Your views on the opportunities and challenges of a digitalised electricity system

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Summary of information submitted

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Yes

Who are you submitting as? *

Industry participant

First name *

[redacted]

Last name *

[redacted]

Email *

[redacted]

1. What could stop or slow digitalisation of the electricity system? What would make it successful? How far should digitalisation go?

Counties Energy Limited (CEL) considers that barriers include legacy infrastructure, unnecessary [legacy] contractual barriers, fragmented data standards, cybersecurity risks, and uncertainty around regulatory settings. A critical and often overlooked challenge is the difficulty of understanding the value of digital investments due to the limited information available — this can prevent access to data, delay infrastructure upgrades, and hinder innovation adoption. For CEL, alignment across sector participants—particularly in Distributed Energy Resource (DER) integration, data-sharing protocols, and investment signals—is vital.

Success hinges on clear national standards, open information-sharing operating models, adequate funding for upgrades, and trust in data governance. Digitalisation should extend to all core operational and customer-facing systems, enabling real-time visibility, flexibility markets, and consumer-driven participation—but with a measured pace ensuring reliability and equity.

The end goal should be to make the energy system more efficient and to unlock every possible value opportunity for customers. Participants and regulators can play a key role in sharing the lessons learned from new innovations to help grow and evolve the industry. Overcoming these barriers will be key to enabling investment in digitalisation that delivers system-wide benefits.

2. Do you agree with how we have defined 'data' and 'information', especially in the context of making data more visible?

Yes, we broadly support the distinction. Clear definitions help align technical and strategic discussions. However, it's important to recognise that for a distributor like CEL, real-time network operational data (e.g. from smart meters or SCADA) blurs the line between 'data' and 'actionable information' in practice. Ensuring definitions are consistent across the sector (and compatible with the Ministry of Business, Innovation & Employment's (MBIE's) work on Consumer Data Rights) will be key.

3. What data do you think needs to be more visible?

Critical areas include low voltage (LV) network capacity, real-time DER availability (solar, batteries, EVs), and time-of-use consumption. Greater visibility into connection queues, outage events, and hosting capacity maps would benefit retailers, aggregators, and prosumers. CEL supports visibility efforts but notes that system security, privacy, and technical capability (especially at the LV level) must be balanced.

4. What challenges do you think we might face in trying to increase visibility? What considerations need to be given to data privacy or cybersecurity? How could increasing visibility create more opportunities for consumers, participants and innovators?

Visibility challenges include inconsistent data formats, low trust in data-sharing, legacy platforms & commercial constructs, and gaps in cybersecurity maturity. From a distributor's view, sharing granular LV network data or customer-level energy flows requires strong access controls and privacy frameworks. A further challenge is the difficulty in progressing business cases without clear direction on the expected value or use of this data from a regulatory and system planning perspective. Without a shared understanding of how this visibility will be used—and who benefits—it is difficult for Electricity Distribution Businesses (EDBs) to justify the investment needed to unlock and share it.

That said, visibility can unlock new value streams—enabling dynamic pricing, flexibility services, and innovation in grid-edge solutions. Opportunities abound if standards and safeguards evolve in parallel. Another potential barrier is the cost to access the data—this area also has opportunity to streamline to ensure consistency and fairness.

5. What work are you planning or doing to increase visibility within the electricity system? Are you aware of any work that contributes to this goal?

CEL is investing in LV network monitoring, advanced metering integration, and DER management systems. We've piloted real-time outage and capacity mapping tools and are engaged in joint working groups (e.g. with the Electricity Engineers Association and FlexForum) on data visibility frameworks. We're also closely monitoring MBIE's Consumer Data Right work and Energy Efficiency & Conservation Authority (EECA)-led DER interoperability pilots.

6. What challenges do you think we might face in increasing interoperability? What other opportunities do you think greater interoperability will bring?

Challenges include vendor lock-in, lack of data protocol alignment with Australia, lack of national technical standards (especially for APIs), and coordination across numerous actors. As a distributor, integrating systems across metering, SCADA, Distributed Energy Resource Management Systems (DERMS), and customer engagement platforms is complex. A further challenge is that authentication and authorisation across diverse systems and connected devices—especially at the edge of the network—are non-trivial. Each device and system may have different protocols, credentials, and access requirements, making secure and scalable interoperability difficult to achieve.

Yet interoperability enables seamless participation in flexibility markets, easier DER integration, and streamlined compliance/reporting. It could also foster platform-based innovation and new business models—provided identity, access, and security standards evolve in parallel.

7. What work are you planning or doing to increase interoperability within the electricity system? Are you aware of any work that contributes to this goal?

We are modernising our systems architecture to support open APIs and data exchange standards, including aligning with emerging DERMS specifications, in direct alignment to protocols being used by the Australian market/Distribution Network suervice Providers (DNSPs). CEL also supports national initiatives like the Electricity Network Association's (ENA's)data and interoperability taskforces. We're working to decouple systems and introduce middleware that allows for open, vendor-neutral integration of future technologies.

8. What challenges do you think we might face in simplification? How could simplifying create more opportunities?

Simplification is often constrained by regulatory complexity, legacy contracts, and system silos. For example, retail switching or consumer engagement around flexibility services can involve multiple steps and unclear incentives. Simplification, when done well, reduces transaction costs and lowers the barrier for consumers to participate in energy innovation. It also enables easier coordination across participants and greater scalability for new services.

9. What work are you planning or doing to increase simplification within the electricity system? Are you aware of any work that contributes to this goal?

CEL is working to streamline customer processes—from new connections to DER participation—by redesigning digital interfaces and automating back-end workflows. We're also simplifying internal systems by consolidating data silos and moving toward cloud-native platforms. However, a key challenge we continue to encounter is the lack of consistent semantic data models across systems—making it difficult to meaningfully align, interpret, and integrate datasets from different sources.

Externally, we contribute to collaborative projects aimed at standardising tariff structures and improving retail switching processes, where semantic consistency across participant systems is essential to ensuring accurate and efficient outcomes.

10. Do you have any other comments on this paper?

We welcome the Electricity Authority's leadership in articulating a vision for digital transformation and appreciate the opportunity to participate. Coordination with the Commerce Commission (ComCom), MBIE, EECA, and other regulatory agencies will be crucial to avoid duplication or misalignment. We encourage the Electricity Authority to consider long-term investment signals and funding models that support infrastructure upgrades needed to realise digitalisation objectives—particularly in the low-voltage network domain.

Written feedback and/or supporting documentation

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Yes