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Electricity Authority | Te Mana Hiko

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Tēnā koutou



## **SUBMISSION ON REQUIRING THE USE OF HALF-HOURLY DATA FOR WHOLESALE RECONCILIATION**

Unison Networks Limited (Unison) and Centralines Limited (Centralines) are consumer-owned electricity distribution companies operating in Hawke's Bay, Taupō, Rotorua, and Central Hawke's Bay. We welcome the opportunity to submit on the Electricity Authority's consultation paper: Requiring the Use of Half-Hourly Data for Reconciliation.

As consumer-owned entities, we operate in the best interests of the communities we serve. Guided by our vision, and values, we strive to deliver economic benefits to both our customers and community shareholders, while championing a sustainable energy future. We are committed to maintaining the right balance between keeping electricity affordable and making strategic investments that secure the long-term reliability and resilience of our network. In all aspects of our operations, we place strong emphasis on meeting industry compliance requirements, ensuring we uphold all relevant standards. This approach not only supports New Zealand's transition to new energy solutions but also enables our communities to access cleaner, smarter, and more flexible energy options, now and for generations to come.

### **Executive Summary**

Unison and Centralines support the proposed requirement to use half-hourly data for wholesale reconciliation. While this transition will require upfront investment from retailers and other participants, the long-term benefits to consumers and the wider electricity system are considerable.

We agree that moving to full half-hourly reconciliation is a logical and timely step that will:

- Improve settlement accuracy across the wholesale market.
- Deliver fairer and more transparent billing for consumers.
- Strengthen price signals that support demand response and flexibility.
- Enable better reconciliation between wholesale, retail, and distribution systems.

For consumers, improved metering and reconciliation accuracy builds trust in how energy is charged and enables flexible pricing options that reward efficient energy use. A coordinated approach will ensure the transition is efficient, equitable, and aligned with broader sector goals.

## 1. The Role of Profiling and Data Granularity

As the sector transitions to full half-hourly reconciliation, managing the shift away from legacy profiling will be critical for fairness and operational efficiency. Different levels of data granularity have distinct implications:

Data Type	Description	Benefits	Risks/Challenges	Requirements/Recommendations
Profiled data	Load profiles (average usage shapes) used to estimate consumption in each half-hour when actual interval data wasn't available	Practical necessity in the past	Undermines accuracy and equity for smart meter customers, can distort settlement outcomes if most have interval meters	Carefully limit and phase out profiled data
Aggregated data	Sum usage at a feeder or network node for processing and privacy reasons	Efficient for processing and privacy	Aggregation without robust reconciliation can mask discrepancies, misrepresent usage	Build on accurate disaggregated readings, rigorous validation, clear standards for data validation and estimation
Disaggregated half-hour data	Meter data for each ICP (connection point) on a half-hourly basis	Maximum transparency, enables cost-reflective pricing, tailored services, unlocks value of flexibility services and DER coordination	Disaggregation may result in greater privacy concerns and increased operational complexity.	Granular data is essential, measure customer contributions to peak demand and network usage

In summary, the industry should move from profiled to disaggregated data as practical, using aggregated data carefully and only as needed for efficiency. This progression ensures that each consumer's actual behaviour drives outcomes like billing and network planning, which is fundamentally fairer and more efficient than historical averaging methods.

## **2. Whole-of-System Implications of Half-Hourly Reconciliation**

Shifting to mandatory half-hourly data will reverberate across the electricity system affecting how we price electricity, operate networks, and protect consumers. We outline key implications below:

### **2.1 More Accurate Cost Allocation and Pricing**

With precise interval-level consumption data, costs can be more accurately assigned to when and where they occur, supporting time-of-use and capacity-based pricing. Since network and generation expenses depend on peak demand and energy prices vary by time, half-hourly data ensures tariffs match real usage patterns.

This approach means consumers are charged based on their actual habits instead of averages. For instance, those who mostly use electricity off-peak will pay less than those increasing peak demand, even if both use the same total kWh. Such targeted pricing improves fairness, reduces cross-subsidies, and provides better incentives for efficient investment. As a result, people and businesses can manage costs with technologies like smart appliances and batteries, lowering system peaks and delaying infrastructure upgrades.

