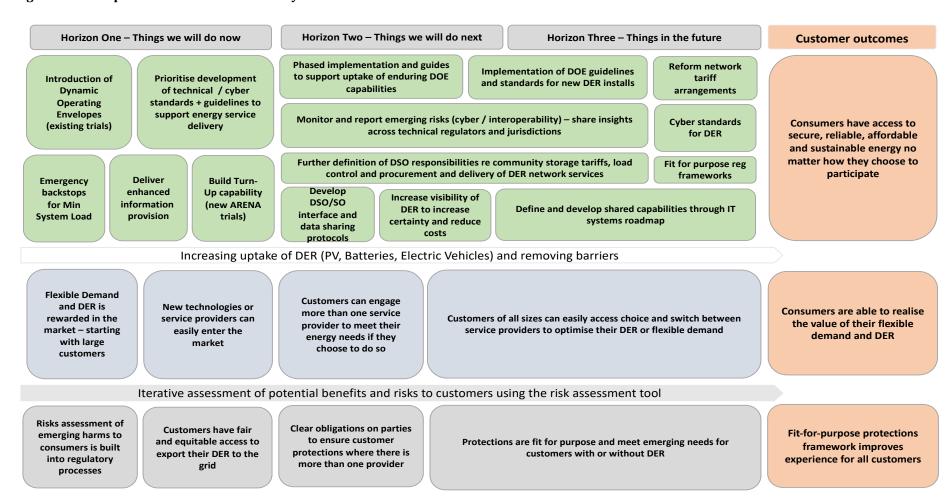
DER Implementation Plan – reform activities over three-year horizon

Figure 1 DER Implementation Plan - Summary View



Outcomes of the DER Implementation Plan

Enhanced use of technology and data

Distribution networks and SO to share data at interfaces:

AEMO to continue to operate the wholesale system, and DNs to actively operate and manage at distribution level. Clear processes needed to support info sharing at interfaces through APIs

Greater visibility of resources will reduce uncertainty:

Improved certainty will support improved forecasting and reduce costs of system operation, lowering costs for all customers

New technologies/devices can support energy service delivery:

More sophisticated standards (cyber, data, comms) are needed to enable safe and market responsive DER and support broader customer choices

Enhanced information provision to better inform market:

Greater visibility of the factors affecting system conditions and transparency of SO assumptions to enable market response

Improving access and efficiency

Emergency backstops to support higher penetration of DER:

Safety measures to be used as backstops only to maintain grid stability, while progressing to arrangements that incentivise load shifting

Traders to flexibly manage loads within dynamic operating limits:

Service providers trading flexible demand and DER in the market on behalf of customers need to manage these within dynamic operating limits

Fit for purpose regulatory frameworks:

Arrangements can enable enhanced consumer outcomes, testing of new models/tech (e.g. community batteries), use of sandbox environments

Tariffs and incentives provide the right signals to customers

Network provide signals to traders or customers to use their DER at the right times for the network, improving network efficiency

Customer outcomes

Consumers have access to secure, reliable, affordable, and sustainable energy no matter how they choose to participate

Reducing barriers to entry and supporting market participation

Flexible Demand and DER is rewarded in the market – giving value to customers and reducing total system costs:

Market arrangements signal value to customers to shift flexible load to times of the day where it is most valuable (starting with C&I)

New technologies or service providers can easily enter the market and offer new choice.

Current arrangements make it hard for new parties to enter the market. Reducing barriers to entry will support greater choice and innovation.

Customers should be able to access choice of service providers:

As new products emerge, customers should not be 'locked in' to choices based on manufacturers design of their DER assets. Standards need to support customer choices and switching.

New energy related products from non-traditional service providers

Where customers can receive value for their flexible demand or DER assets (e.g. EV or telco), they may choose different service providers to manage that value for them

Consumers are able to realise the value of their flexible demand and DER

Enhanced benefits risk assessment approach to keep customers protected

Fair and equitable access:

Customers choices to engage in products or services that value DER or flexible demand should not impose costs on other customers

Clear obligations where there is more than one provider:

Where customers choose to engage more than one service provider (e.g. to cover their home and EV needs), clarity re protections will be key

Consideration of Safe Defaults:

Where customers choose to engage in products that access and reward their flexibility, 'opt out' settings may support informed customer choices

The level of protection is appropriate based on risks:

A suite of arrangements under the ACL (incl NETCC), NECF and measures from jurisdictions provide protections that suit products and services and recognise energy as an essential service

Fit-for-purpose protections framework improves experience for all customers

Horizon One

Activities that will be commencing immediately, to be underway or complete by mid 2022.

- Completion of first phase of technical interoperability, communications, and cyber standards for DER, and definition of interoperability polices.
- Emergency backstops in place or in progress for jurisdictions to address system security challenges associated with low minimum system load events, alongside enhanced information provision from AEMO and early trials to promote price-responsive turn-up load in markets.
- First steps towards phasing in of dynamic operating envelopes (DOEs) as the long-term feature of the NEM DER ecosystem, with mandatory compliance for new solar PV and storage systems by 2025.
- First step mechanisms for increased DER participation, including new Flexible Trading Arrangements rule changes, including co-design through the CIC processes.

