Powercor
AUSTRALIA

ELECTRIFICATION AND CER INTEGRATION

NON-NETWORK MARKETPLACE

PAL BUS 2.02 – PUBLIC

2026–31 REGULATORY PROPOSAL

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1. Overview

Our role as a distribution network is evolving through the transformational change within the energy landscape. Our energy system is transitioning to a more decentralised, lower carbon and smarter energy system, with significant growth in consumer energy resources (CER).

Traditionally, networks have invested in upgrades or new infrastructure to accommodate peak demand, yet this peak demand may only occur in specific periods of the year and for very short durations. The uptake in CER and smart technology solutions are increasing the opportunity for more cost-effective ways of managing our network to mitigate peak demand. Customers reflected this through our engagement, highlighting the need to integrate CER efficiently and equitably to reduce bills and facilitate the journey to net zero emissions.

Our overall CER integration strategy[1] ensures we maximise the value of CER on our network—to help reduce overall system costs, maintain reliability, and meet net-zero goals. The strategy focuses on maximising network utilisation and exhausting all possible low-cost solutions prior to investing in new and enhanced infrastructure.

This business case is focused on a key component of our CER integration strategy which is the opportunity to enable growth in non-network services, to improve long-term outcomes for customers.

A non-network marketplace will better allow customers and the market to actively participate and be rewarded for their contribution to the management of the distribution network. Currently, the non-network (or 'flexibility') market in Australia is growing but requires further support and development for it to mature. This is reflective of the UK's experience where they had over a decade of proactive investment, planned, and staged legislative change, and targeted industry engagement to slowly grow their market for non-network services.

Two broad options were considered including continuing the status quo (ad-hoc network procurements) or investing in a non-network marketplace made up of procurement and execution platforms to better facilitate the long-term growth of the flexibility market, which UK experience shows supported market development. The preferred option is to invest in a non-network marketplace. A summary of the costs associated with this option are set out in table 1.

TABLE 1 SUMMARY OF PREFERRED OPTION ($M, 2026)

OPTION TWO	FY27	FY28	FY29	FY30	FY31	TOTAL
Non-network marketplace	2.9	0.9	0.9	0.9	0.9	6.3

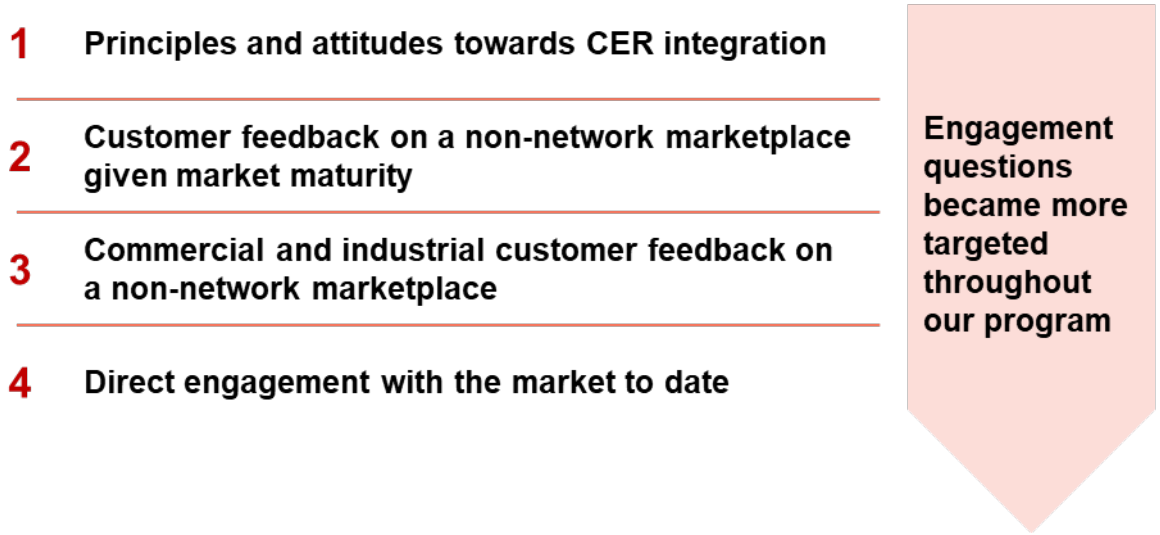
[1] Powercor Regulatory proposal (Part B), CER integration strategy, pg. 13

2. Stakeholder engagement

Since late 2021, we have been engaging with our customers on general approaches and principles for CER integration as well as on the specifics of our proposed non-network marketplace.