### **2.2 Improved Network Visibility and DER Integration**

Comprehensive half-hour data further supports the integration of distributed energy resources (DERs), including rooftop solar systems, battery storage, and electric vehicle chargers. With accurate information about asset operation times and locations, distributors can efficiently coordinate these resources and adopt new grid management responsibilities, such as those required by Distribution System Operators (DSOs). Forthcoming initiatives, like Dynamic Operating Envelopes (DOE's), will rely on broad availability of half-hourly data to ensure safe and efficient grid operations. Ultimately, these reforms equip the network to accommodate emerging technologies and renewable energy sources, delivering benefits to all consumers.

### **2.3 Stronger Alignment Between Wholesale and Network Signals**

The consistent application in both wholesale market reconciliation and distribution network charging promotes coherence and reinforces price signals throughout the energy sector. Currently, discrepancies may occur when wholesale market charges do not correspond with distribution tariffs, which can result in retailers either under-recovering or over-recovering consumer costs in particular time intervals. Implementing a standardised half-hourly consumption profile ensures that wholesale costs and distribution charges accurately reflect consumer usage within each respective half-hour period.

This alignment establishes strong incentives for constructive consumer behaviour. When energy and network charges are synchronised during peak periods, consumers are provided with clear motivation to reduce or shift their consumption, thereby supporting demand response initiatives. In contrast, off-peak periods feature lower aggregate energy and delivery charges, encouraging beneficial activities such as electric vehicle charging or water heating to help balance load profiles. Such systematic efficiency contributes to

decreased generation fuel costs and reduced network stress during periods of high demand. Over time, increased coherence between wholesale and network pricing drives broader efficiency gains across the system, ultimately resulting in cost savings for consumers.

## **2.4 Adjustments to Systems and Processes**

The shift to half-hourly data reconciliation will greatly increase data volumes and transaction frequency, requiring participants and the Reconciliation Manager to ensure their billing and IT systems can efficiently handle 48 trading periods per day per ICP. Systems must also be updated for revised reconciliation cycles.

Participants need to adapt procedures for meter data validation, estimation, and editing at half-hour intervals. The Reconciliation Manager's responsibilities for data quality will grow, requiring swift correction of discrepancies to avoid widespread impacts. Upgrading system capabilities will likely reduce manual work and improve billing accuracy.

## **2.5 Integration with other reforms and regulatory oversight**

This initiative supports ongoing regulatory efforts to make the sector more efficient and consumer focused. It aligns with Distribution Pricing Reform and aims to standardise pricing and improve tariffs based on detailed usage data. Recommendations:

- Match implementation timelines with other initiatives like billing standards and DDA changes to avoid duplicated work and conflicting obligations.
- Ensure the Authority and Commerce Commission use consistent definitions, validation rules, and reporting requirements for new metrics enabled by richer data.
- Use shared datasets for unified reporting, allowing participants to fulfil multiple compliance needs with a single submission.

## **3. Wash-Up Files and Distribution Billing Alignment**

Half-hourly reconciliation will introduce new complexities in how “wash-up” adjustments are handled across the wholesale market and distribution billing. It is key to ensure that the processes for correcting and truing-up data remain coordinated between what the Reconciliation Manager does for the wholesale market and how distributors bill retailers under Default Distributor Agreement (DDA). Key areas that need attention include wholesale vs. distribution wash-up timing, DDAs, and treatment of UFE and Loss Factors.

### **3.1 Wholesale and Distribution Wash-Up Process Coordination**

When all participants are settling in half-hour increments, wash-up files (reconciliation revisions) will become more frequent and data intensive. Distributors rely on the Reconciliation Manager's outputs for their own billing, so any misalignment could cause billing disputes or cashflow issues. Three focal points are:

- *Increased Data Granularity:* With half-hour data, each wash-up revision (e.g., the month 5 and month 13 reconciliations under the proposed new timetable) will involve

reprocessing a very large volume of interval data. Billing systems must be capable of ingesting these detailed wash-up files. If a system currently only handles monthly kWh totals, it will need upgrades to handle 48 periods × N days × thousands of ICPs adjustments. Ensuring this capability is in place will allow retailers and participants to invoice correctly after each wash-up, preserving the integrity of the revenue cycle.

