



DEIP

Distributed
Energy
Integration
Program

**DER Access and Pricing
Workshop**

28 November 2019

Workshop Agenda & Location

Approx. Time	AGENDA
9 - 9.30am (30 mins)	Registration and Tea/Coffee
9.30 - 1pm (3.5 hours)	Morning Session (includes morning tea) <ul style="list-style-type: none">• Welcome & introductions• Scene setting• Agree on the problem we are solving for• Agree on principles and objectives
1.00pm	Lunch / networking
1.30 pm - (3 hours)	Afternoon Session (includes afternoon tea) <ul style="list-style-type: none">• Identify options for DER access & pricing reforms• Assess options against objectives and principles• Agree on options to take forward for future analysis• Nominations for reference group, March workshop, demonstrations ideas
4.30pm	Workshop close

WHEN

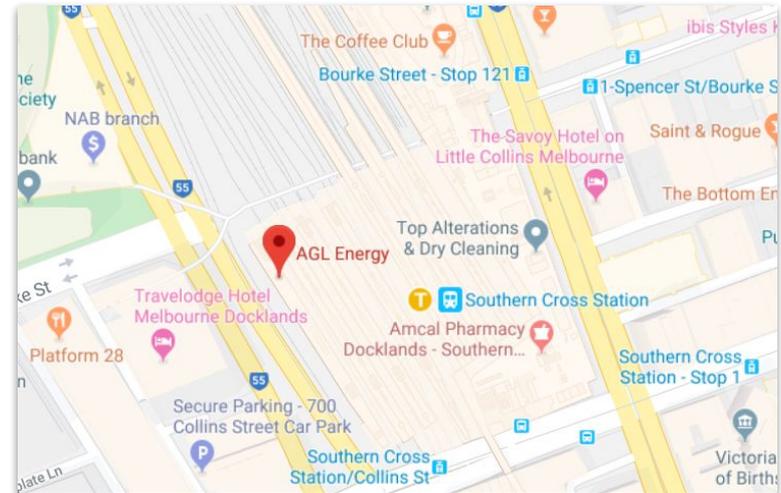
Thursday, 28 November 2019

TIME

9:00 am for a 9:30 am start and finish at 4.30 pm

LOCATION

Level 12, AGL Energy, 699 Bourke St, Docklands VIC 3008
Near Southern Cross Station



DEIP Overview

DEIP has enabled targeted outcomes through collaboration

NOTE: The DER Access & Pricing Package is a fundamental element of DEIP and this section plus the further details in the Appendix provides a short summary about DEIP as background context. For specific background reading for the workshop on 28 November please review slides 8 - 14.

DEIP Overview

What is DEIP?

The Distributed Energy Integration Program (DEIP) is a collaboration of government agencies, market authorities, industry and consumer associations aimed at maximising the value of customers' distributed energy resources (DER) for all energy users.

It was established in October 2018, through a co-design process and has supported improved knowledge sharing and a convergence of industry-wide focus toward closing functional gaps in the decentralised energy system by establishing targeted high-value work packages involving a diverse group of stakeholders.

Led by a Steering Group, the forum is driven by the premise that information exchange and collaboration on DER issues will enable more efficient identification of knowledge gaps and priorities and accelerate reforms in the interest of customers.

Why is DEIP important?

Customer-owned energy technologies such as rooftop solar, home batteries and electric vehicles have the potential to support a reliable, affordable and lower-emissions electricity grid. The uptake of DER is forecast to continue to dramatically increase and deliver almost half of all electricity supplied by 2050. Its current rapid rise is already impacting traditional grid management practices and market frameworks.

Australia's energy sector is at a critical juncture, with historically high prices, elevated system security concerns and customer satisfaction at an all-time low. It is clear that a significant industry-wide transformation is required to deliver an electricity system that meets customer expectations and is sustainable – this is the role that DEIP will play.

How will DEIP support the energy sector?

