DEIP
DISTRIBUTED ENERGY
INTEGRATION PROGRAM

27 February 2023

DEIP CEO Forum
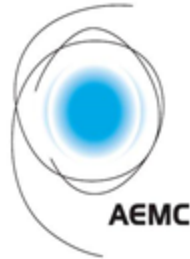
Introduction – Darren Miller (ARENA)

Acknowledgement of Country

EORA NATION
#ALWAYSWILLBE

ALWAY WAS, ALWAYS WILL BE
WURUNDJERI
COUNTRY

KNOW YOUR COUNTRY

NGUNNAWAL.
#ALWAYSWILLBE

DEIP OVERVIEW

WHAT WE DO

- **Coordinate** industry focus around particular DER issues and seek solutions.
- Facilitate **information exchange** and **collaboration.**
- Support efficient identification of **knowledge gaps** and **priorities.**
- Support rapid, evidence-based **actions and reforms** in the **interests of customers**.

HOW WE DO IT

- **Annual** workplans reflecting **DER priorities.**

DEIP

Today's Purpose

1 Reflect on the **purpose of DEIP** and the collective challenges we face

2 Discuss **DEIP's achievements** and feedback on the **program's effectiveness**

3 Review and endorse the **2023 work plan**

4 Seek **commitment for ongoing in-kind support** for the proposed work plan

DEIP

Agenda for DEIP CEO Forum

#	Item	Who	Description	Duration
1	**Introduction**	**Darren Miller (ARENA)**	- Outline today's purpose & agenda - Revisit DEIP's purpose and principles	5 mins
2	**Status update on DER transition**	**Mark Williamson (CER)** **Luke Barlow (AEMO)**	- Rooftop Solar Trends - State of DER	20 mins
3	**ESB Workplan**	**Jon Sibley (ESB)**	- ESBs priorities and alignment	10 mins
			Discussion	
4	**DEIP's year in review**	**Rachele Williams (ARENA)**	- Review DEIP's achievements in 2022	15 mins
5	**2023 work plan**	**Kate O'Callaghan (ARENA)** **Tim Moore (ANU)** **Caitlin Sears (ARENA)**	- Continuing activities - Interoperability Steering Committee - DOE 2.0	30 mins
			Discussion	
6	**Governance**	**Penelope Hallam (ARENA)**	- Review DEIP governance and communication	5 mins
			Conclusion	