The engagement was conducted through a combination of in-person events and online forums and included various customer groups. The engagement also included business-as-usual feedback from the market during our regular tenders as well as learnings from a targeted trial. Figure 1 provides a summary of our engagement.

FIGURE 1 SUMMARY OF STAKEHOLDER ENGAGEMENT



2.1 Principles and attitudes towards CER integration

Our initial customer engagement findings informed the principles applied to our overall CER integration strategy.[2] Through our engagement program, customers have continuously advocated for the efficient and equitable integration of CER, to reduce bills and assist with the transition to net zero-emissions.

Customers and stakeholders raised general interest in demand management and the role it plays in avoiding capacity upgrades for electric vehicles (EVs). Throughout multiple engagements, there were mixed views on customer appetite to change EV charging behaviour, with some customers noting their hesitancy.

Larger customers and stakeholders raised their preference for clear direction on how they could be involved in utilising their CER to unlock additional value.

[2] Powercor Regulatory proposal (Part B), CER integration strategy, pg. 13

2.2 Customer feedback on a non-network marketplace given market maturity

We sought to build on our initial engagement findings by testing potential options with customers. During this engagement, we explored our proposed non-network marketplace with residential customers.

We highlighted to our customers that the non-network market is still emerging in Australia and that a clear 'flexibility first' mandate and staged transition plan does not exist here as it does in the UK. Given this, the key principle we sought customer feedback on was their preference for the timing of our investment. The two options included waiting until the market develops in Australia before investing in the project or investing now to foster the growth of the market.

Our customers supported the proposal to invest in a non-network marketplace despite the third-party market not yet being strongly established. Participants recognised the longer-term strategy to move to a position where low-cost solutions could be increasingly implemented to avoid network augmentation.

Our residential customers recommended expanding the data we share to ensure that third party proponents have clear opportunities to propose alternative solutions. Customers also highlighted the need for increased collaboration with local councils and community groups to increase the likelihood of community involvement.

Rural and regional Victorians expressed the particular importance of this recommendation to ensure rural energy groups have the same opportunities to participant in innovative energy solutions.

2.3 Commercial and industrial customer feedback on a non-network marketplace

We engaged with commercial and industrial (C&I) customers to seek their feedback on the proposed non-network marketplace. This engagement was focused on collecting more specific customer feedback and recommendations on the proposed investment, which have been used to tailor our project design.

C&I customers saw value in the benefits of the proposed non-network marketplace as it would promote market innovation whilst aligning with their broader sustainability and net-zero strategies. C&I customers also recognised that this investment will support the management of future peak demand and reduce the risk of power outages by ensuring grid stability, whilst providing financial compensation to businesses that participate.

Our C&I customers also raised several recommendations for the project, which included:

- simplicity is critical for success, and the technology must be seamless and easy to use, noting that many businesses lack the resources to engage in complex energy markets
- engagement with interested parties is needed so that the opportunities are well understood, including a focus on ensuring regional and rural Victorian participants are engaged.

C&I customers also noted that the current high costs of CER and their operational restrictions in shifting demand were both current barriers to their participation in non-network procurement.

2.4 Our direct engagement with the market to date

We have actively tendered non-network opportunities, over and above the RIT requirements since 2021. We engage with the broader market for consultation by undertaking a request-for-proposals from non-network service providers to deliver lower-cost alternative solutions to resolve identified low-voltage network constraints. Over the past five years, we have had a limited response. We have not

received any economically viable non-network alternatives from the market to date that we have been able to implement.

