Part of Energy Queensland

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Mr Nick Regan
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Dear Mr Regan

Ergon Energy Network and Energex submission – CER Data Exchange Industry Co-Design Consultation Paper

Ergon Energy Corporation Limited (Ergon Energy Network) and Energex Limited (Energex), both distribution network service providers (DNSPs) operating in Queensland, welcome the opportunity to provide feedback to the Australian Energy Market Operator (AEMO) in response to the *Consumer Energy Resources (CER) Data Exchange Industry Co-Design Consultation Paper* (the Consultation Paper).

We thank AEMO for its efforts, in partnership with AusNet Services, to conduct a collaborative co-design process for the first stage of the development of a national CER Data Exchange. We also thank the Australian Renewable Energy Agency for its support through a grant from its Advancing Renewables Program.

Overall, a CER Data Exchange is a significant step towards supporting the digital transformation of the electricity system and market from large-scale generation to CER orchestration. In our view, the magnitude of this change is similar to the change seen in the telecommunications sector, when the roll-out of smart phones to the mass market almost two decades ago led to the development of a plethora of new business models with telecommunications-based integration requirements. As a result, we think it is important to take a strategic digital transformation approach and avoid falling back onto the assumptions that underpin pre-transformation operating and business models.

Global developments

We believe that collectively we should embark on a pathway to an integrated industry data platform that supports the evolution of digital ecosystems within the energy sector and beyond. This is in line with global trends, such as the UK Digital Spine, which is referenced throughout the Consultation Paper.[1]

[1] Digital spine feasibility study: exploring a data sharing infrastructure for the energy system - GOV.UK (www.gov.uk).

When analysing the implementation options available, we think it would be prudent to follow the advice of the information technology research and advisory experts at Gartner. They recommend an industry-wide approach based on multi-(hyperscaler) cloud interoperability with "…utility-led, jurisdiction-specific, cloud platforms to host industry software vendors to run the digital infrastructure needed to accelerate the integration of DERs (as in distributed energy resources) and drive the energy transition. Utility consortiums will lead the way to reduce risk and cost by cooperating to deliver a mutually beneficial operational cloud."[2]

Modern, hyperscaler cloud based as-a-service (aaS) approaches can provide "evergreen" models and "jumpstart" out-of-the-box functionality for many data exchange features. This will avoid expensive software renewal projects in the medium and long-term, allow incremental growth, and also provide the potential to evolve over time in step with global data ecosystem transformations. It is also consistent with contemporary and evolving data space approaches overseas, with two examples being the North American Total Grid Orchestration Alliance and the European Interoperability Network for the Energy Transition (Int:net).[3]

Gartner further elaborates in recent research that this approach will open doors for adopting Data Market Place and Exchange capabilities that hyperscaler cloud vendors will mature within the next two-five years.[4] We note these capabilities are already becoming visible, for example Amazon Web Services has a maturing Data Market Place that is already starting to be adopted by other sectors.[5]

Assessing the benefits from a DNSP perspective

We suggest caution when assessing the benefits of the CER Data Exchange for grid management and DNSPs, for example the benefits included in Figures 5 and 6 in the Consultation Paper. DNSPs have little immediate need for information from the CER Data Exchange, rather they are mainly a source of information that market participants wish to see. Under current arrangements, DNSPs do not have information on the relevant electricity retail plans or aggregator relationships that customers have. One benefit for DNSPs that may eventuate would be that customer agents develop retail products that flexibly align customer benefits with network requirements. Another benefit may be growth in the flexibility market. However, neither will likely support DNSPs in the short to medium term.

The role of standards

Similarly, we suggest caution when assessing the role and importance of standards in relation to the CER Data Exchange, for example as contemplated in Figure 8 of the Consultation Paper. The message should be that while industry standards alone will not suffice to establish sector-wide data exchange, they are an essential component of the architecture.

