

21 November 2024

Re: High-level design for a national CER Data Exchange

1. Summary

Evergen (a subsidiary of Pacific Bidco Pty Ltd) welcomes the opportunity to provide feedback to the Australian Energy Market Operator (AEMO) on the Consumer Energy Resource (CER) Data Exchange Industry Co-Design Projects high-level design for a national CER Data Exchange as outlined in the CER Data Exchange Industry Co-Design Consultation Paper.

Evergen was founded as an Australian company in 2016. We are a software and infrastructure platform for enabling CER monitoring, control, optimisation and orchestration. Rather than being a VPP, we enable VPP owners and CER owners to readily integrate and participate in energy markets. From beginnings that focused on residential batteries, Evergen has developed the capability to accommodate a variety of CER types on our platform, including flexible loads and EV chargers.

Evergen has been an active member of the expert group guiding the consultation approach for the CER data exchange concept. Evergen strongly supports the project's goal to address efficient data exchange as a key enabler to realising CER coordination benefits for all consumers. However, we believe framing the project as a data exchange has prematurely biased the solution towards a built platform, rather than assessing the broad problem of enabling effective data sharing.

We recommend a thorough quantitative assessment to clearly define the cost and benefits between the two options of a built CER data exchange and strong standards-based approach. Our view is that a standards-based approach, where each role-holding organisation is obligated to adhere to agreed-upon transparent contracts and performance requirements, offers several advantages:

- **Lower upfront centralised cost:** Reduces the need for a large, centralised build. Parties who benefit from the integrations and scale bear the cost of this directly.

- **Simpler Administration:** Streamlines any residual cost allocation, avoiding complex recovery mechanisms.
- **Flexibility:** Provides an easier pathway to pivot towards layering standards onto a built exchange if the industry needs to evolve.

By prioritising a standards-driven framework, the project could achieve meaningful early wins while retaining the ability to pivot to shared infrastructure reusing the standards developed.

2. Evergen supports addressing data exchange inefficiencies, with strong views on how to approach the best path forward.

Evergen strongly supports addressing the current fragmented CER data exchange landscape to realise full benefits of CER. Agreeing strongly with the consultation papers framing:

... to realise these benefits, CER must be properly integrated and coordinated effectively. Common market arrangements, standards and efficient data transfer between industry bodies, service providers, aggregators, equipment manufactures and consumers are needed¹

Where Evergen has reservations about the approach is in the scale, speed of implementation, and cost required to build a common data exchange, with the associated cost allocation complexities and unclear cost benefit based on existing literature and studies.

It is our view that the project needs to undertake a stronger quantitative assessment of the relative cost and benefit between a built-exchange and a strong standards-based approach. The Consumer Data Right Strategic Review² offers valuable and instructive insights on the risk of getting this wrong. The 2024 review of this major and costly project highlighted challenges such as limited adoption, significant costs, and constrained resource allocation, leading to stifling of core innovation activities:

¹ Page 27 Para 2.2 CER Data Exchange Industry Co-Design Consultation Paper

² https://www.ausbanking.org.au/wp-content/uploads/2024/07/CDR-Strategic-Review_July-2024.pdf

“..The banking industry recognises the benefits CDR infrastructure can enable. However, challenges in policy and standards design, and implementation have impeded the CDR’s success. These include unsubstantiated consumer propositions, an absence of a robust cost/benefit governance framework, and excessive complexity and prescriptiveness in compliance obligations”³

Looking to the energy industry, and CER specifically. The project EDGE CBA⁴ is the only quantitative assessment that focuses on the benefits of a data exchange in the context of the broader benefits of efficient CER coordination. This project EDGE CBA calculated a data hub benefit of 450M AUD over 20 years at a 4.83% discount rate⁵. Assuming an even spread of benefits across 20 years this translates to 22.5M AUD p/a in benefits that accrue predominantly to all aggregators and DNSPs⁶. Given the number of DNSPs and aggregators involved, along with uncertainty of project costs and scope, we are not confident that this benefit is significant enough to definitively reduce costs for end consumers

In Evergen's view the CBA assumptions on cost that underpin the calculated benefit of the data hub deserve rigorous attention. The Edge CBA build cost of a centralised data hub was assumed to be 16.3M AUD over 20 years. This estimate is based on augmentation of the existing AEMO e-hub to perform additional daily and intra-day DER use cases⁷. We believe this is optimistic. Based on observed costs of comparable projects it is reasonable to expect that real costs involved in build, administration and maintenance of a built solution could be significantly higher.