However, during 2023, we partnered with the non-network solution platform, Piclo Flex, to run a trial of their automated 'flexibility' platform and tendering system to 'test' concepts of a non-network marketplace. During this trial we had multiple engagement touch points with interested parties, non-network service providers and trial participants to understand their experience and suggestions. We engaged an independent consultant to review trial outcomes including feedback from participants to inform key suggestions, which included:

- expanding market awareness and stakeholder engagement by hosting additional public sessions to explore how non-network markets can support traditional objectives
- implement awareness campaigns including targeted communications to emphasise the financial incentives and operational advantages of non-network services
- releasing tenders for non-network solutions with a longer development time, to enable new connections to add non-network service provision into the assessment and value stack
- streamline the registration process for interested parties to foster greater registrations of existing assets already connected to the network.

Appendix A provides more detail on our non-network solutions to date.

3. Identified need

Our customers and network are experiencing transformational change with the increase in CER. These changes impact our network through growth in forecast peak demand. However, the nature of this load growth is becoming more 'flexible' than traditional demand growth, and as such, we have opportunities to adapt to deliver more value for customers and the energy system.

The identified need, therefore, is to improve the way we engage with the market to better utilise CER and support the availability of non-network opportunities, to deliver more efficient solutions and lower costs for customers over the long term.

3.1 Flexible energy sources are growing and so is the opportunity to better utilise it

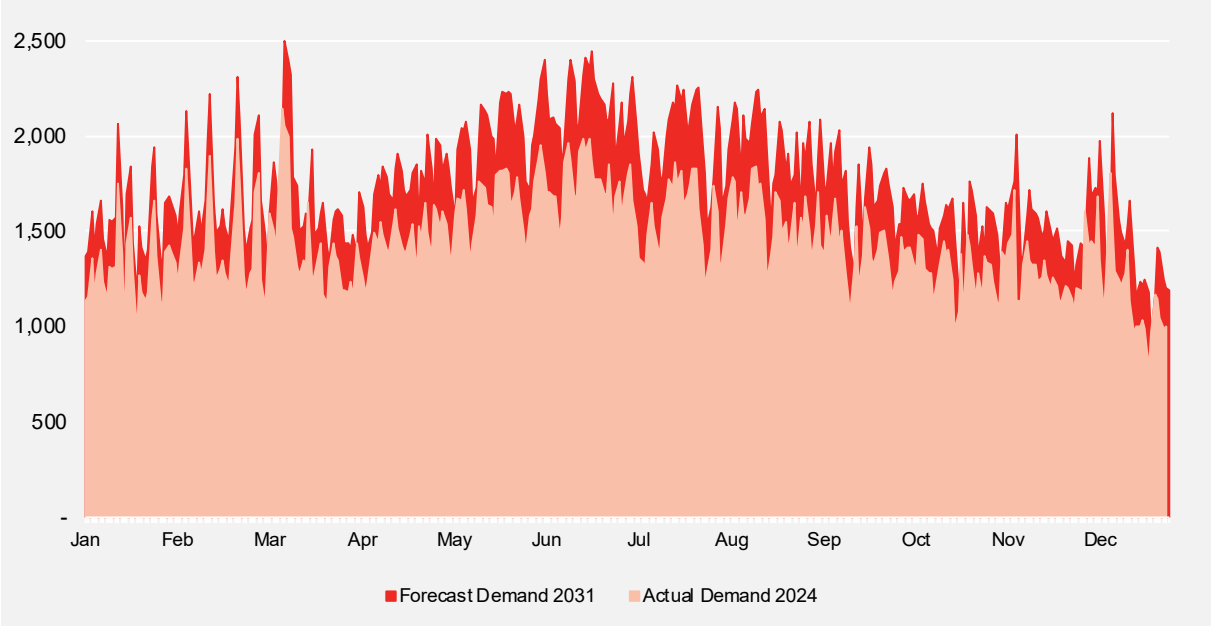
Customers are increasingly driving the energy transition through investments in CER, such as the electrification of gas appliances, solar photovoltaic (PV), battery technologies, and EVs. In addition, we are beginning to see the use of smart technology, including home energy management systems to help better orchestrate customer energy behaviour patterns.