DEIP functions as a forum for collaboration with two major priorities:

- Exchanging value in markets – Energy markets that efficiently exchange the fair value from customer owned distributed energy
- Distributed energy and the grid – Technical systems and standards that enable the efficient use and operation of the distributed energy system and DER

Within these focus areas, DEIP has identified four work streams:

- Customer – Capturing and sharing customers preferences to inform the future reforms and services they want
- Markets – Enabling multi-party exchange of value in markets within physical network constraints
- Regulatory Frameworks – Optimising investment in and operation of network and non-network DER infrastructure
- Interoperability – Standardising the physical operation, visibility, cyber security and resilience of DER and the grid

What are DEIP's Future Priorities?

Using the principles of collective leadership, being collaborative and taking a fit-for-purpose approach each of the four focus areas have been detailed in the form of work packages which will be delivered through working groups defined in this paper.

The DEIP DER pricing and access package is a targeted collaboration area and was endorsed at the DEIP CEO Forum in November 2019.

Purpose & Vision

DEIP PURPOSE

The Distributed Energy Integration Program (**DEIP**) is a collaboration of government agencies, market authorities, industry and consumer associations aimed at maximising the value of Distributed Energy Resources (**DER**) for all energy users.

DEIP VISION

DEIP members have a shared interest in supporting the electricity industries evolution toward a distributed energy system that is secure, reliable, resilient, affordable and efficiently integrates and utilises customer's distributed energy resources ('DER'), enabled through Distributed Energy Markets.