We note there is a strong global drive to develop data interoperability standards for industry and cross-sector data exchanges, with examples including:

[2] Predicts 2024: Power and Utilities, Disruption of DERs (gartner.com).
[3] Defining TGO Concepts (tgoalliance.org) and Home - Int:net (intnet.eu).
[4] Secure a Competitive Edge With Data Ecosystems: A Comprehensive Guide (gartner.com) and Hype Cycle for Data Management, 2024 (gartner.com).
[5] Data Marketplace - AWS Data Exchange - AWS (amazon.com).

- Int:net's adoption of a Smart Grid Interoperability Maturity Model and continuous adoption of semantic data standards, including the Common Grid Model Exchange Standard;[6]
- the International Data Space Association's Interoperability Framework in Energy Data Spaces, which considers standards related to federated integration and trust;[7] and
- the United Nation's Global Digital Compact, which includes a commitment to "Develop data and metadata standards …" to "… promote interoperability and facilitate data exchanges", and "develop common definitions and standards on the use and reuse of data for public benefit."[8]

The appropriateness of extending IDX

We note that an extension of the Industry Data Exchange (IDX)—a reform initiative focused on modernising existing data exchange capabilities in the National Electricity Market—is being positioned as a solution for the CER Data Exchange. It is also included as a supporting assumption of the Identity and Access Management/IDX/Portal Consolidation Business Case from July 2024.[9] We agree it would be prudent to have a single shared future industry ecosystem data exchange platform. However, we have concerns that in the planning and concept design for IDX, the strategic requirements for future-proofing may not have been considered sufficiently.

While the IDX information included in the Consultation Paper's Appendix A2 is not sufficient to assess the potential of IDX to evolve to meet future requirements, the IDX business case[10] referenced in the Consultation Paper provides the following insights:

- The strategic considerations of supporting scalability and future use cases appear to mainly focus on standardisation, cyber security risk, and known National Electricity Market reforms (including the CER Data Exchange, also called the "DER Data Hub"). There is no visible consideration of expanding data and digital ecosystems across and beyond the sector, and no notion of moving from legacy to contemporary digital platforms.
- The design is described as "hybrid on-premise / cloud", with the rationale given as resilience. While little detail is provided, this raises concern that the solution may not be cloud-native, which would exclude leveraging cloud-native service options that would enable a hyperscaler multi-cloud interoperability-based approach, as recommended by Gartner.
- Federated exchange patterns are not supported. The closest are peer-to-peer exchange patterns through end points published centrally. Participants install AEMO supplied software to communicate with centralised AEMO services. The naming of the software packages in the strategic target state diagram in the business case is the same as today. Currently, these software packages are based on standard relational database management system technologies, for example Oracle and SQLServer.[11] A technical specification for IDX has not been able to be shared by AEMO.

These findings reinforce the need to consider strategic industry and cross-sector data ecosystems and contemporary technology approaches, before committing to an approach

[6] Data & Standardisation (entsoe.eu).
[7] Interoperability Framework in Energy Data Spaces (zenodo.org).
[8] Global Digital Compact | Office of the Secretary-General's Envoy on Technology (un.org)
[9] F&S Business Case (aemo.com.au).
[10] AEMO | Market Interface Technology Enhancements.
[11] Electricity data model (MMSDM) (aemo.com.au).

that may not meet future requirements and may have to go through another expensive renewal cycle in the medium term.

Design principles

Given all of the above and, in particular, how hyperscaler cloud based aaS approaches provide evergreen models that will evolve over time, we propose the following design principles for the CER Data Exchange:

- **Cloud-native data infrastructure**, which supports both secure centralised and local data exchanges, as well as incremental implementation, scalability, and flexibility;
- **Standardised digital components and specifications** that enable and simplify participation for industry organisations of all types and sizes;
- **Industry-wide collaboration and decision making**, to ensure the industry data exchange approach and infrastructure can and will be adopted and continuously improved for the greater good of the whole industry and customers;
- **Service-based operating model** with clearly defined roles and responsibilities for the service provider, which facilitates and enables industry-wide collaboration and decision making; and
- **Future proof technology choices and composable architecture**, which will support a high penetration of dynamically coordinated DER/CER, support standards adoption, support safe and secure industry innovation, support big data and the internet of things, can easily adapt to new regulatory requirements and other use cases, and support the evolution of digital ecosystems beyond the electricity sector.