At the same time, changing consumer preferences are producing daily, intra-day and seasonal shifts in how and when electricity is consumed.

Together, these changes will drive a significant increase in peak demand and annual consumption by 2031 and beyond. Growing demand from electrified heating will also drive an increase in the frequency and duration of winter peak demand periods—for example, figure 2 shows a comparison of our actual demand in winter 2024 compared to a forecast winter demand in 2031, with winter peak demand expected to grow 600 MW and result in more frequent peak demand periods compared to summer.

As outlined above, however, the nature of this load growth is becoming more 'flexible' than traditional demand growth. This provides a significant opportunity for innovative network management that maximises the role of non-network solutions. It is also consistent with the broader direction increasingly taken by the Australian Energy Market Commission (AEMC) which is a focus on reform to improve CER integration in the wider energy system.

FIGURE 2 CONSISTENCY AND INTENSITY OF WINTER PEAK DEMAND (MW)



AEMC's final determination on integrating price responsive resources into the NEM

The AEMC is increasing its focus on reform aimed at improving the use of CER in the wider energy system, including its recent determination on integrating price responsive resources in the NEM.

Previously, unscheduled resources (such as virtual power plants, community batteries, and large flexible loads) were not fully integrated into the planning and operational functions within the National Electricity Market (NEM). The rule change had three core components to enable this, including:

- allowing aggregated CER, demand response and independent small generators/batteries to be scheduled and dispatchable in the NEM
- including a short-term incentive payment to drive participation in dispatch
- introducing monitoring and reporting functions to understand the forecasting challenges and errors from unscheduled price-responsive resources.

In its final determination the AEMC notes the significant benefits expected via this reform including energy security and reliability improvements due to more efficiently integrating these resources. In addition, it is expected that the total costs of providing consumers with electricity supply would decrease for all customers over the long term. IES were engaged and estimated the net benefit of the reform at $805m.

3.2 There is a long lead time for flexible market maturity, so we must start now

We have been actively tendering for non-network solutions, over and above our regulatory requirements, since 2020. The assessment process, especially where more than one provider is required to meet the identified need, is labour intensive for both our network and third-party proponents.

To improve on this in the current regulatory period, we partnered with the non-network (flexibility) marketplace, Piclo, to run a trial of their automated 'flexibility' platform and tendering system (Piclo Flex). The Piclo Flex platform streamlines much of this assessment work, validating non-network solution provider capability and creating a least cost bid stack of solutions where the capacity of multiple providers are required to meet the need at the lowest cost.

Our current experience with this trial is that, while there are non-network providers keen to participate, the market is currently not mature enough to consistently meet network constraints (in most cases) at a cost lower than network augmentation. Rather than providers with existing resources proposing them to support a network need, our experience was that most proposals were seeking additional funding as part of a value stack to justify an entirely new connection or development. As a result, our experience has shown that it will take time and regulatory commitment to successfully develop a mature third-party non-network market that can access both new and existing non-network capability.

Piclo Flex trial case study

In 2023, we launched a tender for $7.5m in deferral value across 20 unique projects on the Piclo Flex platform. This initiative was supported by an engagement campaign designed to generate interest and participation. We tracked outcomes from our flexibility trial, including the below:

- Emails to flexibility service providers (FSP) (150+)
- LinkedIn campaign impressions (90,925)
- Piclo website interactions (951)
- FSP registered as of July 2024 (competition deadline) (16)
- Number of bids submitted for open competitions (0)

While no bids were ultimately submitted for our open tender, we received strong interest and enthusiasm from FSPs for the development of a non-network market and a long-term vision for further collaboration.

