the databus design matures. The 2027 contracts should not lock a settlement-centred structure in before that architecture is designed.

Combining reconciliation with clearing simplifies procurement, but it mixes a data function with a financial one and concentrates settlement, clearing and registry under a single provider that already holds three of the four wholesale roles. That deepens concentration at the point where the Authority says it wants more tender contestability (paragraph 8.7(d)).

The Authority's digitalisation roadmap points the same way. Its sector enablers are system architecture, data exchange and integration of new technologies, and its short-term initiatives include identifying the use cases that need centralisation and adopting a common information model. Organising the MOSP contracts around the market-data layer follows that sequence.

We support a central metering data store as a core component of this layer, subject to a design that does not limit innovation. A central, authoritative metering data set is the missing piece of the current architecture. Building it under the same contract as the registry would eliminate co-ordination issues and the duplicated storage, validation and exception handling that sit across metering equipment providers, retailers and the reconciliation manager today, and would improve settlement accuracy and data quality. The 2027 contracting round and the CMDS workstream are the opportunity to put it in place.

Flexibility settlement is an emerging candidate. Its market design has yet to be defined, but it sits in the centralise quadrant of our framework: aggregators, networks and retailers are already building flexibility data systems ad hoc, and one flex product touches metering, network tariffs, feeder signals and settlement at once. The consolidated structure should be designed so flexibility settlement can be added once its design firms up.

We recommend the Authority:

1. Treat the registry, reconciliation, data hub and CMDS as components of one market-data architecture, designed together, rather than as separate services.
2. Establish an industry working group with deep MOSP and participant-systems knowledge to advise on that architecture.
3. Adopt a long-term roadmap for market systems and data that combines reconciliation with the registry first, and keeps clearing and FTR separate.
4. Draft the 2027 contracts so they do not foreclose this architecture: align change-management and data terms across the reconciliation and registry contracts now, and avoid contractually fusing reconciliation with clearing in ways that are costly to unwind.
5. Require participant-inclusive cost-benefit analysis before any significant change, recognising that participant costs usually exceed MOSP costs and are ultimately paid by consumers.

Axos welcomes the opportunity to discuss this submission. Our detailed responses follow in the Authority's format in Appendix A.

Yours sincerely

Stephen Peterson
Director
Axos Systems Limited

Appendix A

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

Submitter	Axos Systems Limited
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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?	Set the review inside the wider market architecture, not only the contracts between the Authority and MOSPs. The largest costs and entry barriers come from functions that are duplicated across participants and tightly interconnected. We suggest a simple test for what belongs in central market infrastructure: a function should be centralised where it is both duplicated across participants and complex in its interactions. Functions that are duplicated but simple should be standardised and validated, not centralised. The registry, reconciliation, file exchange and a central metering data store meet the first test. Clearing and FTR do not. Beyond the wholesale roles, several services are duplicated across participants today and are strong candidates for centralisation: • Network outage files: centralised capture and validation. • Meter configuration: current industry data flows are not standardised or validated and limit the ability of retailers to understand metering costs and services from the registry. This increases switching costs and makes it very difficult to reconcile MEP invoices against installed metering equipment. • Metering data: a central, authoritative metering data set that participants draw from for data sharing and network settlement, and the reconciliation manager draws from for electricity market settlement, rather than each storing and validating the same information. These services also show how tightly the systems interlock: metering data feeds reconciliation, network settlement and MEP billing at once.
Q2. What do you think of the Authority's view of the future of MOSP services? What else should the Authority consider?	We agree that digitalisation, consumer participation and distributed energy resources require MOSP services to evolve, and we agree with the direction toward more central data management for the functions that warrant it. We differ on how consolidation is framed. The paper organises it around the wholesale settlement process and proposes combining reconciliation with clearing as the first step (paragraph 9.6). We recommend

organising it around market data, and combining reconciliation with the registry. Reconciliation determines and allocates physical volumes. It depends directly on registry responsibility and switching data, and it belongs with the data layer.

This pairing can begin as a contracting change rather than a systems build: one provider and one change-management framework capture the procurement benefit immediately, while system integration follows as the datahub design matures. That keeps the first step low-risk for other service providers and participants.

Clearing is a financial and prudential function with a different risk profile and skill set. Its dependence on reconciliation is real but narrow: reconciled volumes and wash-up revisions pass through one stable, well-defined interface.

Reconciliation's dependence on the registry is wide, and changes with every switching and market development. Combining the two simplifies procurement but is unlikely to reduce operational complexity, and it concentrates settlement, clearing and registry under one provider that already holds three of the four wholesale roles. That works against the contestability the paper seeks (paragraph 8.7(d)) and would complicate future procurement: a merged settlement, clearing and registry system would be entirely bespoke and harder to re-tender.

A future data hub aligns with the registry. The registry already holds the authoritative record of ICP identifiers, participant responsibilities, metering configuration and switching status. A data hub depends on exactly this to decide who may send, receive or access each data set. Run the hub with validation against the registry and the access layer is defined once rather than rebuilt across participants. Locating the hub separately would duplicate relationship data and add interface complexity.

We agree with the suggested split of the WITS functions (paragraph 9.12): wholesale data transfers belong with the data hub, and market results publication with the settlement role.

The same logic makes the registry the foundation for a central metering data store. The registry, data hub and CMDS should be designed as parts of one market-data architecture rather than as independent services. The Authority's digitalisation roadmap supports this: system architecture and data exchange are two of its three enablers, and a common information model and centralisation use cases sit in its short-term initiatives.