Our more detailed responses to the Consultation Paper's questions are also enclosed.

Should AEMO require additional information or wish to discuss any aspect of this submission, please contact me on 0429 394 855, or Andrew Bozin on 0436 447 814.

Yours sincerely

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Encl: Ergon Energy Network and Energex's detailed responses to the consultation paper's questions

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AEMO Consumer Energy Resources (CER) Data Exchange Consultation Paper – Ergon Energy Network and Energex response

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1. **Priority Use Cases** - Do the identified priority use cases effectively address immediate data-sharing needs, and are there any additional use cases you would recommend prioritising?	*Use Case 1 – Sharing Network Limits* in the Australian Energy Market Operator's (AEMO's) Consultation Paper is described as "Provides authorised agents with visibility of network constraints across jurisdictions, supporting more efficient grid management and operational planning." Sharing of Network Limits, identified previously in the document as dynamic operating envelopes (DOEs), will support more efficient grid management indirectly: • through customer agents and large customers being able to develop customer offerings that align customer benefits with network requirements; or • by better preparing for emerging future network constraints, which requires forecast network limitations to be shared. We suggest that the main benefit of sharing DOEs lies in visibility of forecasts of network limitations to better enable bidding in energy markets. Other use cases would be sufficiently served by network limits provided in non-near real time, or aggregated DOEs at certain points in the system, for example the Transmission System Operator-Distribution System Operator interface. The actual system operations and market use cases and underlying assumptions that are targeted with this generic data use case must be verified in detail prior to any implementation decision on Use Cases 1 and 2, as they drive different data exchange requirements in terms of data volume, data velocity and potentially supplementary data requirements, and would therefore drive different design decisions. It should also be noted that despite the near-real-time use cases having been prioritised, the stakeholder sentiments documented in the Consultation Paper's Table 5 regarding data sharing capability include concerns about the complexity of designing a near-real-time system. We share those concerns and note that any digital system on which grid operations depend in near-real-time has significantly more demanding

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	requirements. *Use Case 3 – Consistent CER Standing Data* refers to the Distributed Energy Resources (DER) Register already holding a subset of the required data, but problems relate to access privileges, completeness of data in light of emerging requirements, and the cadence of updates. On page 30 of the pre-reading material to Workshop 2 (which is not published), the DER Register solution is marked as "API but legacy". A renewed solution should replace the legacy DER Register reporting processes and align processes across jurisdictions. This also raises the overall requirement that any new use cases for a CER Data Exchange should consider any opportunity to simplify or replace existing reporting and data exchange requirements, which would benefit all participants and customers.
2. **Strategic Use Cases** - How do you view the long-term value of the strategic use cases and are there specific outcomes you would like these use cases to achieve in the future? Also do the strategic use cases sufficiently complement the priority use cases? Do you have any feedback on when these use cases should be implemented?	We note the Consultation Paper's Figure 17 includes a use case that has been rated "some value but not urgent", yet it has an implementation timeframe of "immediately".
3. **Additional Use Cases** - Are there additional or alternative use cases that would enhance the CER Data Exchange's outcomes?	Overall, we suggest that an investment in an industry-wide data exchange infrastructure should consider the future evolution of digital and data ecosystems integration, which will include more frequent changes of energy market participants and service offerings, links to adjacent industries (such as smart mobility, smart cities, smart public services and other smart industries) and the rise of artificial intelligence driven machine participants acting on behalf of entities and individuals. As such, architecture considerations should include future-proofing the data exchange infrastructure so it can grow to support this evolution. This is also aligned with the stated intent in the UK Digital Spine and many other data ecosystem initiatives that are currently emerging globally (see our cover letter for various examples). There is a clear trend towards federated data infrastructures that support cross-sector integration and data sovereignty, whilst ensuring consistent identity and access management, cyber security and data