- *Alignment Between Wholesale and Distribution Wash-ups:* It's essential to keep both the timing and methods of wash-ups coordinated. For instance, if the Reconciliation Manager provides an updated data file five months after the initial period, distributors should also send their corresponding wash-up network invoices at that time. Methodologies must also agree for example, if the market wash-up adjusts volumes, those same revised volumes and loss factors should be used in distribution charges. Ultimately, both parties need to ensure they're following consistent practices.
- *Exception Handling and Validation:* Transitioning may lead to missing, late, or incorrect data and metering faults. Industry-wide protocols for these exceptions are essential for fairness and consistency. For example, there should be a standard process for submitting and communicating metering corrections discovered after 60 days. We recommend creating unified guidelines for managing late and substituted data, with the Reconciliation Manager overseeing validation. This approach will help reduce disputes and ensure equal treatment of all participants.

### 3.2 Implications for Default Distributor Agreements (DDAs)

Default Distributor Agreements (DDA) will need to be updated to reflect the new reconciliation regime. To support the transition to half-hourly data, DDAs should incorporate the following aspects:

DDA Aspect	Required Update
<b>Use of Half-Hourly Data</b>	Acknowledge half-hourly interval readings as the basis for network billing and reconciliation. The DDA should set expectations for data quality (e.g. compliance with the Code's validation standards), timing (submission deadlines for data), and processes if data is not delivered on time. This creates a contractual alignment that all billing will now hinge on interval data.
<b>Wash-Up Provisions</b>	Define clear terms for conducting wash-ups in network charges. For example, specify that after each wholesale reconciliation revision (at month 5 and month 13, under the new proposal), the distributor will re-calculate charges and either invoice additional amounts

	or provide credits. Include timeframes for issuing wash-up invoices, dispute resolution mechanisms if there's disagreement on volumes, and how interest or carrying costs might be handled for corrected amounts.
<b>Loss Factor Application</b>	The DDA should specify how <b>loss factors</b> apply half-hourly, using the same method as the wholesale market to convert an ICP's metered consumption to at-grid values. The agreement must detail how loss factors are calculated, shared, and updated, ensuring consistency in wholesale and distribution charges to prevent unfair advantages from differing loss assumptions.
<b>Clarify UFE treatment</b>	More granular data will make UFE (from technical losses, theft, and errors) more apparent. The DDA should state if UFE continues to be allocated to retailers by load proportion or changes under the new system, and specify responsibilities for example, confirming that market reconciliation calculates UFE, and noting any new duties such as providing data to identify UFE sources.

These DDA updates will reinforce the expectations for both distributors and retailers in the new environment. We believe proactive DDA revisions, done in consultation with retailers, and distributors will prevent misunderstandings once half-hour data is in use. It ensures all parties have a clear contractual roadmap for billing, corrections, and data quality responsibilities.

Leveraging half-hourly data can enhance transparency by identifying previously unaccounted energy and strengthening accountability. To facilitate a smooth transition to half-hour reconciliation, it is essential to align wash-up processes, update DDAs, and clarify the treatment of UFE and loss factors, thereby minimising the risk of new disputes or imbalances. Proactive collaboration among all stakeholders including distributors, retailers, and the Authority will be critical for addressing these matters in advance and ensuring an efficient implementation process.