DEIP

Australian Government
Clean Energy Regulator

Rooftop solar trends in Australia

DEIP CEO Forum

Mark Williamson

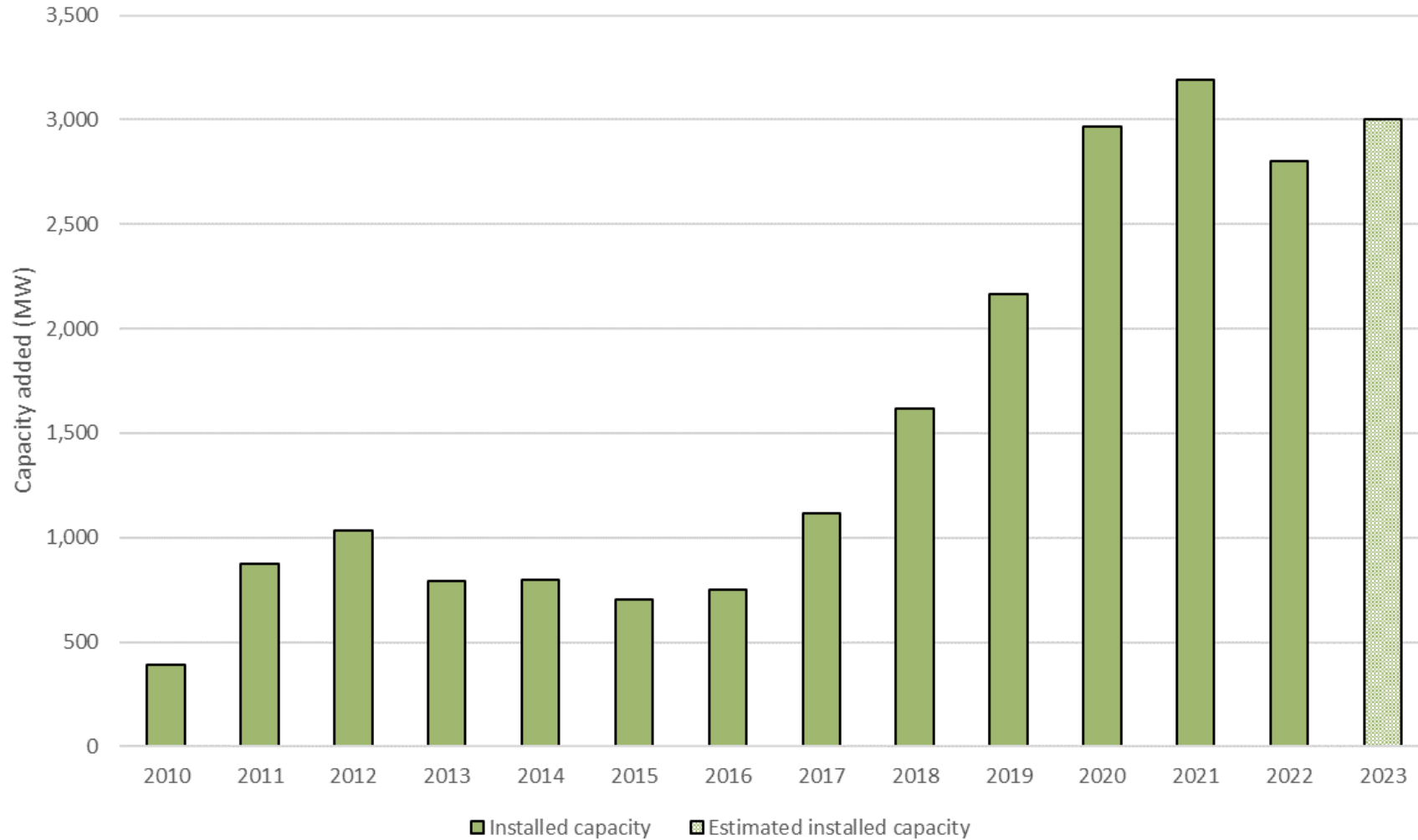27 January 2022

CLEAN ENERGY REGULATOR

Whole of Australia SRES trends
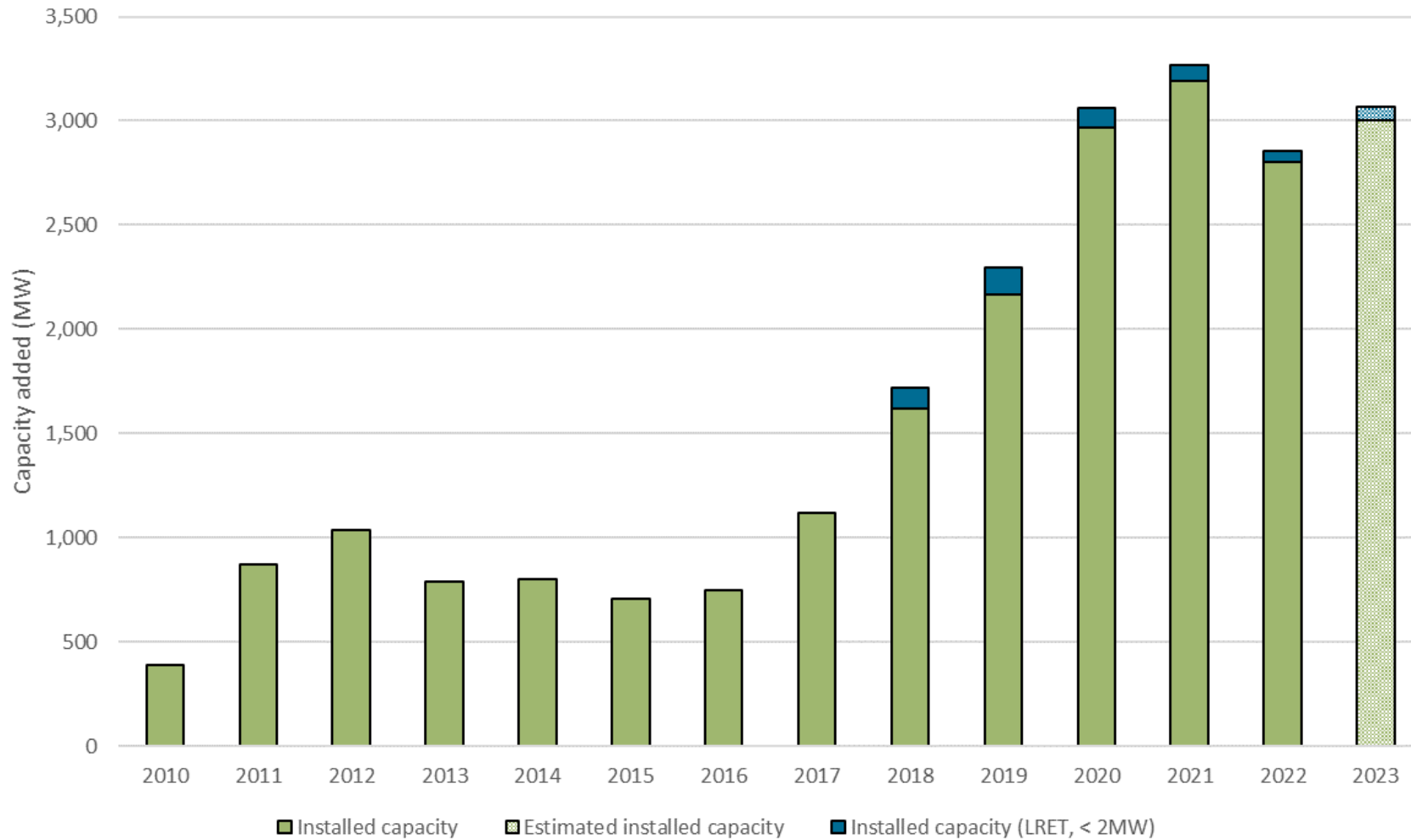
2010 - 2023