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	accessibility through federated services. Evidence is available to support this recommendation.[1] The use cases captured in the Consultation Paper's Stakeholder-led Use Cases Section have not been consulted on in AEMO's Expert Working Group meetings or the CER Data Exchange Industry Co-design workshops. We note the *Use Case – Network Limits Standardisation* in the Consultation Paper's Table 4 sits outside the scope of the consulted CER Data Exchange, as well as the priority *Use Case 1 – Sharing Network Limits* in the Consultation Paper's Table 1 that it aims to extend. As this issue relates to operational DOEs delivered via CSIP-AUS, it is not a matter that will be resolved by implementing a new CDX, as operational DOEs are not within the scope proposed for the CDX. During Workshop 2, a gap in current arrangements was discovered that would lend itself to a solution provided in a centralised manner. We learned that not all market participants have a shared identifier that would support the correct association of NMI or customer data, e.g. not all demand flexibility providers have a NMI associated with all their customer records. A capability that solves this issue might be a required enabler for future data exchanges and market interactions.
4. **Changes to Use Cases** - Would you suggest any changes to the use cases presented? Please outline your reasoning	The use cases presented in the Consultation Paper are data use cases that are assumed to support a range of actual market or system operations use cases. The market and system operations roles, responsibilities and interactions are currently being designed in two other workstreams of the National CER Roadmap (P.5 and M.3, both of which precede the CER Data Exchange in sequence in the National CER Roadmap).[2] As a result, the assumptions on which the data use cases and their prioritisation are based in the Consultation Paper will require review when the market and system operations work packages have released their approved design outcomes. On the basis of these outcomes, additional data use cases might also be identified (see our response to Question 3).
5. **Prioritisation** - Do you agree with industry preference that the CER Data Exchange should be	Yes, we agree the CER Data Exchange should be designed to keep future expansion options open. We recommend adopting an approach that starts out as a centralised data exchange for suitable use cases and

[1] See the United Kingdom's Digital Spine Feasibility Study | Arup, Energy Systems Catapult, University of Bath (publishing.service.gov.uk), Germany's Gaia-X based Energy Working Group at energy data-X - Energy data-X and the International Data Spaces Association at Home - International Data Spaces.

[2] national-consumer-energy-resources-roadmap.pdf, page 43.

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designed with narrow capability initially but have the flexibility to expand in the future?	matures to a federated data space enabling increasing interoperability over time. As we explain in our response to Question 3, we propose that a bigger picture vision and composable architecture concept be adopted when making design decisions for the CER Data Exchange. An incremental implementation approach is the only viable way to navigate the uncertainty in the industry and broader process of digitalisation and electrification of sectors and society. It would also align with digital best practices. Capability increments would be informed by considerations of complexity, prioritised use cases, emerging and maturing global standards for data spaces, emerging compliance requirements and new technology opportunities.
6. **Capability** - Do the proposed data sharing capability discussed above support both current and future CER data sharing use cases? Please nominate what essential data sharing capability would be required?	The proposed data sharing capability set is more than current prioritised data sharing use cases require, but it will not be sufficient to support the future industry data ecosystem and cross-sector integration. We articulate additional requirements in our response to Question 7. In terms of the data sharing capabilities listed in the Consultation Paper's Chapter 5, the following are essential considerations: • Data Interoperability, which is presented as "Format Standardisation" and "Data Governance" throughout the Consultation Paper. This should also include a capability to locate, access (subject to access privileges) and understand available data sets; • Cyber Security and Information Security, including: o Identity and Access Management (preventing unauthorised access to data); o Customer Data Rights, privacy, and encryption; and o Security of Critical Infrastructure. • Platform Interoperability. A preferable approach to achieving platform interoperability would be a multi-cloud interoperability based on hyperscaler cloud providers, as this would support all the requirements of adaptability, scalability and future-proofing, as well as enable an architecture that could address stakeholder concerns about barriers of entry for smaller participants as mentioned in