	The architecture should also be flexible enough for structures not yet fully defined: secondary networks, which are well defined in the current rules and include microgrids; community energy schemes; multiple-trader arrangements at an ICP, which are not yet established; peer-to-peer trading; flexibility services; and alternative retail models. New structures should be enabled in the central layer rather than requiring every participant to rebuild its systems each time, as this creates significant cost barriers for innovation that may benefit consumers. Flexibility is the clearest example. Its settlement has yet to be defined, but it could conceivably require a flex-load calculation, a dedicated meter, a special network tariff and a feeder-level critical-peak signal, which is one product touching several systems.
Q3. What factors should the Authority consider when investigating the need and benefits of a CMDS?	We support a central metering data store and consider it a core component of the market-data layer. The decentralised model, in which metering equipment providers, retailers and the reconciliation manager each store, validate, process and exchange substantially the same data, is duplicative and a source of inconsistency. The 2027 MOSP tender round and the CMDS workstream are the opportunity to set a framework in place that will enable innovation and new competitive models to participate. Subject to a design that does not limit innovation, we support establishing a CMDS ahead of the pressure that will come from any move to 5-minute pricing and reconciliation for settlement, from critical-peak-period pricing on networks, and from multiple traders at an ICP and settlement of flexible load. These changes will increase data volumes and complexity, and the need for timely, consistent metering data, beyond what the decentralised model can manage. We note the Authority's concern (paragraph 8.12) that a central store could constrain innovation but we don't think it has to. Specialised requirements, such as voltage and power-quality data, can operate alongside a CMDS and be managed through an effective data hub. The design answer to paragraph 8.12 is to fix the store's schema around settlement-grade consumption and injection data relative to financial obligations defined in the registry, and carry new or specialised data streams through the data hub, outside the regulated cost base, until they mature into Code-mandated requirements. One provider's innovation then never forces a central upgrade, and the industry adopts changes when there is a case for them rather than in lockstep. Factors to weigh:

	• implementation cost for participants and MOSPs, and ongoing operating and governance cost; • cybersecurity and Privacy Act risk from concentrating consumer and market data; • data ownership, stewardship and accountability; • the risk of a new central bottleneck for change, and how to keep the platform open and technology-neutral; • interoperability with existing systems and emerging distribution system operator platforms; and • resilience, business continuity, and responsibility for validation, correction and dispute resolution. The Authority should also decide whether the CMDS becomes the authoritative source of metering data for reconciliation, rather than relying on multiple copies across participants. Anchoring it on the registry keeps a single source of responsibility and access rights while avoiding duplicated master data.
Q4. What other examples of data sharing arrangements should the Authority consider?	Relevant examples include open banking, where consumers authorise access through standardised interfaces; distribution system operator data platforms emerging overseas; the Australian NEM CER data exchange, a central trust and verification service with standardised peer-to-peer transfers; and the United Kingdom's data sharing infrastructure and data spine. Common information models and interoperability frameworks from other utility sectors are also useful. The closest precedents for a CMDS are the Nordic datahubs: Denmark's DataHub has run since 2013, Norway's Elhub since 2019 and Finland's Fingrid Datahub since 2022. Each centralises metered consumption data and switching processes for the whole market. They show the model works at national scale, and they carry the caution: Elhub and the Finnish hub each took the better part of a decade from decision to go-live. Great Britain's market-wide half-hourly settlement programme offers the same lesson on migration sequencing and participant testing. The principles matter more than the specific designs: clear governance, open standards, participant neutrality, strong cybersecurity, consumer consent and transparent access rules. Both the NEM and UK models separate a central authorisation and verification layer from the data transfers themselves, which is the pattern we recommend for the registry and data hub here. Comparisons need care. New Zealand relies more on distributed participant systems than these markets, so the Authority should test whether targeted

	improvements to registry and data-access arrangements deliver much of the benefit before building entirely new infrastructure. The Code may also need to address terms in participant-to-participant contracts that create barriers, including ownership of metering information.
Q5. What else should the Authority consider in planning and scheduling changes to the MOSP services?	Changes to MOSP services usually trigger larger consequential changes across participant systems, especially where interfaces change in an uncoordinated way. The paper discusses MOSP costs. Participant costs are typically greater and more dispersed, covering business systems, interfaces, reporting, compliance, testing and operating procedures. These costs are ultimately paid by consumers, so each change should be justified by clear, measurable benefit, taking into account the potential for future innovation that may maintain downward pressure on consumer costs. Major MOSP changes are significant industry programmes that require substantial redevelopment, testing and participant investment. Global reconciliation and the introduction of metering equipment providers are both examples of the scale involved. Future changes should be planned with that scale in mind. We recommend the Authority: • adopt realistic timeframes and minimise overlapping change programmes; • give early visibility of the change roadmap and coordinate across workstreams; • require participant-inclusive cost-benefit analysis before significant changes; • allow adequate testing and transition periods; and • account for participant resource constraints and competing regulatory initiatives. Change should follow clear consumer benefit, measurable efficiency, or a real reduction in barriers to competition, rather than technical possibility alone. On sequencing, we recommend combining reconciliation with the registry as the first consolidation, expanding the registry hub toward the data hub with validation built in, and anticipating the CMDS as the core data component. Clearing and FTR should stay separate throughout. The nearest-term decision is the 2027 contracting round, and the ask there is modest: draft the contracts so this path stays open. Align change-management and data terms across the reconciliation and registry contracts, and avoid fusing reconciliation with clearing in ways that would be costly to unwind.