The UK experienced similar barriers during the development of their flexibility market over the past decade, with a greater flexibility focus being staged over a significant period. Based on the UK Power Network (UKPN) and the Office of Gas and Electricity Market's (OFGEM) experience with using the non-network marketplace Piclo Flex, the benefits to developing a flexible market and maturing it, is progressive between the stages of market establishment and market maturity.

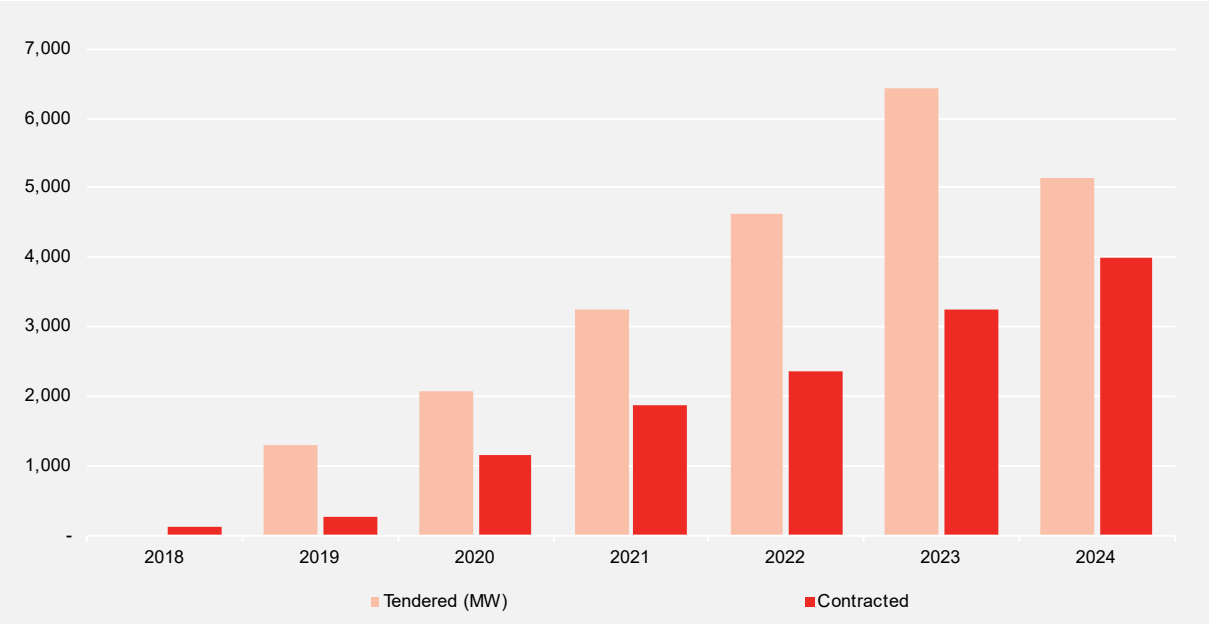
Based on historical success, the UK found it is important to regularly tender for non-network services to stimulate market growth and facilitate market development of third-party providers. The UK's experience demonstrates that commitment to developing markets will promote market maturity, which in turn leads to the volume of flexible capacity growing over time. This will result in material network augmentation deferral over the long term. Further, the proportion of augmentation that is suitable for tenders via platforms like Piclo Flex will gradually increase simultaneously with the proportion of tenders that receive successful bids.

Figure 3 below demonstrates the UKPN experience with Piclo Flex for the past seven years. There has been significant growth in the amount of flexible capacity utilised over time, as well as an increasing conversion rate between the amount of network constraints tendered and those contracted.

In the UKPN flexibility service procurement report, it discusses several factors for the increased uptake including:[3]

- collaboration with the market including taking on market feedback to improve flexibility service design
- commitment to increasing information provision and market transparency
- development of tender processes, in collaboration with Piclo Flex, to simplify participation for all types of flexibility providers.