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	the Consultation Paper's Table 5. As already outlined in our responses to previous questions, near-real-time use cases supporting safe and secure operations of the power network have a significantly larger set of non-functional requirements. Therefore, the initial implementation should focus on use cases with less complex requirements and less risk, and that can be implemented faster. This will prove that the CER Data Exchange service model and incremental delivery work and may improve trust in the CER data infrastructure solution.
7. **Additional Features** - What additional features or capabilities could improve flexibility and scalability in the CER Data Exchange?	The following requirements should also be considered: • As mentioned in our response to Question 3, an approach that allows for the evolution of federated data spaces should be adopted. This has specific architecture implications and it would be prudent to consider alignment with or adoption of international data space interoperability standards. • While adaptability and scalability have been called out as a guiding principle, these, along with extensibility, must also become capabilities of the platform. This requires composable architecture approaches and longevity of technology choices. • While "custom data formats" hint at the need for innovation, we suggest that enabling secure and safe innovation should be an explicit future platform feature.
8. **Ownership Preferences** - Which ownership model do you believe is best suited for the CER Data Exchange: Industry-led consortium, AEMO-led, or a New Independent Government Agency? Do you have feedback on the models in addition to those summarised in this paper? Are there other ownership models not listed in this paper that you would like us to consider?	The concept of "ownership" was not clearly defined in the Industry Co-design workshops, but on request it was clarified that the role of the "owner-operator" is the equivalent of the role of the service provider. As such, it is the entity that provides CER data exchange digital infrastructure services to the industry. This is the base assumption for our following comments. The summary of the Industry Co-design Workshop 2 in the Consultation Paper does not fully capture the sentiment of the outcomes, which can be reviewed in the Workshop 2 summary report.[3] We agree with the clear preferences for ownership models as expressed by the majority of stakeholder in Workshop 2, which

[3] CER Data Exchange Industry Co-Design Webinar Slides (aemo.com.au), pages 18-22.

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	focuses on an AEMO-led model, with the clearly noted requirements on improvement including: • more commercial attitude and skills required in AEMO; • a new AEMO services model; • industry plus consumer governance (which is about oversight); and • ensuring adequate future proofing. The option to reuse the Industry Data Exchange (IDX), which is mentioned in Model 2 in the Consultation Paper, was introduced in Activity 2.b in Workshop 2 as an example only. The Workshop 2 summary report documents the concerns that stakeholders had regarding adopting the IDX.[4] A CER Data Exchange ownership model must take into account these concerns, principally via the recommended improvement "Make IDX design and development process more transparent, inclusive and consultative."
9. **Oversight** – prescription vs discretion - What level of oversight should apply to the CER Data Exchange? Should its operation be heavily prescribed, or should it be provided with operational discretion?	In alignment with the preference of the majority of the stakeholder working groups in Workshop 2, we prefer a balanced approach, where the operation of the CER Data Exchanged is governed by a Service Level Agreement (SLA), within which the service provider of CER data exchange digital infrastructure services has a high level of operational discretion. For tactical and strategic decision making, refer to our response to Question 10.
10. **Oversight body** - Who should be responsible for overseeing the CER data Exchange's operation? Are there other models of oversight that you would like considered? How important is regulatory independence in overseeing the CER Data Exchange, and would a new dedicated oversight agency or body better support transparent, impartial governance?	The UK Digital Spine feasibility study,[5] which the Consultation Paper references frequently, states "It would be unreasonable to expect a single central organisation to cover the breadth of outcomes a data sharing infrastructure could facilitate via the identified use cases, and certainly not the other uses it may enable. Therefore, the level of governance required for such a solution should reflect the technical maintenance and core functions of the data sharing. A decentralised and distributed approach to governance, reflecting the proposed distributed technological implementation will mitigate the described market failure risks (e.g., digital monopolies developing)." Whilst a decentralised and distributed approach to governance was not discussed during the Industry Co-

[4] CER Data Exchange Industry Co-Design Webinar Slides (aemo.com.au), page 21.
[5] Digital Spine Feasibility Study | Arup, Energy Systems Catapult, University of Bath (publishing.service.gov.uk), page 392.