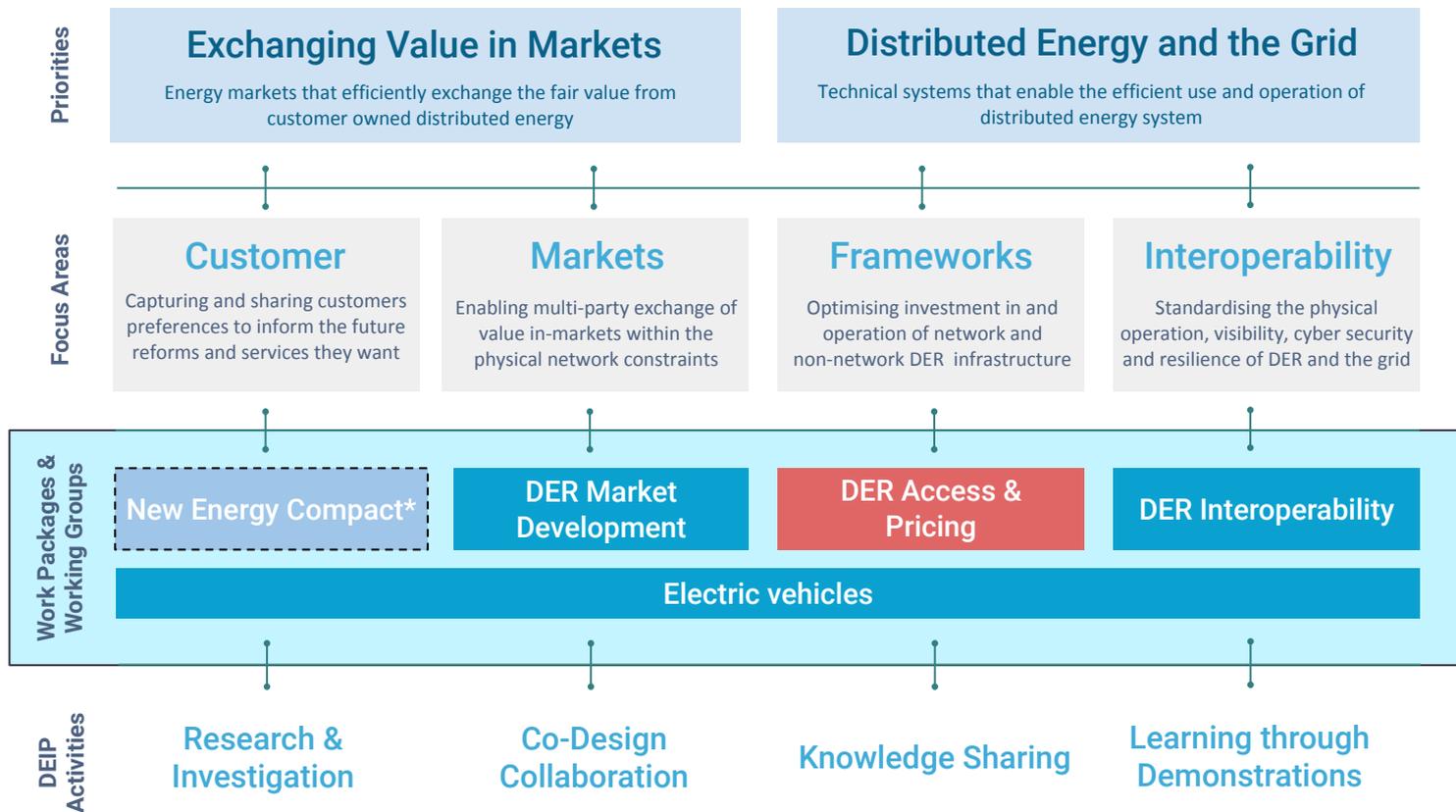
WHO IS INVOLVED

The DEIP Steering Group involves 13 organisations who communicate regularly (see logos on right). The guiding principles and collaboration structure is outlined on the next page.

DEIP Steering Group



DEIP 2020 Priorities



DEIP 2020 Work Packages

1. DER Access & Pricing

Building consensus and developing arrangements to support evolving regulatory frameworks to meet changing community expectations and higher penetration of DER

- ▶ Equitable DER access arrangements
- ▶ Two way pricing model (reconsider 6.1.4)
- ▶ Complementary measures (incentives, demand response)
- ▶ Regulatory investment frameworks
- ▶ Inform future through customer insights and engagement

2. DER Interoperability

Coordinated industry-wide support and implementation of DER interoperability platform, cyber security & device standards

- ▶ Data scope, quality and access
- ▶ Communications protocols (API working group)
- ▶ Facilitate customer choice
- ▶ Cyber security and resilience controls
- ▶ Device standards
- ▶ Standardise visibility and control of DER

3. DER Market Development

Testing the theory in practice for how DER marketplaces may deliver the most efficient outcome for consumers

- ▶ Market trials - do & learn
- ▶ Develop connectivity middleware solutions
- ▶ Test OpEN and alternative approaches
- ▶ Network monitoring and operating environments development
- ▶ Market integration of aggregators
- ▶ Planning and forecasting DER

4. Electric Vehicles

Facilitating the efficient integration of EVs into existing networks and markets

- ▶ EVs as DER (flexibility and coordination of EV demand)
- ▶ EV specific integration issues
- ▶ Fleet charging demonstrations (cars, buses, trucks)
- ▶ Demonstrations of V2X (including both V2G and V2H)
- ▶ Managed/smart charging demonstrations
- ▶ Connecting EV industry to electricity market reform



DER Access & Pricing Package

Building consensus on DER reforms customers want

Background Context

Investment by households and businesses in DER – such as solar PV, batteries, electric vehicles – has increased significantly in Australia in the last decade and is now a key part of Australia’s future energy system.

DER provides benefits and creates opportunities. For example, it can play an important role in reducing emissions, improving energy affordability, reliability and resilience, and alleviating future network constraints.

DER exports into the grid is creating new challenges. Reverse power flows can create voltage fluctuations, which distribution businesses are managing through export constraints. Higher DER penetration can lead to loss of resilience and ability to reliably manage the electricity distribution system. Local networks also have physical limits on the amount of DER they can host.

Further, high solar PV output has significantly reduced demand in the middle of the day, which has implications for how networks recover costs and how those costs are shared among solar PV and non-solar PV households. The current import only charging regime is also leading to inequitable outcomes, with the cost of DER integration being borne by all consumers regardless of whether they own DER.

The likely uptake of electric vehicles (EVs) creates the opportunity to significantly increase utilisation of the grid. It is widely acknowledged that energy policy needs to get ahead of this issue so that EVs do not overload the electricity system at times of peak demand – which could otherwise result in significant grid instability and expensive network augmentation.

These challenges are likely to increase with higher DER penetration, particularly as new DER products and services enter the market, and as energy users’ become more engaged in the electricity system.

Aspects of future distribution level markets and network optimisation models are being explored through other reviews – including the AEMC’s [2019 Economic regulatory framework review](#), AEMO/ENA’s Open Energy Networks project, and the ESB’s post 2025 market structure review.