Below are some illustrative examples of costs for real projects in Australia. It is important to note that these costs were incurred over a much shorter period than the aggregate 20-year cost assumed in the EDGE CBA:

- The cost recovery for Victorian DNSPs to implement solar backstop arrangements was 26.3M AUD⁸.

³ https://www.ausbanking.org.au/wp-content/uploads/2024/07/CDR-Strategic-Review_July-2024.pdf

⁴ [project-edge-independent-cba-full-report.pdf](#)

⁵ Fig 3.1 [project-edge-independent-cba-full-report.pdf](#)

⁶ Fig 3.2 [project-edge-independent-cba-full-report.pdf](#)

⁷ Table 3.3 [project-edge-independent-cba-full-report.pdf](#)

⁸ <https://reneweconomy.com.au/solar-industry-irate-as-victorians-to-bear-cost-of-technology-to-switch-off-rooftop-pv/>

- The Annual costs to the Energy sector associated to compliance with the Consumer Data right (CDR) are 30M⁹
- The total combined funding for Project EDGE (\$28M) and Project Symphony (\$35.5M) amounted to \$53.5M.
 - NOTE: No publicly available breakdown exists detailing the proportion of costs for technology build and maintenance which was only a portion of the above costs. The funding went to a number of project participants and covered payments to customers. This example is provided solely to illustrate the scale of costs associated with multi-party projects relating to CER in the NEM and WEM.

Most analyses of benefits in the consultation paper, as well as the heavily referenced UK digital spine work, are presented qualitatively. While we agree that a qualitative approach is reasonable for benefits that are difficult to quantify, it is critical to carefully compare whether these benefits are inherently tied to a built data exchange or if a standards-based framework could capture the majority of them at lower cost and risk. We believe several use cases outlined in the paper are not uniquely attributable to a built exchange but rather represent benefits of improved CER coordination, which could be achieved equally through either model.

We note in particular that the calculated benefit of a data hub was derived using worst-case assumptions for the point-to-point model. This comparison is framed by the differences between the two definitions below¹⁰:

- Point-to-point – participants establish **dedicated, bespoke** connections to share data using **mutually preferred** methods and protocols.
- Data Hub – shared digital infrastructure allowing data exchange between participants. It is a data exchange model that enables standardised, efficient and scalable DER-related data exchange. Project EDGE assessed two implementations of a data hub, based on centralised or decentralised infrastructure.

⁹ Table 1 <https://treasury.gov.au/sites/default/files/2024-08/p2024-512569-report.pdf>

¹⁰ Table 2.4 [project-edge-independent-cba-full-report.pdf](#)

The assumption of point-to-point bespoke connections infers that each integration between market-actors is a unique non reducing cost. This is a worst-case assumption of ad hoc bespoke arrangements featuring:

- Unique cyber security standards and assessment frameworks between actors
- Bespoke API/integration contract definition and change management
- Authorization pattern differences for each integration
- Unique ongoing maintenance for protocol changes and upgrades

With this framing we believe the costs and limitations of standards are overstated in the project consultation. Further effort is needed to assess the unique benefits of a built exchange. Given the added complexity and cost for both the construction and governance of a built exchange which will be borne by the consumer, we believe the project has a responsibility to undertake more detailed and quantitative assessment of this point.

3. Evergen believes there are benefits of a standards-based approach

The role of standards has been cast as insufficient in the consultation paper. Primarily due to an assumption of each organisation implementing their own preferred standards and security. Evergen agrees that issues of inconsistency need to be addressed to ensure that CER is discoverable and coordinated. But we are not confident that a built exchange is required to do so.

Instead Evergen advocates for the consideration of a strong set of participant role-based standards and obligations to address this need while side stepping some of the trickier cost allocation considerations.

A strawman outline for what could be required is:

- Definition of the interface types that participants are required to present to allow discovery of agreed information
- Definition of non-functional requirements (NFR), e.g. scalability and latency requirements for these interfaces. These could be independently verified periodically, or subject to monitoring and reporting requirements.
- Industry standardisation of authorisation patterns for interfaces

- Standardisation of cyber security standards and accreditation process for organisations
- Publication of interfaces and discoverable list of active participants easily communicated through a public listing.