FIGURE 3 UKPN TENDERED VS CONTRACTED SERVICES FOR DELIVERY (MW)



[3] UK Power Networks, Flexibility Services Procurement Statement, 2022

4. Options analysis

To address the identified need—improving the way we engage with the market to better utilise CER and support the availability of non-network solutions—we considered the option of investing in a non-network marketplace. This recognises the observed benefits and lessons from the UK's experience and is compared relative to a 'do-nothing different' counterfactual.

Table 2 provides a summary of our assessment of these options, with further detail in our attached model.[4] Option two is our preferred option with the highest NPV.

TABLE 2 SUMMARY OF ECONOMIC ASSESSMENT ($M, 2026)

	OPTION	PV COST	PV BENEFIT	NET BENEFIT
1	Maintain status quo: do not develop a non-network marketplace	-	-	-
2	Non-network marketplace	5.9	12.0	6.1

4.1 Option one: maintain status quo

The base case involves no additional expenditure, meaning we will continue to establish non-network solutions in line with our regulatory requirements such as the Distribution Annual Planning Report, and when it is viable to do so.

This approach is likely to perpetuate similar outcomes to what we are experiencing today, including lack of engagement from non-network service providers due to low economies of scale, a lack of visibility of existing assets capable of providing non-network services to networks, and a lack of incentives for new participants to invest in assets capable of providing non-network services.

The existing labour-intensive, piece-meal approach would also continue, which may limit our ability to support participants at scale.

4.2 Option two: invest in a non-network marketplace

Option two involves investing in a non-network marketplace. This option would improve the way we interact with the market to procure non-network alternatives (i.e. tender, contract and execute) by providing a streamlined and transparent process.

Under this option, we would develop, establish, and support the development of non-network marketplace. As aligned with our trial findings and the UK experience, an improved process for procurement is likely to lead to an increase in non-network services procured, particularly over the longer term.

The benefits of this option relative to the base case include:

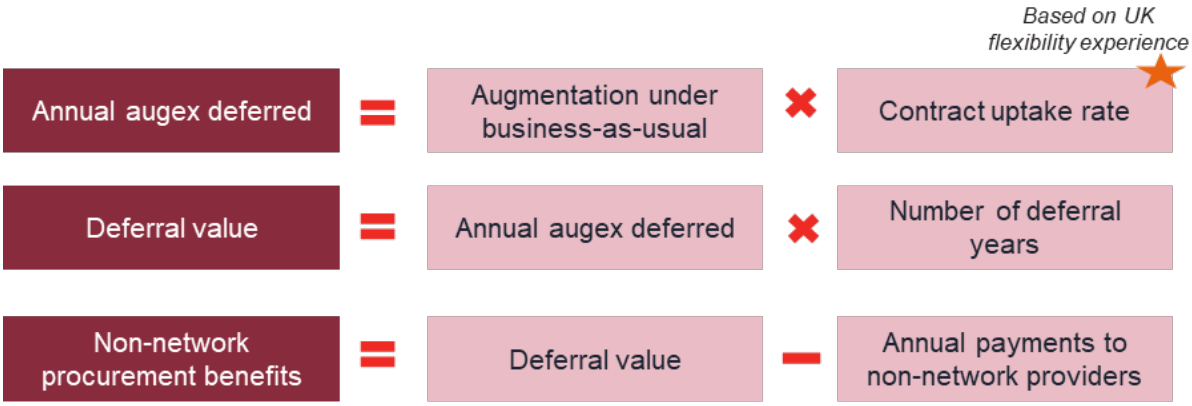
[4] PAL MOD 2.02 - Non-network platform - Jan2025 - Public

- increased up-take of more efficient non-network solutions, especially from pre-existing assets
- growth in non-network market maturity and more competitive non-network service provision over time
- lower network augmentation requirements, particularly when the market matures
- lower long-term costs for customers.

We undertook an economic analysis of the costs and benefits of this option relative to the base case. The assessment focuses on the benefits of deferring LV augmentation that would otherwise be required under our customer-driven electrification program.[5]

Figure 5 below describes our benefits assessment methodology.