cleanenergyregulator.gov.au

Whole of Australia rooftop solar
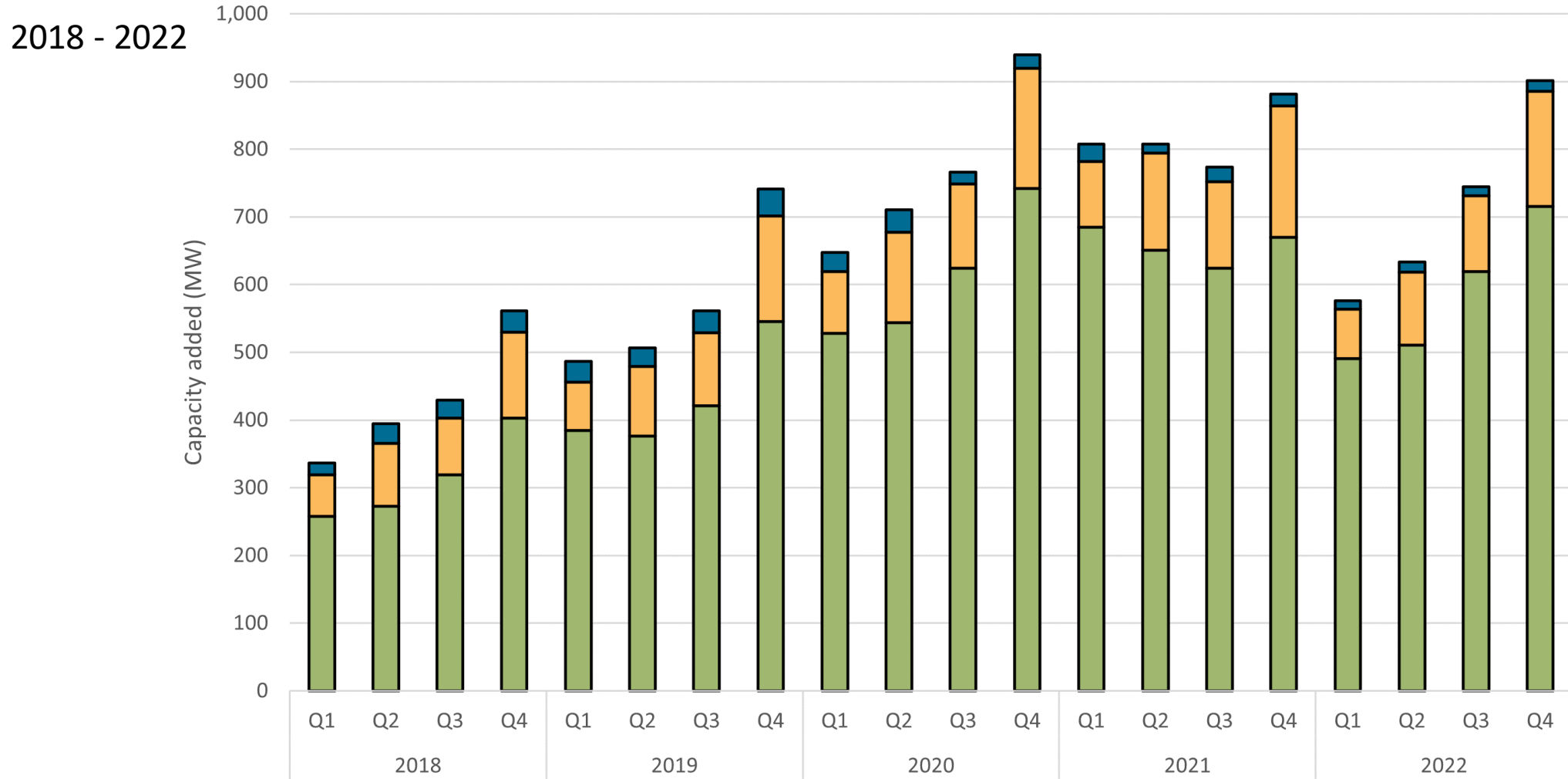
2010 - 2023