The definition of minimum interface expectations for each actor operating in the Australian market provides clear guidance on what DNSP's, retailers, aggregators, OEMs and any new actor needs to adhere to deliver services

Most of this work aligns with the steps needed for a phased delivery of the CER exchange. We believe this approach would enable the project to focus on the interfaces between parties, enhance the discoverability of these interfaces, and improve the source-of-truth systems that provide enabling data for all participants.

A significant advantage of this approach is its potential to accelerate project delivery as opposed to hinder it. By setting standardised interface development as a market expectation, costs are directly borne by the benefiting parties. This model can incentivize efficiency and minimise contention arising from the need to develop and implement cost allocation methodology and administration functions required by a larger central build.

Key benefits of a strong standards approach that we believe have not been adequately quantitatively compared to a built solution option are:

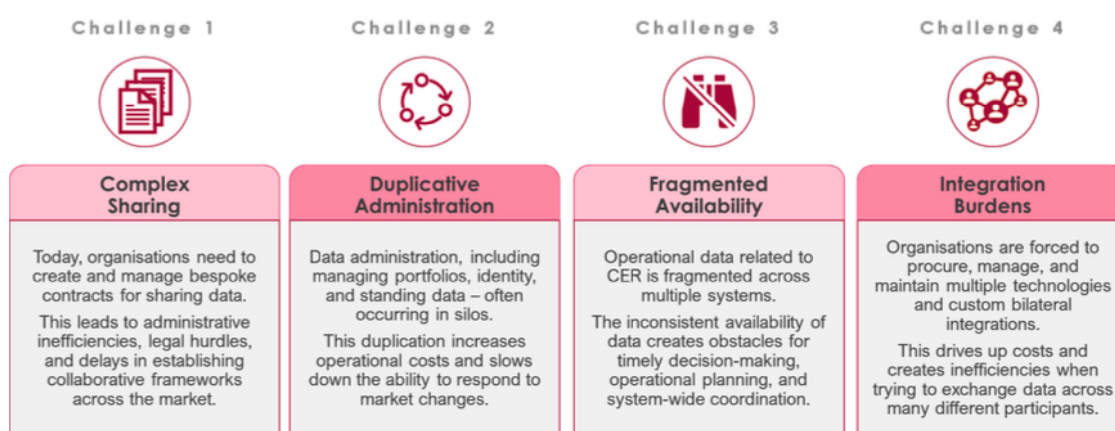
- **Cost Reduction:** Standards allow each participant to implement a compatible interface without the need for a centralised build. This approach avoids the costs associated with building and maintaining a central hub and reduces the operational expenses linked to multi-point bespoke integrations.
- **Avoiding Cost Recovery Delays:** Focusing on standards helps sidestep debates on cost allocation among participants, which could delay implementation. By doing so, a standards-based approach could accelerate project uptake and early wins.
- **Flexibility and Scalability:** A standardised framework of self-hosted interfaces provides the flexibility to adapt as new technologies and requirements emerge while lowering barriers for new participants by setting clear expectations for interoperable platform build.

The implementation of mandatory standards, and public registers of interfaces would still require strong industry coordination. We acknowledge that this is a difficult but pivotal component of any approach taken moving forward. We believe there is a necessary and strong role for governance and industry collaboration regardless of the approach chosen.

4. Addressing key data exchange challenges with standards or shared infrastructure

The consultation paper frames key data exchange challenges in the figure reproduced below

Figure 15: Data exchange challenges



Using this framing we can consider how both a built solution and strong standards framework address each challenge.

Complex Sharing

Creation of bespoke contracts is addressed by both approaches. By defining format standardisation and integration protocols, a standards-based approach can eliminate the need for bespoke arrangements, making each connection predictable and repeatable.

- Strong Standards:
 - Solves the issue of bespoke contracts
- Built CER exchange:
 - Solves the issue of bespoke contracts, by implementing standards

Duplicative Administration

This example focuses heavily on portfolio management which we will address and then broaden out from. The proposal for a built data exchange does not inherently solve the challenge of managing portfolios on its own. It does not hold or serve as a master source of truth for CER data. Incremental investment in improving the source of truth, which could be an improved DER register, is required. An improved and up to date DER register is not a benefit unique to a built data exchange. The unique data exchange benefit here is streamlined access to a DER register or its equivalent using standardised identity and access management. But the effective management of customer churn requires investment in the underlying source of truth and the regulatory changes required to deliver this use case.