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	design Workshops, a clear stakeholder preference for transparency and consultative processes in governance and decision making was articulated by the stakeholders in Workshop 2 (also see our response to Question 8). The oversight models in the shortlist in the Consultation Paper's Table 9 do not reflect that. Model 2 in that table only mentions that "Industry participation in oversight may be needed to manage potential conflicts". We suggest an oversight model by a consortium that comprises representatives of industry participants, consumers, AEMO (as the service provider), regulatory bodies and technology partners. A tiered governance approach and clear responsible/accountable/consulted/informed roles will be required in the charter of the oversight body to balance risk, speed of decision making and implementation, and consensus across the industry (and, if necessary, regulation). The efficacy and potential bias of this tiered governance model must be monitored to determine when changes are needed. The operation of the CER data exchange infrastructure should be agreed with the service provider through a formal SLA. Tactical decisions should be made by a steering committee that reports to the industry oversight body within adequate parameters and is comprised of a cross-section of participants representative of the industry oversight body. Strategic decisions that impact the industry and/or require major investments should be carried out by the oversight body as described above. The service provider for CER data exchange digital infrastructure services would be involved in all of these forums. Major digital technology platform partners should be involved in an advisory function where appropriate. It is important that the right digital architecture and digital strategic skillsets are present on all levels of decision making. This proposed governance approach aligns with contemporary digital utility practices. Gartner recommends "Currently, open energy data is limited by the restrictions imposed by regulators, software vendors and hyperscalers. Add utility operational concerns about latency and resilience, and one can understand the marketplace inertia. In response to these limitations, some jurisdictions are developing utility-led, jurisdiction-specific, cloud platforms to host industry software vendors to run the digital infrastructure

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	needed to accelerate the integration of DERs and drive the energy transition. Utility consortiums will lead the way to reduce risk and cost by cooperating to deliver a mutually beneficial operational cloud."[6]
11. **Data Governance Preference** - Which data governance model best aligns with industry's desire for trust, compliance, and flexibility?	We suggest a data governance model should be considered as an integral part of the overall governance model we propose in our response to Question 10. Our rationale is that mature data management approaches integrate the use and interoperability of data with the management of its metadata and performance parameters, which include (and is not limited to) data ethics/bias, data standards, data quality, data security classification, timeliness and underpinning technologies. This would mean data governance is implicit and integrated with the overall governance approach for the CER Data Exchange. As an example, refer to the DAMA wheel in the Data Management Body of Knowledge, a comprehensive guide to data management concepts and practices.[7] In terms of our detailed feedback on the proposed models in the Consultation Paper's Table 10: • *Model A* – The CER data exchange infrastructure must include the digital capabilities for operating the data governance functions. This means that the service provider for the CER Data Exchange infrastructure for the energy industry will also operate these digital capabilities, which are then covered by the SLA that the operator adheres to. However, good governance requires separation of duties (refer to IT governance standards, such as COBIT, ITIL and ISO/IEC 38500). This means the service provider should not self-govern. • *Model B* – We would like to see the data governance framework incorporated with the overall oversight structures as we describe further above. This is close to Model B. However, the challenge of voluntary compliance noted in the Consultation Paper does not need to be a characteristic of this model, if the authority of each layer of governance is clearly defined and, if necessary, regulated. In other words, decisions made in this consultative and transparent manner can also be mandatory for all participants of the data ecosystem.

[6] Predicts 2024: Power and Utilities, Disruption of DERs (gartner.com).
[7] DMBOK v2 Wheel Images (dama.org).