Some networks are already looking at innovative approaches to manage higher DER penetration, such as dynamic export constraints. However, such initiatives are only interim solutions. Efficient integration of DER is not necessarily incentivised under the current regulatory framework. Current service and reliability obligations may incentivise distributors to heavily constrain export limits or built out their networks.

Reforming DER access and pricing arrangements could improve the responsiveness and flexibility of the regulatory framework, and will be a key step towards the vision for a fully integrated electricity system that delivers benefits for all energy users.

The DER Access and Pricing Package will identify access and pricing options and consider the regulatory framework required to incentivise more equitable and efficient investment and operational outcomes for all energy users, whilst being flexible to new technology developments.

Current access, connection and pricing arrangements

ACCESS AND CONNECTIONS ARRANGEMENTS

Under the current arrangements, distribution (and transmission) networks in the NEM operate under an open access regime for the connection of generation. This means generators, whether they are grid-scale renewable generators or small customers with roof-top solar systems, do not pay for their use of distribution or transmission networks in exporting energy, beyond a shallow connection charge to connect to the network.

For distribution networks, the connection charge varies with the type of connection service. While generators are not required to pay use of system charges when they export energy, they in turn do not receive firm (or guaranteed) access to the network. This means that any individual generator can be constrained off if the network is constrained.

Under the NER, network service providers are obliged to allow new generating units to connect to their networks. This means distributors could not avoid connecting DER to the parts of their distribution network even if connecting them would cause technical issues, provided they meet basic requirements – i.e. they lodge a properly completed connection application.

PRICING ARRANGEMENTS

Currently, retail customers that connect micro-embedded generation or DER, such as solar PV, are charged a shallow, one off connection charge (i.e. they are only charged for works related to the connection between their property and the distribution network) under a basic connection service. The connection charge principles set out in Chapter 5A of the NER prohibits retail customers from being required to make a capital contribution towards the cost of augmenting the shared network.

In 2014, the AEMC amended the NER and reformed the principles and process under which network tariff structures are determined. Distributors are now required to propose strategies to progress network tariff reform each regulatory period to the AER for approval in a Tariff Structure Statement (TSS). The distribution pricing principles balance cost reflectivity and customer impact considerations. These reforms relate to tariffs for the energy that customers take (import) from the grid.

Clause 6.1.4 of the NER prohibits a distributor from charging a distribution network user (such as an owner of a distributed energy resource) distribution use of system charges for the export of electricity by that user to the distribution network.

Draft Problem Definition

Current DER access and pricing models are not delivering DER investment patterns and services that are in the interests of energy users. Network technical issues (particularly voltage fluctuations and thermal constraints), network pricing constraints (import only charges and barriers to implement true cost-reflective tariffs), and inability to reward system benefits to access to markets are leading to negative outcomes for energy users, including:

- DER services are being over or undervalued at different times and places;
- DER services are facing increasing network constraints, with a subsequent loss of value for all energy users; and
- the distribution of benefits of DER investment can be inequitable, disproportionately affecting people on low incomes.

DER access and pricing solutions are needed to incentivise more equitable and efficient investment in and operation and service delivery of DER, and that are responsive to new technology developments, and optimise the outcomes for all energy users.

Package Overview

PURPOSE

The purpose of this DER Access and Pricing (A&P) Package is to identify energy user centred options for reform to DER access and pricing, to better integrate DER into the energy system and maximise benefits for energy users.

DRAFT OBJECTIVE

Identify a suite of DER access and pricing options that could be implemented under existing or new rules that:

- better reflect the system costs and benefits of DER products and services;
- deliver fair allocation of the costs and benefits;
- incentivise more efficient network and DER investment decisions;
- are responsive and flexible to accommodate new developments; and
- are broadly accepted by all stakeholder groups to the extent possible.