FIGURE 4 SUMMARY OF APPROACH TO BENEFIT ANLAYSIS



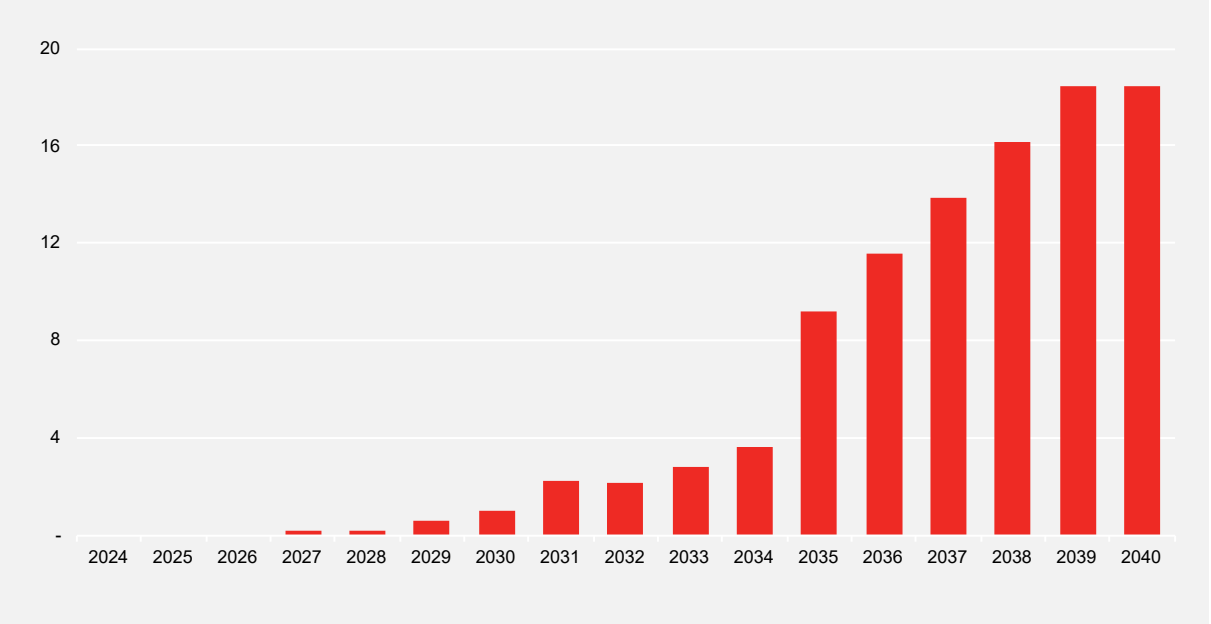
Increasing rates of augmentation deferral and increasing length of deferrals are assumed to occur over time as the non-network market matures and more providers become capable of providing more efficient services. Our modelled proportion of contracted constraints is informed by the UK's experience growing a market towards maturity over time.

Figure 5 illustrates our forecast deferred augmentation from increased non-network solutions. We are forecasting $1.3 million of deferred augmentation over the 2026-31 regulatory period. This augmentation deferral has been reduced from our customer electrification program.[6]

We expect to incur additional operating expenditure due to third-party payments for their provision of non-network services. However, we are proposing to absorb these additional operating costs and as such, have not proposed a corresponding operating expenditure step change. This means customers do not bear the risk of slower market development but will still share any upside of deferred augmentation.

[5] PAL BUS 3.01 – Customer-driven electrification – Jan2025 – Public
[6] PAL BUS 3.01 – Customer-driven electrification – Jan2025 – Public

FIGURE 5 FORECAST ANNUAL AUGMENTATION DEFERRED



A summary of the net economic benefits of this option are described below in table 3.