### 3.3 Anticipated Benefits vs. Costs (Regulatory Analysis)

Key Benefits	Description
Stronger Price Signals & Demand-Side Flexibility	Aligning retailers' costs with actual half-hourly usage, stronger incentives for cost-reflective pricing, enables informed consumer decisions, unlocks significant demand-side flexibility
Improved Reconciliation Accuracy & Reduced UFE	Actual half-hour data improves market reconciliation and settlements accuracy, reduces errors from profiling, drop in UFE, more accurate invoices, efficiency gain (allocative efficiency)
Simplified Wash-Up Cycle	Elimination of three-month wash-up, acceleration of final wash-ups to 5 and 13 months, earlier certainty for participants, reduced administrative overhead, improved initial accuracy enables reduction
Improved Cash Flow Certainty	Final quantities determined sooner, fewer surprises, better hedging and financial management for traders, potential reduction in risk premiums
Process Simplification & Data Quality Improvements	Mandatory detailed submissions streamline reconciliation, Reconciliation Manager aggregates metered quantities, eliminates duplicate systems, lowers industry costs, powerful data validation, higher data quality, lower entry barriers for new retailers
System Implementation Costs (~\$3 million total)	NZD \$6 million PV, half one-time, half ongoing; \$3 million one-time aggregate; retail upgrades (\$1.7M for largest 14 retailers, \$0.9M for smaller retailers), Reconciliation Manager (\$0.2M - \$0.3M for new capabilities)
Ongoing Operating Costs (~\$3.35 million NPV over 25 years)	Higher data volumes, telecommunications bandwidth, data storage, software license costs, Reconciliation Manager (\$25k-\$50k/year), retailers (higher hosting/service fees), \$3.35M present value over 25 years
Participant-Specific Impacts	Smaller traders/service providers may feel costs more acutely, proposal includes at least 12 months' notice, opportunities for cost-sharing or common solutions (industry-provided data exchange platform)
Cost Benefit Analysis	Benefits outweigh costs by considerable margin, demand-response and peak reduction benefits could be many millions per year, positive cost benefits for New Zealand, promotes efficient investment, long-term benefit for consumers
Long-Term Gains	Consumer trust, operational efficiency, system flexibility justify investment, implementation requires effort and expense, long-term gains more than justify investment

4. Risks and Mitigations for the Wholesale Market

The transition to mandatory half-hourly data submission introduces operational and market risks that must be proactively managed to ensure successful implementation and enduring consumer benefit.

Table 4: Risks and Mitigation Approaches for Wholesale Market Transition to Half-Hourly Reconciliation

Risk	Impact	Mitigation Approach
Data accuracy and completeness	Incomplete or inaccurate data could compromise settlement integrity and lead to disputes between participants.	Establish industry-wide validation standards (e.g., timestamp accuracy, substitution protocols). Stage implementation to test data flows and identify issues early.
System and process readiness	Increased data volumes may strain participant and market systems, affecting performance and reliability.	Undertake capacity testing, adopt scalable cloud-based solutions, and provide a transition window for system upgrades.
Cost pressure on smaller participants	Smaller traders and service providers may face disproportionate compliance costs, impacting viability.	Offer implementation guidance, shared data exchange tools, and flexible transition timelines for low-volume participants.
Wholesale market liquidity and cash flow impacts	Greater settlement precision may shift exposure patterns, creating short-term volatility.	Coordinate settlement cycles and provide clear guidance on expected cash flow adjustments to support financial planning.
Consumer misunderstanding	Changes to billing formats or data presentation may be perceived as errors or price increases.	Implement coordinated consumer education campaigns to explain the benefits of fairness, transparency, and improved accuracy.



## 5. Implementation and Transition Considerations

To ensure reforms deliver on the Electricity Authority's statutory objectives under Section 15 of the Electricity Industry Act 2010, to promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long-term benefit of consumers and align with MBIE's consumer outcomes framework for competitive, fair markets, we recommend:

**Table 5: Recommended Implementation Actions**

Recommendation	Action	Rationale
Establish a Cross-Sector Working Group	Form a collaborative forum including retailers, distributors, metering providers, and consumer representatives to coordinate readiness and resolve interdependencies.	Cross-sector coordination supports the Authority's objective of efficient operation by reducing implementation risk and promoting transparency. A structured working group ensures reforms reflect consumer interests and avoid fragmented approaches that could undermine competition and reliability. This aligns with MBIE's principle of informed consumers and competitive markets.
Publish Clear and Practical Guidance	Provide comprehensive technical and operational documentation covering validation standards, loss factor treatment, exception handling, and data reconciliation protocols.	Clear guidance is essential for consistent implementation, reducing billing errors and disputes that erode consumer trust. This supports the Authority's statutory goal of efficient operation and MBIE's outcome of fair markets by enabling participants to comply effectively and maintain confidence in pricing transparency.
Allow Sufficient Lead-In Time	Provide a minimum of 12 months from the final decision to implementation, allowing for system upgrades, process adjustments, and stakeholder engagement.	Adequate preparation time prevents rushed deployments that risk service disruptions and consumer harm. This approach promotes reliability and efficiency, directly supporting the Authority's statutory objectives and MBIE's focus on affordability and equitable access.