Horizon Two

The second horizon of activities in the plan will include:

- Implementation of scheduled-lite, to promote opt-in visibility for large C&I flexibility.
- Complete review of DSNP responsibilities in relation to the DSO transition, community storage, DUoS and DER energy service procurement, with a clear timetable for further reforms.
- Introduction of Trader services reforms, providing clarity on the various services and obligations for Traders in respective service categories.
- Commence work on EV smart charging standards and policies, including co-design with consumer and industry groups through the CIC process.
- Continued work on phased rollouts of DOEs with certain networks and jurisdictions to lead the adoption of active DER participation in markets.

Horizon Three

For reforms to be completed by 2025 or bringing forward long-term issues, the third horizon expects:

- Rollout of interoperability and cyber technical standards needed for active DER participation, mandatory compliance with DOEs, and processes for switching between providers.
- Introduction of the Trader services models and flexible trader metering arrangements, encouraging new providers into the market.
- Introduction of reforms to network regulation that drives network efficiencies through improved tariffs, and mechanisms to enable structured procurement of DER services by networks.
- Consumer protections frameworks have evolved to capture the risks associated with new products and services entering the market alongside the Post-2025 reforms.

Figures 3-5 sets out the activities associated with each time horizon.

Figure 2 Horizon One: things we will do now

Horizon One - Things we will do now

Introduction of Dynamic Operating Envelopes:

- Develop interim guidelines on metering and DOEs for installers together with industry bodies,
- Market trials underway are to inform guidelines on bestpractice capacity allocation rules prior to AER regulation.

Emergency backstops:

Backstops for Minimum System Load to be put in place across jurisdictions.

Trial front stop measures • AEMO to develop trials with ARENA and jurisdictions to build capability in 'turn up' response.

Enhanced info provision:

- · Improved market visibility of emerging system security risks flowing from minimum system load,
- · AEMO to develop guidelines and enhanced transparent market reporting (incl min load market notices).

Flexible Demand and DER are rewarded in the market:

- C&I customer access via WDRM
- · Further design of residential customer participation in markets
- DER marketplace trials (Project Edge)

New technologies or service providers can easily enter the market:

- Integrating Energy Storage RC provides choice
- Consumer protections will need to be assessed

New energy related products from nontraditional service providers

- Flexible Trading Arrangements (Model 1 and 2)
- assess potential risks to consumers,
- · Review retailer authorisation process.

Implement Risk Assessment Tool:

- Risk assessment tool to be built into processes across market bodies,
- Iterative consideration of potential risk and harm to customers as part of policy design and decision making.

Maturity Plan MP1

How to remove barriers for customers to be rewarded for their flexible demand: Use cases: C&I turn up loads + In home devices such as smart hot water systems, air conditioning loads or pool pumps.

Prioritisation of Standards for new technologies/devices:

- ESB / market bodies to provide clear policy directions and timeframes to steer DEIP work program on DOE. Interoperability and EVs standards.
- Support phased development of technical guidelines / handbooks to drive early adoption.
- · Identification of related capabilities needed for interop alongside standards,
- ESB / market bodies to complete interoperability policy and provide pathway to implementation.

Greater visibility of resources:

- Development of Scheduled Lite arrangements,
- DER marketplace trials (Project Edge),
- SAPN Flexible export trials.

Development of DER Cyber standards

- ESB / AEMO to provide clear scope and need ahead of Commonwealth (DISER) standards,
- Risk identification via DEIP interoperability workstream,
- Identify and inform market bodies of interim measures needed by mid 2022,
- · AEMO to maintain coordination with DISER. and oversight of interim workplan.

Ongoing Tariff Reform

· Tariffs will transition to be more costreflective. Trials to test out tariff structures will supplement the ongoing tariff reforms.

Further definition of DSO responsibilities

ESB / market bodies to provide clear policy directions and timeframes to steer DEIP programs, provide forward clarity for DNSPs.

Define and develop shared capabilities through IT systems roadmap

AEMO to publish NEM IT systems roadmap to enable shared view of future market system needs.

Fair and equitable access:

DER Access and Pricing rule change

Customers should be

able to access choice of

service providers:

Flexible trading

arrangements

(Models 1 and 2).

Clear obligations where there is more than one provider:

- · Review of retailer authorisation process,
- Flexible Trading Arrangements (Model 1 and 2).

Maturity Plan MP2

How do customers receive and give signals to the market? Use cases: Smart appliances + Process automation.

Year One: mid-2021-2022

Figure 3 Horizon Two: things we will do next

Horizon Two - Things we will do next

Standards for new technologies/devices:

- Move interoperability work into formal Australian Standards process,
- AEMC to commence rule changes associated with mandatory interoperability standards,
- AEMO to leverage pilots as an interim DOE repository for systems limits as step allowing opt-in compliance.
- Commence work on EV smart charging standards.

Trial front stop measures

- Continued pilots to test front stop "turn-up" measures to inform market changes needed,
- Learnings from pilots to be integrated in policy decisions.