KEY OUTPUTS

Consideration of changes required to the regulatory framework to support better energy user outcomes

Provide basis to support potential rule change request/s

Identification of demonstrations to support ongoing capacity building and knowledge sharing

Details

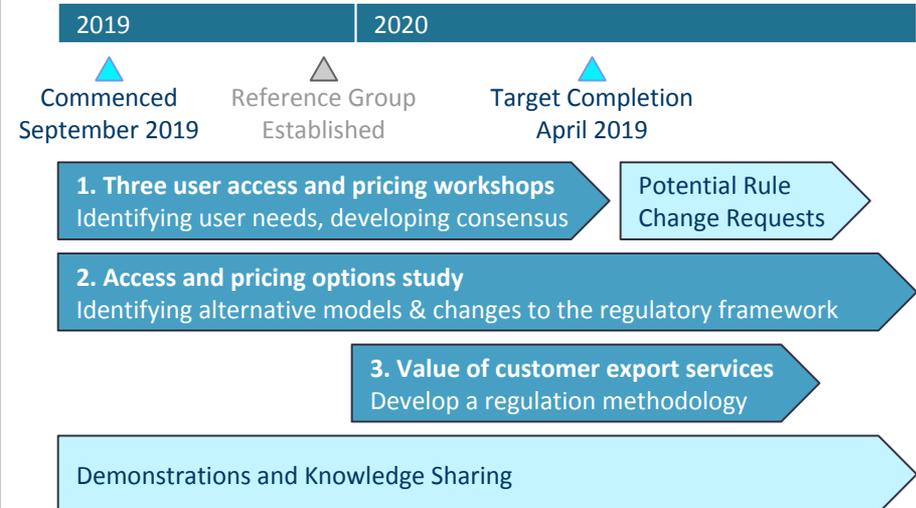
PACKAGE WORKING GROUP



ARENA



TIMEFRAMES & PACKAGE COMPONENTS



New Energy Compact: Draft Principles

At a September 2019 workshop, consumer representatives began development of the **New Energy Compact**. The Compact articulates a new vision and guiding principles to guide energy reform, regulation, policies and measures. Below are DRAFT principles adapted to inform development of options to improve DER access and pricing.



MEET THE NEEDS OF ENERGY USERS

- Benefit energy users
- Support access to DER
- Deliver DER services that energy users want at a price they are willing to pay
- Enable investment in a wide range of energy service models to meet the diverse and changing needs of people, businesses and communities



CREATE GREATER FAIRNESS AND EQUITY

- Fair distribution of costs and benefits
- DER owners pay to use the system and are rewarded for the benefits to the system
- Equitable access to shared network resources
- Risks sit with those best placed to manage them
- Aim to reduce inequality between cohorts
- Future energy users should not be left with unreasonable costs
- Energy is affordable in all locations
- The costs and benefits of DER services should be made clear, so that policy makers and end users can respond appropriately.



BE FUTURE FOCUSED AND RESPONSIVE

- Is flexible and responsive to support the innovation and growth in DER products and services
- Is clear and transparent



DRIVE EFFICIENCY AND REDUCE WASTE

- Lead to efficient network investment in short, medium and long-term
- Incentivise uptake of DER products and services where it helps reduce costs to the energy system
- Support and complements the uptake of energy efficiency and demand management



CONTRIBUTE TO RELIABILITY, SECURITY AND RESILIENCE

- Support the secure operation of the grid with regard to frequency, voltage, and thermal constraints.
- Support system reliability with regard to generation sufficiency and network outages.
- Incentivise DER products and services where it helps to improve the resilience of homes and businesses in response to severe weather events and cyber attacks.



SUPPORT THE TRANSITION TO ZERO EMISSIONS

- Support integration of more renewable and zero emissions energy
- Incentivise DER products and services to accelerate the transition to zero emissions

Reference Group

WORKING GROUP

The Working Group will coordinate efforts by developing and implementing the strategic direction and stakeholder engagement strategies, in line with the DEIP principles and with oversight from the DEIP Steering Group.

As part of our consultation process, the DEIP A&P Working Group intends to establish a **Reference Group** made up of a range of stakeholders.

The Working Group will collaborate with the Reference Group established after the 28 November DEIP A&P Workshop. The Working Group will consider nominations, and select a cross section of stakeholder groups to engage with directly over the next few months.



REFERENCE GROUP

The purpose of the Reference Group is to:

- Inform and 'stress test' DER access and pricing reform options
- Support the refinement of preferred options for discussion at the 11 March 2020 workshop
- Inform finalisation of the New Energy Compact

The AEMC has engaged an expert consultant, which will consult with the Reference Group to inform its presentation to the 11 March 2020 workshop and its final report (due April 2020).