Rooftop solar seasonal trends – households dominate

Rooftop solar potential

Moorebank Logistics Park

[Australian Financial Review: This warehouse can power 40,000 homes (from its solar roof)](#)
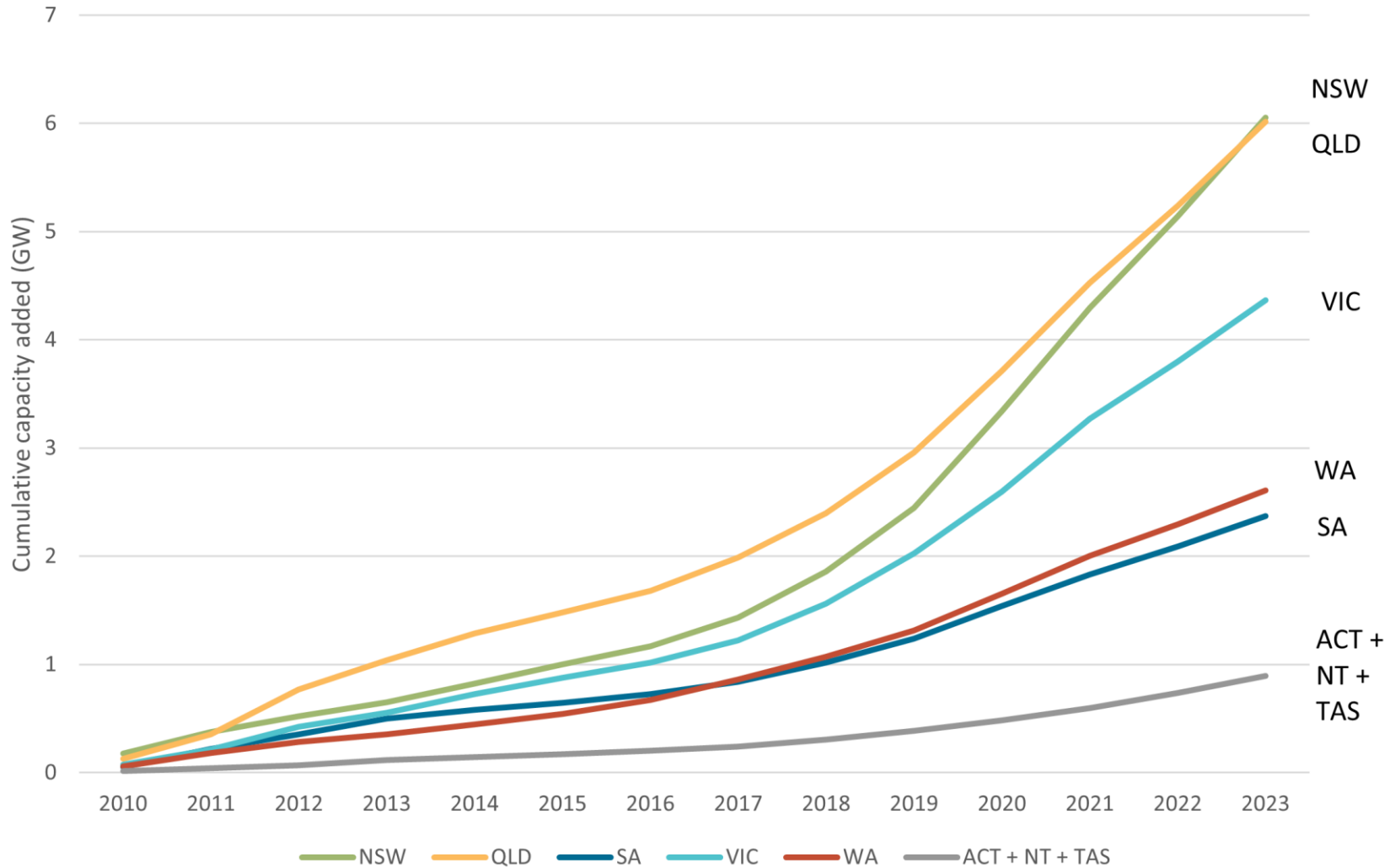
60 MW of solar PV capacity
150 MW / 300 MWh of battery capacity

CER CLEAN ENERGY REGULATOR

Cumulative installed capacity – 19.5 GW

2010 - 2023

Visit our website for:

- Renewable Energy Target market data (updated monthly)

- Quarterly Carbon Market Reports

CLEAN ENERGY REGULATOR

State of DER

Luke Barlow

27 February 2023

Operating with high DER

- Engineering Framework and Roadmap identified with industry ~40 DER technical integration actions

- Operational integration of VPPs and minimum system load processes into the NEM in 2022

- South Australian islanding event – November 2022

- Insights to operating at very high levels of DER
  - Tested new operational processes
  - Highlighted gaps in capability

DER Market Participation today

Scheduled in the NEM

- 65 MW (<50 sites) aggregated to provide wholesale demand response
- 58 MW (~12,000 sites) aggregated from VPPs to provide Frequency control ancillary service (distributed storage)
- Small generator aggregators (majority distributed PV) able to provide frequency control ancillary services from March 2023