Introduction of Dynamic Operating Envelopes:

- Market bodies to work with first networks commencing the use of DOEs and flexible connection limits to better understand the customer challenges,
- · Phased introduction of guidelines,
- AEMO to make available system level DOEs for min demand,
- AER to consult on capacity allocation and dynamic connection agreement details.

Fit for purpose reg frameworks:

- · Further detail on options for LUoS tariffs needed to support community battery storage,
- · Clarifications on DSO responsibilities, direct load control, storage, and system security participation,
- · Develop up structured procurement / DER network market details for market consultation,
- · AER to encourage new work on new tariff structures under tariff reform agenda with DNSPs

Greater visibility of resources:

- · Scheduled Lite Visibility Model,
- · Operational data published by participants.

Flexible Demand and DER is rewarded in the market:

- Remove barriers to residential customers accessing DR products,
- Scheduled Lite Dispatch model.

New technologies or service providers can easily enter the market :

- Streamline process for DER integration in ESS markets (S-Lite Dispatch model),
- Streamline processes for DER registration in ESS and RAMS.

Customers should be able to access choice of service providers:

Development of interoperability policy, and phased introduction of corresponding standards and processes for retailers and aggregators.

New energy related products from non-traditional service providers

- · Review of retailer authorisation process,
- Flexible Trading Arrangements (Model 1 and 2)

Clear obligations where there is more than one provider:

- · Review of retailer authorisation process to review,
- Flexible Trading Arrangements (Model 1 and 2), and interactions with DOEs

Protections are fit for purpose and meet emerging needs:

- Iterative assessment of emerging risks e.g. including review of cooling off periods, use of safe defaults, penalty /product design / other contract restrictions,
- Proactive assessment of where grey areas may emerge with customers / stakeholders,
- Does the scope of the NECF remain fit-for-purpose,
- · Assessment of need for new levels of retailer licenses.

Maturity Plan MP3

 $How \ do \ customers \ want \ to \ use \ smart \ charging?$ Use cases: smart charging infrastructure away from primary premises + EV smart home charging.

Maturity Plan MP4

How do customers choose and switch providers?
Use case: enrolment in VPPS + upgrading of existing systems.

Year Two: mid-2022-2023

Figure 4 Horizon Three: Things in the future

Horizon Three - Things in the future

Standards for new technologies/devices to support energy service delivery:

- · Completion of Australian Standards process on DER interoperability and comms,
- Publication of Cyber standards (DISER) for use alongside Interop standards,
- Implemented policy and associated interop standards to support switching,
- Finalise policy on EV smart charging standards and inclusion in interop.

Fit for purpose reg frameworks:

- Reg sandbox / Maturity Plan to consider scaling and integration of community batteries,
- · Tariff reform continues, with more cost reflective (TOU) tariffs.
- Regulatory changes to drive structured procurement for DER Network service uptake,
- · Publishing of network visibility data to improve planning and locational DER investment.

Introduction of Dynamic Operating Envelopes:

- Rule changes completed requiring new solar / storage installations to comply with DOEs,
- Several DNSPs publish DOEs to protect network limits in congested regions.
- · Phase in of full compliance for aggregators / retailers to apply dynamic limits,
- AEMO publishing min load signals through market notices and system DOE repository,
- Guidance released by AER on connection agreement conditions, capacity allocations,
- · Compliance mechanisms in place to monitor aggregator obligations for meeting dynamic limits.

Flexible trading and DOE pilot

- ARENA led pilot to better understand smart devices and multiple providers,
- · Test interactions of home energy management tech, flexible trading and DOEs.

Greater visibility of resources:

Scheduling arrangements continue to evolve as DER and flexible demand supplies a greater share
of energy and services to the power system.

Flexible Demand and DER is rewarded in the market:

 Large and small customers can easily choose products and services that value their flexibility.

New technologies or service providers can easily enter the market :

- More technology companies and service providers active in the market,
- Value streams across Energy, ESS, RAMS, Networks.

Customers are able to engage with more than one service provider to meet their energy needs at home – without this being too costly or complex:

- Flexible Trading Arrangements (Model 1 and 2),
- Tariffs and connection policies to support EVs and community storage products.

Future System Architecture provides the markets and services required to effectively integrate and value DER and flexible demand

- Reforms provide the functionality, systems and processes to facilitate customers DER choices,
- · Shared capabilities designed where these support future needs.

Customers should be able to access choice of service providers:

- Clarity on interoperability policy, and minimum compatible functionality,
- Full introduction of standards across retailers, aggregators and tech providers.

Protections are fit for purpose and meet customer needs:

- · Customer input via Maturity Plan supporting co-design of fit for purpose frameworks that better meet customer needs,
- Customers can switch DER providers without lots of cost or complexity,
- Customers can easily access choice to leverage flexibility from their DER assets (e.g. solar PV, batteries or EVs) and flexible load (e.g. air conditioning units, pool pumps or smart hot water devices)

Maturity Plan MP5

Priorities to be informed by earlier releases and customer + stakeholder input.

Maturity Plan MP6

Priorities to be informed by earlier releases and customer + stakeholder input.

Year Three: mid-2022-2023