Attendees at the 28 November 2019 workshop will be asked to nominate to join the Reference Group. It is intended that the Reference Group will represent a broad range of stakeholders, including:

- groups representing residential, SMEs and large energy users;
- network businesses;
- retailers;
- new service providers;
- Governments; and
- other market bodies.

Reference Group members will be asked to provide feedback on consultant material, and commit to attending the 11 March 2020 workshop and the following three Reference Group meetings:

- Mid-December 2019 – reflecting on the 28 November 2019 workshop
- Mid-February 2019 – in the lead up to the 11 March 2020 workshop
- Mid-March 2020 – to provide feedback on the consultant report

Appendix

An aerial photograph of a residential area with several houses. The roofs are covered with solar panels. The image is overlaid with a semi-transparent blue filter. In the background, there is a dense forest of trees. The text 'Appendix' is centered in the upper half of the image.

DEIP Guiding Principles and Collaboration Approach

DEIP guiding principles...

Collective Leadership

DEIP will prioritise toward developing and projecting a shared vision for change

Outcome focussed

Focus will be on solvable challenges that can impact outcomes over the near term (1-3 years).

Agile and fit for purpose

DEIP will build on existing work, approach challenges flexibly, and select the best suited techniques for each task.

Collaborative approach

No one party can affect systemic change in isolation and the DEIP is a useful medium to collaborate and reach consensus.

DEIP collaboration approach...



DEIP delivery structure...

WORK PACKAGES

Delivering

Activate stakeholders through collaboration forums to share learnings and building consensus around agreed outcomes

STEERING GROUP

Solidifying

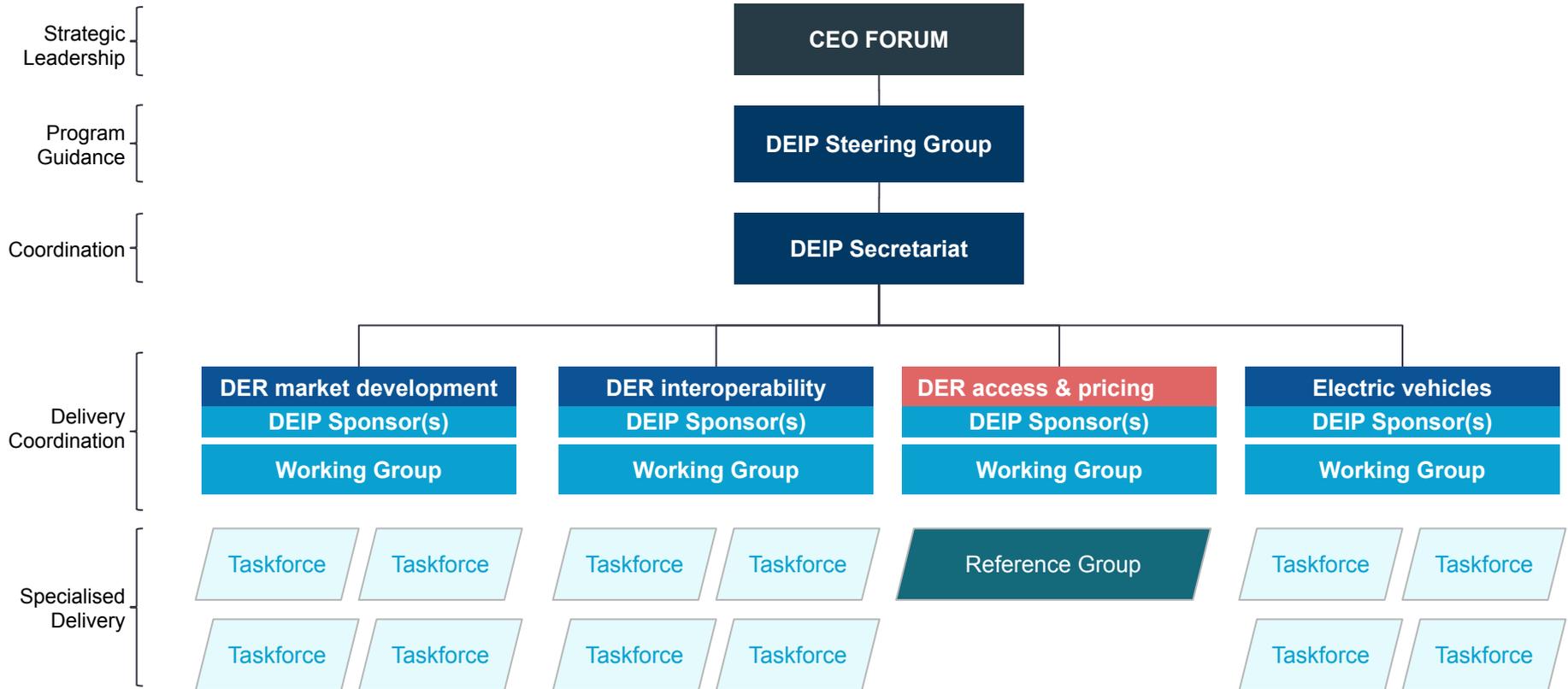
Consensus oriented
Builds cross-collaboration