Removing duplicative management of identity may be a core benefit that a built data exchange can uniquely address. Today there are initiatives to standardise the certificate authorities used between DNSPs which can improve authorisation processes over today's fragmented approach. But standardised public key infrastructure (PKI) does not preclude the need for each organisation to maintain a mapping of each identity to a role in their systems. The magnitude of the specific benefit here needs to be evaluated if it is one of the core differentiators between a built and standards-based approach.

Evergen's view is that significant duplicative administration relates to unique cyber security interpretations of each integration partner which increase project management costs and platform complexity for integrations. Through standardising participant accreditation including cyber security standards integration with participant counterparties would be significantly streamlined. This benefit could be achieved through a built exchange, but it can also be achieved at a likely lower cost through a robust accreditation regime for each actor within the system.

- Strong Standards:
 - Does not solve access to a reliable source of truth for portfolio management by itself.
 - Identity and access management can be improved through certificate effort but not to the same extent as a bespoke exchange
 - Cyber security process standardisation could resolve duplicated effort
- Built CER exchange:
 - Does not solve access to a reliable source of truth for portfolio management by itself.
 - Identity and access management is addressed as a core feature
 - Cyber security requirements for integration are solved through the single use point of a shared exchange.

Fragmented availability

The specific benefit that a data exchange may be able to provide for data fragmentation that is unique from a strong standards approach is the ability to retrieve data from multiple parties in one transaction, as opposed to multiple calls. Where strong standards apply, the same call would need to be made to multiple parties when requesting data. This is significantly better than a regime where each request is unique, but not as simple as making one request.

Before determining the best outcome, it is instructive to examine the numbers for integrations. The EDGE CBA modelled the following for FY 2042:

- 13 DNSPs interacting with an average of 27 Retailers/Aggregators/OEMs.
- 52 Retailers/Aggregators/OEMs interacting with an average of 6 DNSPs.

Effort should be made to quantify the benefits of a single request, as opposed to making separate requests to 27 Retailers/Aggregators/OEMs or 6 DNSPs, as indicated in the EDGE modelling. In Evergen's view, the relatively small number of participants involved in B2B

integrations does not clearly justify significant investment in a shared infrastructure.

- Strong Standards:
 - Reduces the impact of fragmentation at the expected number of integrations. Multiple calls will still be required, but each of these requests should behave in the same way.
- Built CER exchange:
 - Due to the inherent design of a built exchange the retrieval of data is consolidated.

Integration burdens:

Standardising interactions reduces complexity for organisations by providing clear and stable interface requirements. This approach addresses challenges associated with multiple technologies and custom bilateral integrations. While these issues can be resolved through either standards or a built exchange, adopting standards could be a lower-cost solution. It also ensures costs are borne directly by participants, rather than requiring allocation through complex cost recovery mechanisms.

- Strong Standards:
 - As each integration becomes replicable the cost per integration reduces significantly. With standardised cyber security accreditations each integration does not add significant project management overhead.
- Built CER exchange:
 - As a single point of interface the integration burdens of project management and incremental connections reduce markedly. Integration burden for a new pattern is dependent on the architecture model chosen for the built solution in the “prepare”/“trust” node which is to be confirmed in subsequent project phases.

5. Recommended Next Steps

As the CER data exchange project moves to consider the implementation pathway, Evergen strongly recommends that the phasing of the project considers prioritising the common data formats and delivery mechanisms. This can occur while also assessing if the unique benefits of an exchange justify the cost and complexity of a built solution and its cost allocation against a standards first approach.

We believe this is consistent with the view from the project that:

...CER Data Exchange will act solely as a data-sharing ‘facilitator’ rather than a data processor. The Exchange would need to support, at a minimum, the ‘essential’ capabilities with the assumption that all data storage, processing, and management remains the responsibility of the Exchange users (e.g., network operators, Retailers, aggregators, and other service providers). This framework ensures that the Exchange functions in a neutral, interoperable way where stakeholders can share and access critical data in a secure, standardised format while maintaining control over data handling and compliance within their respective systems.¹¹

The key next steps recommended by Evergen are:

- **Justify the Build of an Exchange Quantitatively:** Quantify the unique benefits of a shared data exchange infrastructure compared to a strong standards-based implementation.
- **Develop a Comprehensive Standards Framework:** Collaborate with industry stakeholders to draft a standards framework covering accreditation, authorization, and interface specifications.
- **Define roles and responsibilities:** Assign and socialise data requirements for each actor, specifying what needs to be presented and how.
- **Develop publicly discoverable interface documents:** Create listings of industry actors holding defined roles and provide public documentation of their standard interfaces.