Coordinate with Parallel Reforms	Align pricing and disclosure initiatives with other regulatory changes to create a coherent roadmap that enhances transparency and avoids duplication.	Regulatory fragmentation increases complexity and cost, ultimately impacting consumers. Synchronizing reforms ensures consistency, reduces duplication, and provides a predictable pathway for market evolution advancing competition and efficiency as required under Section 15 and reinforcing MBIE's commitment to competitive systems.
Enable Optional Granular Data Access for Networks	Facilitate access to detailed consumption data to support network visibility, DSO functions, flexibility trials, and DER integration.	Granular data enables smarter grid management and innovation, improving reliability and cost efficiency. This supports the Authority's objectives of efficient operation and reliable supply, while aligning with MBIE's emphasis on dynamic, agile systems that enable innovation for consumer benefit.
Monitor Consumer Outcomes Post-Implementation	Track billing accuracy, consumer trust indicators, and evidence of flexible energy use to confirm the reform delivers tangible benefits for end users.	Continuous monitoring ensures accountability and validates that reforms achieve their intended objectives. Measuring consumer-centric metrics reinforces the Authority's statutory obligation to deliver long-term benefits and MBIE's focus on informed, empowered consumers.

## 6. Consumer Impacts

The transition to mandatory half-hourly data reconciliation is expected to deliver substantial long-term benefits for electricity consumers, while introducing transitional considerations that must be carefully managed to avoid unintended consequences.

### 6.1 Fairer and More Accurate Billing

Consumers will benefit from billing that accurately reflects their actual usage patterns. Under the current profiling system, consumption is averaged across time periods, creating cross-subsidies where off-peak users effectively subsidize those consuming more during peak periods. Half-hourly data eliminates these distortions by aligning charges with actual usage, enabling fairer cost allocation and reducing hidden inequities.

### 6.2 Greater Choice and Control

Granular consumption data empowers retailers to offer innovative, cost-reflective pricing plans. Consumers will gain access to time-of-use tariffs, off-peak discounts, EV charging plans, and other tailored offerings that reward flexibility. This enables informed decision-making and allows consumers to lower bills through simple behavioural changes, supporting affordability and energy efficiency.

### 6.3 Enhanced Transparency and Trust

Interval data provides consumers with detailed insights into daily and half-hourly electricity usage. Greater transparency builds trust in billing processes and supports improved energy literacy. Many retailers already offer usage dashboards, and these tools will become more accurate and widespread as half-hourly data becomes the standard, reinforcing confidence in the market.

### 6.4 Enabling Participation in the Energy Transition

Consumers with distributed energy resources (DERs) such as rooftop solar, batteries, or electric vehicles will be better positioned to participate in emerging flexibility markets. Accurate half-hourly data enables precise measurement of exports and demand response, allowing consumers to be rewarded for contributing to grid stability and efficiency. This supports innovation and accelerates the transition to a low-carbon energy system.

## 7. Conclusion

Unison and Centralines, as community-owned networks committed to transparency, fairness, and enduring value, support requiring half-hourly data for reconciliation. This reform will deliver more accurate billing, stronger price signals, and improved coordination across wholesale, retail, and distribution systems. It also lays the foundation for flexibility markets, future DSO and DOE functions, and empowers consumers to make informed energy choices.

Aligning implementation with distribution pricing reform, enhanced network visibility, and broader sector efficiency initiatives will maximise benefits. With careful planning and collaboration, this transition can be smooth, equitable, and transformative reshaping how electricity is priced, billed, and managed for the long-term benefit of all New Zealanders.