SECRETARIAT

Forming

Forward planning for DEIP
Stress testing initiatives

DEIP Program Governance



Note: Each role is explained further in “DEIP Roles and Responsibilities” (see: appendix).

 **Note:** These taskforces / reference groups are under development.

DEIP Roles and Responsibilities*

CEO Forum

The CEO Forum will meet at least once a year and set the year ahead program priorities for DEIP. The forum will also support the allocation of organisation resources and commit to the outcomes agreed.

DEIP Steering Group

The Steering Group provides collective leadership to ensure all the right people are involved in the right way. It steers DEIP by providing advice about its priorities and direction. It meets on a bi-monthly basis with representatives from all DEIP members.

DEIP Secretariat

The Secretariat adopts an agile coordination approach, supporting Steering Group engagement and knowledge sharing. This provides a centralised coordination function for DEIP activities ensuring governance, coordinating communications and leveraging resources. They meet on a three weekly basis and will champion the DEIP Principles.

Package Sponsor

The Sponsor is responsible for package oversight by monitoring risk, coordinating resources, managing timelines, budget, project outcomes and maintaining the DEIP principles. They report to the CEO Forum and Steering Group on progress.

Working Groups

Working Group members will have oversight and responsibility to deliver a specified DEIP Package outcome in a specified timeframe. Members can come from DEIP members (on an opt in basis) and can include other relevant stakeholders.

Taskforces / Reference Group

A taskforce/reference groups is a small group, usually made up of cross sector subject matter experts or stakeholder representatives to accomplish a short-term task as defined under a work package by the Working Group. There may be multiple taskforces or reference groups per work package.

*Note: DEIP does not have any authority over any of its members or formal role in the sector. It is only a collaboration forum for knowledge sharing, consensus building, debate and priority setting to support Australia's energy decentralisation transition.

DEIP Frequently Asked Questions

Q. What is a DEIP work package?

A. The packages are a suite of complementary initiatives focused on a particular topic or challenge that bring together a number of stakeholders to address the challenge.

Q. What are the expected outcomes at the end of each DEIP package?

A. The outcomes for packages are expected to be progress overcoming key challenges identified in achieving the DEIP objective and will vary according to individual package identified, both in terms of what these outcomes are (e.g. spin-offs projects and studies) and timeframes to achieving these.

Q. What authority does DEIP have?

DEIP is not a decision making body and does not have any authority over any of its members. DEIP is only a collaboration forum for knowledge sharing, collaboration and priority setting to support Australia's energy decentralisation transition.

The organisation involved in the program are expected to operate within the bounds of their existing roles to implement outcomes and reforms.

Q Who supports the running of DEIP?

The DEIP Secretariat (AEMC, AER, ARENA, AEMO & ESB) currently support the coordination of DEIP. Work Packages will be sponsored by lead sponsor organisations who will coordinate the activities within and through working groups. The sponsors will be asked to report to the DEIP Steering Group semi- regularly on progress.

For more information,
contact:
DEIP@arena.gov.au