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	• *Model C* – In addition to the noted challenge for this model related to slow decision making and limited flexibility, there is another risk of bias of a single regulatory body. If data governance was given to AEMO, and AEMO is also the service provider for the CER data exchange infrastructure, the same issue for Model A applies (the service provider should not self-govern). • *Model D* – A new government agency for the purpose of the CER data exchange governance will only add cost and bureaucracy to the process. It would only make sense if there was a greater Australia-wide data governance conversation within which the CER Data Exchange could be integrated. Currently, the Office of the National Data Commissioner only has a mandated scope for Australian Government-related data.[8]
12. **Adaptability** - In your view, how should the data governance model support the integration of new use cases as CER technologies and industry demands evolve?	There are two dimensions to adaptability in this context: • Adaptive Data Governance – this is a concept that supports different levels and styles of data governance depending on the business context. This will be required to support evolution of the greater data ecosystem and innovation (see above). As an example, this means that for regulated data exchanges a high level of prescription and rigorous compliance checks are implemented, while an innovative use case may only have to adhere to a minimum set of requirements (such as identity and access management requirements). • Supporting adaptability of the data ecosystem – this is a requirement for the whole data management practice and includes the oversight practices above. Adaptability is a key requirement of the operating model (including governance models) and architecture of the CER Data Exchange (refer to the Consultation Paper's Figure 13, Guiding Principle #2).
13. **Stakeholder Engagement** - How frequently and in what format should the data governance framework engage stakeholders on changes to	Based on our tiered and integrated oversight framework described further above, we would assume the industry oversight body would provide good representation for all stakeholders when strategic decisions are made. However, it is important that particularly impactful strategic changes (such as expansion of data sets and exchanges beyond the scope of the CER Data Exchange intent and infrastructure, or integration

[8] Home Page | Office of the National Data Commissioner.

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standards, compliance requirements, or new use cases?	with other industry sectors) are consulted on, with a broader range of opportunities for stakeholders to participate. As part of the oversight framework, a framework and principles should be established that outline how genuine collaboration may occur effectively, efficiently, and without bias.
14. **Data Quality** - Whilst not included in the scope of the CER Data Exchange, do you have feedback or key considerations for ensuring data quality in a manner which compliments the Exchange?	Refer to Question 12 response for data quality as a key part of data management. For regulated use cases, data quality has to be clearly prescribed. Acknowledging that data governance maturity is an area where many organisations have struggled (as regularly observed in Gartner's Data & Analytics surveys[9]), this is a sector-wide journey towards maturity. Data quality compliance should be monitored and reported on, but enforced with care in the earlier stages. A sector-wide acknowledgement of the importance of data quality and governance in each participating organisation has the potential to support individual data governance initiatives and grow the sector's maturity overall.
15. **Alternative Preferences** - Are there any data governance models not listed in this paper that you would like us to consider?	See our response to Question 11.
16. **Phased Implementation Roadmap** - Do you agree with the proposed phased approach for the CER Data Exchange implementation? What adjustments or considerations would you suggest to better align the phases with the needs of your organisation?	We strongly agree with a phased implementation roadmap. This roadmap should be informed by agreed power system architecture, roles and responsibilities, as well as strategic considerations. Therefore, the Foundational Phase in the Consultation Paper's Section 8.1 must be preceded with a strategy and architecture phase that is consultative and considers the future evolution of digital and data ecosystems integration (see our response to Question 3). This phase should be agnostic to (but may inform) a proposed solution design for IDX and should genuinely consider best practice approaches to incrementally evolving future-proof data and digital ecosystems. This phase must also draw on the right industry, digital and cyber security expertise for each decision. It should also assess the sensitivity of the value proposition and timing of the CER Data Exchange and each priority use case to potential policy

[9] The State of Data and Analytics Governance: IT Leaders Report Mission Accomplished; Business Leaders Disagree (gartner.com).

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	changes in major jurisdictions or Australia-wide. The outcome of this phase would be a digital strategy (which includes conceptual strategic architecture decisions) for the seven-to-ten year horizon, a tactical plan for the three-to-five year horizon, an agreed governance model design (as proposed in the Consultation Paper's Section 8.2), potential interim stages for governance models that may be better support early implementation phases,[10] and identified policy and regulatory reform requirements, harmonised with the outcomes of other National CER Roadmap workstreams. The tactical plan would be informed by the outcomes of the interdependent workstreams of the National CER Roadmap,[11] which will enable validation of the priority use cases identified through this current CER Data Exchange consultation process. The tactical plan will inform the scope of the Foundational Phase. Based on this strategy and architecture phase, a business case should be developed that clearly answers the recurring stakeholder questions about value, cost and benefits. This proposal is not only to align with the needs of Ergon Energy Network and Energex – it is prudent and best practice for an endeavour that will have a profound influence on electricity customers and the future of the energy industry in Australia.
17. **Cost Recovery Model Preferences** - What are your preferences regarding cost recovery for the CER Data Exchange? Would a direct, shared, or government-supported model be preferred, and why?	We support the Consultation Paper's statement that "a transparent cost recovery and pricing framework is essential to ensure that the data exchange remains accessible and equitable, avoiding undue costs to smaller market participants or consumers, while providing a fair mechanism for recouping development and operational costs." Customers who do not have CER, or do not have arrangements with customer agents that participate in energy markets on their behalf, will see lesser benefits from the CER data exchange than customers who do. This suggests the direct cost recovery from users model should be the preferred mechanism. However, in the shorter term, public funding could also play a role in filling any gap between willingness to pay and the foundational costs of the arrangement. Likewise, if obligations are placed on market participants to