Non-scheduled market exposed DER in the NEM

- 69 MW of DPV/storage from small sites (2022 DSP survey)

More information

- Engineering Framework and roadmap to 100% renewables
- 2024 Integrated System Plan
- SA Islanding event – preliminary report
- Project EDGE – DER Trial

Looking forward

- DER Participation Trials – informing the scope and timing of reforms.
  - Is there a common set of learnings that should be implemented sooner (or later) in the broader reforms supporting DER
- ESB and WEM Reforms
- 2024 Integrated System Plan
  - Scenarios – how will different uptakes of participation impact reliability and operability of the NEM

ENERGY SECURITY BOARD

UPDATE TO THE DEIP CEO FORUM

16 FEBRUARY 2023

CURRENT MARKET BODY REFORM INITIATIVES

AEMC-led processes	AER-led processes	AEMO-led processes	ESB-led processes
Technical Standards Review	Flexible Export Limits consultation	Scheduled Lite consultation	CSIP-Aus national requirements
FTA Rule Change	Review of Consumer Protections for Future Energy Services		Future interoperability use-cases
Review of the regulatory framework for metering services			Customer insights collaboration
			ESB data strategy

Coordination of reform outcomes and future planning

INTEROPERABILITY WORK PROGRAM – GROUP 1 ACTIVITIES

National CSIP-Aus ('flexible export ready') requirements

- CSIP-Aus PKI framework
- Cost-benefit analysis
- Jurisdictional sequencing
- Product certification processes
- Installation certification processes
- Roles and responsibilities
- DNSP requirements
- Post-commissioning processes
- CSIP-Aus standards management

By June 2023

Reform proposal for ECMM

INTEROPERABILITY WORK PROGRAM – GROUP 2 ACTIVITIES

Future Interoperability use cases

Behind-the-meter standardisation

EV smart charging policy & standardisation

Aggregator-CER standardisation

By June 2023

EV interoperability, data and cyber workplan (ECMM Tasking)

Recommendations (Workplan?) to progress future interoperability standardisation

ESB CUSTOMER INSIGHTS COLLABORATION 2022

The ESB's Customer Insights Collaboration has gathering insights to inform CER Implementation Plan.

- **Release One (Q1-2 2022)** – focused on establishing a baseline view of barriers and enablers to customer reward for flexible CER and energy use.

- **Release Two (Q3-4 2022)** – worked with the CER Implementation Plan project teams to apply the insights gathered in Release One, using customer journey mapping and other methodologies.

- **Knowledge sharing reports** from releases one and two are available on the ESB website*.

- **A key finding is** the need to consider the critical roles played by installers and technology providers, in pre-policy and policy work.

* https://esb-post2025-market-design.aemc.gov.au/customer-insights-collaboration

ESB CUSTOMER INSIGHTS COLLABORATION 2023

Release Three is gathering evidence around consumer needs, expectations and experience in relation to **EV charging** to inform ESB EV policy work on technical settings and interoperability.

- A Stakeholder Steering Group is being established to guide work.

- A review of Australian and international EV charging literature is underway (the ESB would welcome stakeholder input on framing and sources of insights.

- ESB working with ARENA to leverage relevant EV trials and related work.

Please contact Chris Alexander (chris.alexander@esb.org.au) to discuss further.

ESB DATA STRATEGY

Core Reforms – unlock barriers to benefits from data, supporting effective sharing of data for jurisdictional policy, research and the market

- **Initial reforms** – allow AEMO to share data with trusted bodies, including jurisdictions and public research. Agreed by Energy Ministers in December, implementation by June 2023.

- **Data Services** – proposes arrangements to build data sharing capability and processes. Consultation on proposed governance models closed in February, supporting an initial dedicated unit in AEMO, with a data user advisory committee. Implementation recommendations to officials by June 2023.

- **Common Guidelines** - work to begin in February 2023 on common data sharing terms and guidelines, to reduce barriers in data sharing with AEMO, network research and public research, including consumer consent.

Please contact Sarea Coates (sarea.coates@esb.org.au) to discuss further.

ESB DATA STRATEGY

Priority Data Gaps – Design solutions to critical gaps, addressing market failure and coordination problems.

- **EV Supply Equipment** – Consultation closed February on an options paper, proposing inclusion of EV chargers in AEMO's DER Register and related processes. Recommendations by June 2023.

- **Network Visibility** – Phase 1 workshops are underway with network data users and network data holders, defining priorities use cases and network data sets for consultation in April/May.

- **Bill Transparency** – work has just kicked off to develop options for more streamlined, timely and effective access to " what consumers pay". Consultation paper expected to be released May/June.