We look forward to working with the Authority and industry partners to ensure a successful implementation and are available to provide further operational input as needed. No part of this submission is confidential; we acknowledge it will be published. Please contact us for further information, including on operational requirements.

Nā māua noa, nā

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## Format for submissions

Submitter	Unison Networks Limited
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Questions	Comments
Q1. Do you agree the issue identified by the Authority is worthy of attention?	Yes, legacy profiling and the ability for participants to avoid submitting available half-hourly data undermine fairness and efficiency in the wholesale market. These practices distort cost allocation and weaken price signals, which in turn affect consumer trust and system planning. Addressing these gaps will improve settlement accuracy and deliver fairer outcomes for consumers, supporting the sector's transition to a more flexible and transparent energy system.
Q.2 Do you agree with the objective of the Code amendment proposal? If not, why not?	We agree with the objective. Requiring the use of half-hourly data for reconciliation aligns with the Authority's goals of improving settlement accuracy, enabling transparent and fair billing, and strengthening price signals that encourage demand-side flexibility. It also supports better reconciliation between wholesale, retail, and distribution systems, which is essential for integrating distributed energy resources and achieving long-term consumer benefits.
Q3. Do you agree with the Authority's 'minimum change' implementation approach?	We support a measured and coordinated implementation approach, provided it is complemented by clear protocols and alignment with other reforms. Timelines should be coordinated to avoid duplication of effort and unnecessary costs. Wash-up processes need to be synchronised across wholesale and distribution sectors, and system upgrades should be planned to minimise disruption. While a minimum-change approach is pragmatic, enhancements such as explicit exception handling and defined roles and responsibilities will be necessary to ensure smooth implementation.
Q4. Do you agree the Authority has correctly identified the benefits and costs of the proposed amendment?	Yes, we agree the Authority has correctly identified the benefits and costs. The benefits include improved cost allocation and tariff design, enhanced network visibility, stronger alignment of wholesale and network signals, and fairer billing for consumers. These changes will also enable greater consumer choice and participation in the energy transition. The costs, primarily upfront investment in systems and process changes, and the complexity of coordinating wash-up adjustments, are acknowledged. These costs can be mitigated through careful planning and alignment with other regulatory initiatives.

<p>Q5. Do you agree the benefits of the proposed amendment outweigh its costs?</p>	<p>Yes, while there will be initial investment required for system upgrades and process changes, the long-term advantages such as fairer and more accurate billing, stronger price signals, improved reconciliation, and better integration of distributed energy resources will deliver enduring value to consumers and the electricity system. These benefits justify the transition and align with the Authority's statutory objectives.</p>
<p>Q6. Do you agree the proposed amendment is preferable to the other options? If you disagree, please explain your preferred option by reference to the Authority's statutory objective in section 15 of the Electricity Industry Act 2010.</p>	<p>Yes, we consider the proposed amendment to be the most appropriate option. Full half-hourly reconciliation is a logical and timely step that supports cost-reflective pricing and efficient investment. Maintaining the status quo or relying on aggregated data would perpetuate inefficiencies and cross-subsidies. If interim measures are necessary, they should be clearly defined as temporary, with a clear pathway toward full implementation to ensure alignment with the Authority's objectives.</p>
<p>Q7. Do you agree the proposed amendment complies with sections 17(1) and 32(1) of the Electricity Industry Act 2010?</p>	<p>Yes, the proposed amendment complies with these sections. It promotes competition by enabling cost-reflective tariffs and innovative retail offerings, supports efficiency through improved demand response and network visibility, and enhances reliability by providing accurate data for system planning. Ultimately, it delivers long-term benefits to consumers by ensuring fairer pricing and enabling participation in the energy transition.</p>
<p>Q8. Do you have any comments on the drafting of the proposed Code amendments?</p>	<p>We do not have detailed drafting comments but recommend that the Code reflect practical considerations highlighted in our submission. These include aligning definitions and validation rules with other reforms, clarifying wash-up coordination and exception handling protocols, incorporating updates to Default Distributor Agreements, and clearly allocating responsibilities for data quality and system changes. These measures will help ensure the drafting supports efficient and effective implementation.</p>