TABLE 3 OPTION TWO ($M, 2026)

OPTION	PV COSTS	PV BENEFITS	NET BENEFITS
Non-network marketplace	5.9	12.0	6.1

5. Preferred option

Option two is our preferred option as it is expected to deliver the highest net benefits for customers and represents a 'no regrets' investment. This option is aligned with recent regulatory reform, which is increasingly focused on improving the use of CER in the NEM, as well as international trends towards flexibility marketplaces. Table 4 presents a breakdown of the costs.

TABLE 4 SUMMARY OF PREFERRED OPTION ($M, 2026)

OPTION TWO	FY27	FY28	FY29	FY30	FY31	TOTAL
Capital expenditure	2.9					2.9
Operating expenditure		0.9	0.9	0.9	0.9	3.5
Total	**2.9**	**0.9**	**0.9**	**0.9**	**0.9**	**6.4**

5.1 Key functionality and cost

The key functionality and cost components associated with option two include our procurement platform network license fee, the non-network service platform and a small uplift in ongoing resources to enable the operation. This is explained in further detail below.

5.1.1 Cloud-based procurement platform

The procurement platform will likely be a third-party cloud-based product. The subscription product enables the process of procuring non-network solutions. More specifically, it will enable:

- improvements to our publication and procurement platform that publishes all network constraints, contract terms (including operational requirements), payments/incentives, and procurement rules
- development of a standardised payments/incentives approach to non-network alternatives including measurement and verification methodologies
- development of template network service agreements (e.g. term, penalties, performance requirements)
- development of an operational model setting out how and who will call on the capability and how and who will manage payments.

5.1.2 Non-network service platform

The non-network service platform will operate and execute the non-network services that have been contracted. This cost will include the dispatch and measurement / verification. Dispatch refers to sending dispatch instructions and scheduled messages to non-network providers. Messages will be relayed between Network operations and non-network providers, providing Network operations confirmation of the acceptance status of dispatch. Verification refers to verifying the exact amount of export/ load and whether this has increased/ decreased for the purposes of the billing process.

5.1.3 Ongoing operational costs

Establishing the non-network marketplace introduces new processes and opportunities for third parties. We will need to establish procedures for how we will engage with third parties to ensure we develop and maintain trust to maximise success of the platform. This was a key recommendation both

from our trial and stakeholder engagement program. We have proposed a modest uplift in full-time equivalents (FTE) to support this, with their main functionality including:

- engage, educate, and support customers into the non-network market, ensuring they are aware of the non-network marketplace and are well-informed when entering the market and making tender and contracting decisions
- monitoring the availability, dispatch and market clearing in the lead up to settlement. Settlements will be approved by program operators, where they will ensure post-dispatch measurements and invoicing is being correctly offered. This will also include engineering the process automation for participants, creating ease during the procurement, and settlement stages
- ensure the systems that are being integrated with the non-network marketplace are functionally operating.

A Our existing non-network solutions

YEAR	PROJECT
2022-2023	**Tarneit neighbourhood battery** The installation of a large-scale neighbourhood battery in Tarneit addressed local network constraints by enhancing the networks' ability to mitigate constraints and provide an example for future value stacking. Batteries will also effectively support increased residential solar output
2022 - 2024	**Summer saver demand management program** A behavioural demand response program that incentivises customers to reduce their power usage during times of maximum demand. The program targets high constrained areas that are at an elevated risk of overload outages during summer to defer network augmentation
2024	**Hot water load control trial** By using our smart metering system, we trailed hot water load control with 200 customers to increase the capability to coordinate and schedule the timing of our controlled hot water loads, to align with periods of low demand and high solar production
2018-2021	**The Energy Partner Program** The Energy Partner program was designed to incentivise customers to participate in demand response by managing their air conditioners for a short period of time (~3hrs) through a product known as Sensibo Sky. This device allowed us to coordinate the temperature set points of participants' air conditioners
2018-2020	**The voltage management for RERT** We developed a capability to use conservation voltage reduction to lower peak demand by reducing network voltages. We were able to offer this service to avoid statewide load shedding in AEMOs Reliability Emergency Reserve Trader as a result of supply shortfall in the summers of 2018/19 and 2019/20

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