- Two final workstreams will be also be kicked in February/March - **Over voltage impacts** and **Consumer Metrics**.
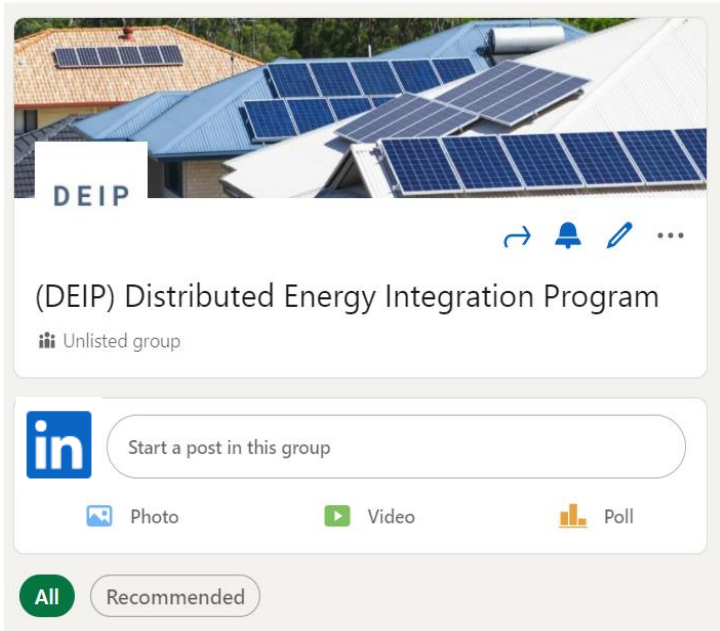
Please contact Sarea Coates (sarea.coates@esb.org.au) to discuss further.

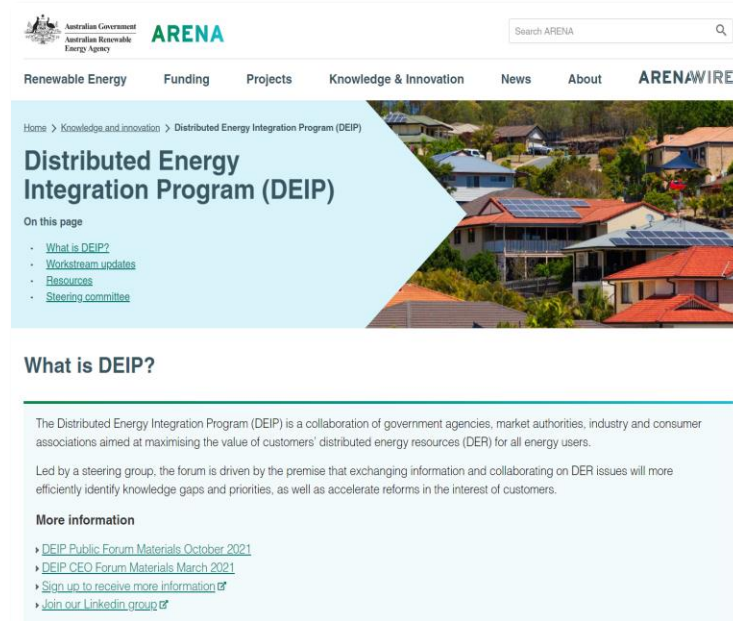# DEIP 2022 – Year in Review

Rachele Williams

DEIP

2022 Snapshot

400 LinkedIn Group members

~3,000 unique page views
500+ unique downloads

~140 DEIP Dive attendees
60+ organisations

Interoperability Steering Committee Highlights

ISC

✓ Three workshops rallying stakeholder perspectives around:

        Cyber Security
        Standards Co-existence
        BTM Interoperability

✓ Development of **CSIP-Aus** protocol and test-procedures

✓ **Standards Co-Existence** Integration Reference Architecture (largely completed)