[10] For equivalent considerations, see Digital Spine Feasibility Study | Arup, Energy Systems Catapult, University of Bath (publishing.service.gov.uk), page 44.
[11] See national-consumer-energy-resources-roadmap.pdf, P.5 Redefine roles for power system operations, and M.5 Redefine roles for market operations.

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	enable or recover costs to fund the exchange, there should be appropriate economic regulatory oversight of costs and recovery mechanisms. We note participants who are mainly data providers (such as DNSPs) are enablers for benefits for other organisations, but will not be able to create benefits for their customers from the CER data exchange directly within a three-to-five year horizon. For example, the CER data exchange mechanism may support maturing of demand flexibility markets and CER orchestration capabilities sufficiently to materially impact network capital expenditure past 2030 only. Prior to this, it is difficult to see how networks can pass on benefits directly to customers. Ergon Energy Network and Energex have not included this reform (which could involve significant costs) in their 2025-30 regulatory proposals submitted to the Australian Energy Regulator.
18. **Regulatory and Policy Reforms** - Which areas of policy or regulatory reform do you believe are most critical to support the CER Data Exchange? How should these reforms balance compliance with operational flexibility?	The proposed strategy and architecture phase will identify necessary policy and regulatory reforms. There is a risk the current high number of in-flight workstreams from the National CER Roadmap and other related reforms might lead to overlaps or conflicts between regulatory reform initiatives. Recent examples are the National Electricity Amendment (Cyber security roles and responsibilities) Draft Determination,[12] the ongoing Network Visibility project arising from the Energy Security Board's Data Strategy Recommendations[13] and the ongoing tightening of the *Security of Critical Infrastructure Act 2018 (SOCI)*.[14] Regulatory and policy reforms in the energy sector should be looked at holistically to create an efficient and robust framework, ensure that reporting requirements are consolidated with data exchange requirements, and ensure that complexity (and the associated risk of conflicts or loopholes) for energy industry participants are removed. Another essential consideration must be the ability of regulation to keep pace with the rapid transformation of the sector.

[12] Cyber security roles and responsibilities | AEMC.
[13] Network visibility | Australian Energy Regulator (AER).
[14] Security of Critical Infrastructure Act 2018 (SOCI) (cisc.gov.au).

AEMO Question	Ergon Energy Network and Energex Response
19. **Technical and Operational Challenges** - What technical or operational challenges do you foresee in integrating your systems with the CER Data Exchange? Are there specific support mechanisms that would facilitate smoother adoption for your organisation?	Industry data sharing at scale, beyond current reporting and billing procedures, special operational procedures (for example, in response to minimum system load) and generic B2B use cases in Enterprise Resource Planning (ERP) contexts, is not something that DNSPs have had to engage in. Therefore, this will require varying uplifts in data management and data sharing capabilities. DNSPs with modernised data and cloud infrastructures will be better placed than other DNSPs that are yet to modernise these infrastructures.
20. **Impact on Stakeholders** - What technical, regulatory, operational, or commercial impacts would you anticipate from implementing the CER Data Exchange in your organisation, and how could the roadmap or cost recovery model alleviate these impacts?	Ergon Energy Network and Energex have no comment beyond what we have already provided in our responses to other questions.