¹¹ p53 CER Data Exchange Industry Co-Design Consultation Paper

6. Long-Term Vision

- By laying a strong standards foundation, the CER Data Exchange can support future scalability and interoperability without mandating centralised infrastructure. Should the need arise for a centralised element, the groundwork of standardised protocols and accreditation will make integration smoother and cost-effective.
- The role of the governance and project team would fall to defining the interfaces with industry, learning from the CDR lessons to pace changes in a way that provides demonstrable benefits with industry buy-in.
- There may be a long-term change in governance from a highly prescriptive/centralised structure, to becoming more industry led, as a solution becomes mature and moves to phasing adoption of use cases that provide realisable benefit.

Evergen is happy to meet with the project team to discuss any elements of the submission. We are strongly supportive of the project's aims to address efficient data exchange as a key enabler to realising CER coordination benefits for all consumers.

Best Regards

Ben Hutt
CEO

Consultation Questions:

Question 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?

Evergen broadly agrees that the priority use cases address immediate data sharing needs. Specifically, network sharing limits and consistent CER standing data appear to offer the most tangible near-term benefits. However, Evergen does not believe the project has yet sufficiently demonstrated that a built CER data exchange is necessary to achieve these benefits at the lowest cost and with minimal risk to consumers.

Question 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?

Evergen does not believe the current strategic use cases, even when combined with the priority use cases, offer sufficient incremental benefits to justify the central costs of a built solution in the medium term. Integration between a single central party, AEMO, and 13 DNSPs appears to provide only marginal benefits, as highlighted in the EDGE CBA assessment of the data hub's value to the TSO. Visibility of CER customer choices and streamlined portfolio data access could be effectively addressed through standardised authorisation arrangements to the appropriate sources of truth.

Question 3: Additional Use Cases

Are there additional or alternative use cases that would enhance the CER Data Exchange's outcomes?

No response

Question 4: Changes to Use Cases

Would you suggest any changes to the use cases presented? Please outline your reasoning.

No response

Question 5: Prioritisation

Do you agree with industry preference that the CER Data Exchange should be designed with narrow capability initially but have the flexibility to expand in the future?

The intent of starting with a narrow capability with flexibility to expand in the future is in line with Evergen's proposal. Focussing on format standardisation and standardisation of access management should be prioritised while the unique benefits of a built exchange are further quantified against a standards-based approach.

Question 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.

No response

Question 7: Additional Features

What additional features or capabilities could improve flexibility and scalability in the CER Data Exchange?

No response

Question 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?

Evergen does not agree with the underlying assumption that a built infrastructure is sufficiently justified which is a precursor to considering ownership preferences.

Question 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?

No response

Question 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?

No response

Question 11: Data Governance Preference

Which data governance model best aligns with industry's desire for trust, compliance, and flexibility?

No response

Question 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?

No response

Question 13: Stakeholder Engagement

How frequently and in what format should the data governance framework engage stakeholders on changes to standards, compliance requirements, or new use cases?

No response

Question 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 complements the Exchange?

No response

Question 15: Alternative Preferences

Are there any data governance models not listed in this paper that you would like us to consider?

No response

Question 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?

Evergen recommends a more rigorous cost-benefit analysis to establish the necessity of shared infrastructure before proceeding further. In the near term, we suggest the project prioritise achieving format standardisation of interfaces and assessing the practicality of standardised access management for participant-hosted interfaces. This is our preferred initial priority while the need for shared infrastructure is tested.

Question 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?

Evergen considers cost recovery to be a key challenge that may hinder the ability of shared infrastructure to achieve the project's aims. Without clear guidance on the magnitude of costs involved, decisions on cost allocation methods are premature. Generally, Evergen believes that costs should be borne by the users or beneficiaries of a service. This principle highlights the advantages of the self-hosted interface proposal, which reduces complexity and encourages broader adoption.

Question 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?

No Response

Question 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?

No Response

Question 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?

No Response