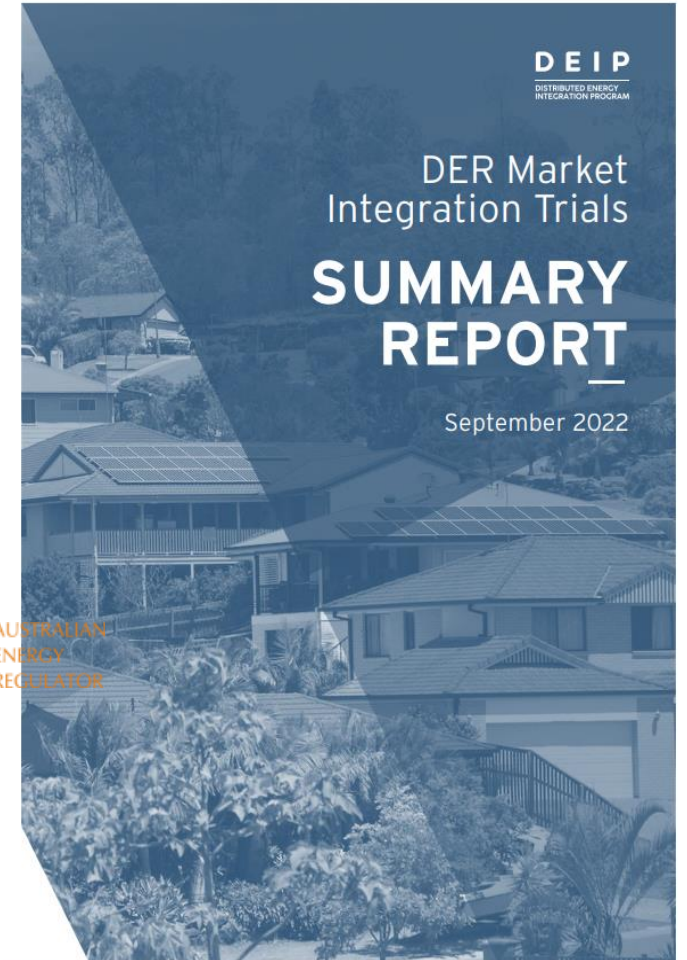
DEIP

Markets Working Group Key Achievements

Market Workstream

✓ Report on emerging **EaaS models** to contribute to enhanced customer outcomes.

✓ Consolidate outcomes from current **DER market participation trials**.
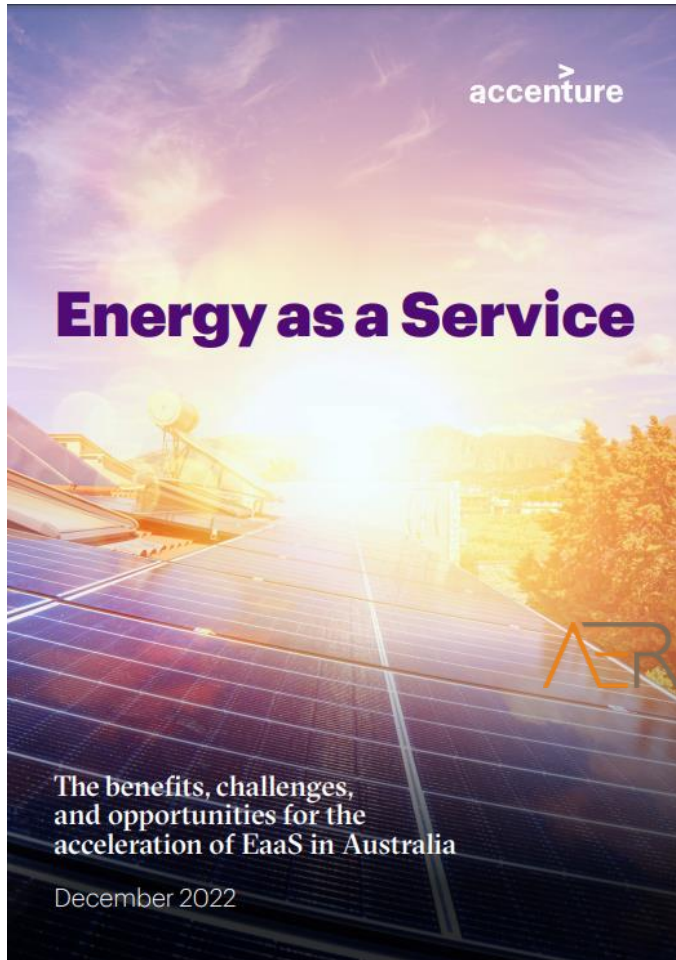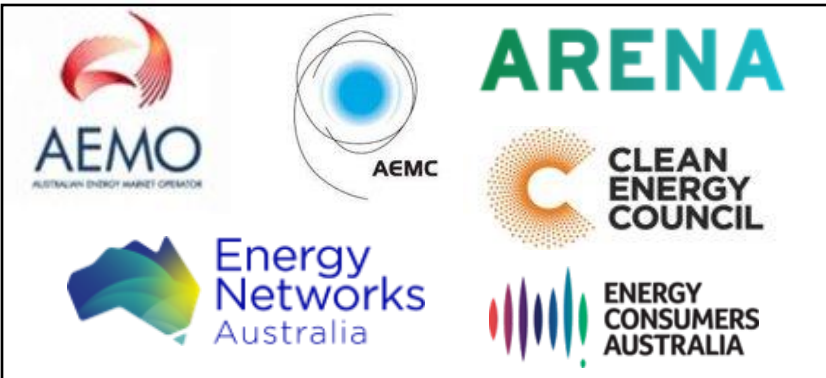
EV Working Group Highlights

EV Workstream

✓ Continued the **EV Grid Integration Reference Group.**

✓ Explored smart charging case studies from Norway, UK and USA.

✓ Delivered smart charging analysis from ARENA trials.

Highlight: DEIP Dive

Panel members Phillipa Watson (ANU), Laura Jones (ANU), Emma Fagan (Tesla), Lachie Simpson (Telstra) and Marlon Leicester (Reposit Power) joined by facilitator Rachele Williams (ARENA).

✓ Almost 140 attendees

✓ 3 sessions

1. The role of Public Interest Technology & Social Sciences
2. Outline of and outcomes from V2G and Market Trials
3. Panel and Table Discussion

✓ Key takeaway: face-to-face learning sessions maximise value

2023 Work Plan

Workstream Leads

Continuing activities
Kate O'Callaghan

- Activities related to the EV and Markets workstreams will continue.

- Maintain momentum by continuing to connect & share knowledge from projects, trials & initiatives.

- Executed by ARENA Knowledge Sharing.

Interoperability Steering Committee 2023

Tim Moore

Background

Interoperability is the ability of different IT systems, devices and software applications to **leverage two-way communication and to use, and exchange data accurately**.

The ISC has been operating in since May 2020 to **support the development and adoption of DER technical and interoperability standards**.

Challenge and Opportunity and Value

Customers are driving a distributed energy revolution in Australia.

However, **DER are contributing to dynamic two-way flows of energy** which must be coordinated effectively.

New interoperability standards and capabilities are vital to giving **customers choice and certainty** about their **DER uptake and usage**, whilst ensuring **energy reliability and energy security.**

Interoperability Steering Committee 2023

Tim Moore

2023 Planned Activities

Progress CSIP – AUS Development
- Further development of CSIP-AUS to support the proposed national mandate.
- Further development of retailer and trader use cases for CSIP-AUS.

Standards and Protocol Ecosystem Analysis
- Map the standards ecosystem.
- Develop a reference architecture for DER interoperability standards and protocols.
- Undertake a standards and protocol gap analysis to support DER integration and interoperability.

DER Cyber Security
- Map the cyber security ecosystem using the reference architecture for DER interoperability standards.
- Support ESB and Commonwealth implement national cyber security capabilities.
- Support the development of DER Cyber Security technical work plan (with Cth, ESB, SA).

Impact

1. **Support the rapid uptake of DER** for the benefit of consumers.

2. Simplify system integration of DER and **enables existing infrastructure to be used in smarter ways**.

3. **Allow DER to create value for individuals and communities** by supporting network and system operators.

DOE-based Flexible Imports (DOEs 2.0)

Caitlin Sears

Background

- Dynamic operating envelopes are the **technical limits** within which customers can import *and* export electricity, as set by the physical constraints in the local network.

- Most DOE trials are focussed on rooftop solar PV energy exports but new trials are exploring flexible imports applied to specific loads (e.g. EVs).

Purpose: Understanding the Value, Opportunities and Challenges

- Networks build out to peak capacity; this would allow customers to access the **additional capacity –** new & more loads are coming online in the future, unlocking additional capacity could help solar soak during the day.

- The **risk in doing nothing** is not understanding the value and implications for customers – opportunities, social licence, unknown unknowns.

- Flexible imports may not be appropriate for all customers, but we want to understand the necessary **protections needed for the customers that *do* choose it**.

DOE-based Flexible Imports (DOEs 2.0)
Caitlin Sears

Scope

- Allocate customers with **additional capacity**, *on top of their connection agreements*.
- Better understand how DOE-based flexible imports could apply to different customers and **explore potential use-cases**, such as EVs and community batteries.
- Explore the technical, social, regulatory and economic opportunities and implications for customers, including such as **customer protections, social licence and equity**.

Exploration approach

- This workstream will be informed by a series of **stakeholder workshops and/or interviews** with a focus on **exploration.**
- Facilitated by an experienced and **impartial third-party**.
- **Focus on exploration** and developing better understanding.

Impact

1. **Develop shared understanding** of the concept and customer value and implications of DOE-based flexible imports.

2. **Provide neutral, unbiased information** that decision makers can use to make **informed evidence-based decisions.**

3. Map the **opportunities and implications** for customers of DOE-based flexible imports **relative to other forms of demand flexibility.**

Summary & Discussion

Rachele Williams

DEIP

Summary of DEIP 2023 Objectives

ISC (BSGIP)	DOE 2.0 (ARENA)	Continuing Activities (ARENA)

OBJECTIVE

- Further development of CSIP-AUS to support the proposed national mandate.
- Drive industry understanding that multiple standards and protocols are required to enable DER integration.
- Implement a no-regrets DER Cyber Security work plan for Australia.

OBJECTIVE

- Create a shared understanding of what DOE flexible imports are, how they work and how they would apply.
- Map industry views on the value and challenges with DOE Flexible Imports to inform potential policy decisions.

OBJECTIVE

- Maintain momentum from previous EV and Markets streams by continuing to connect & share knowledge from projects, trials & initiatives.
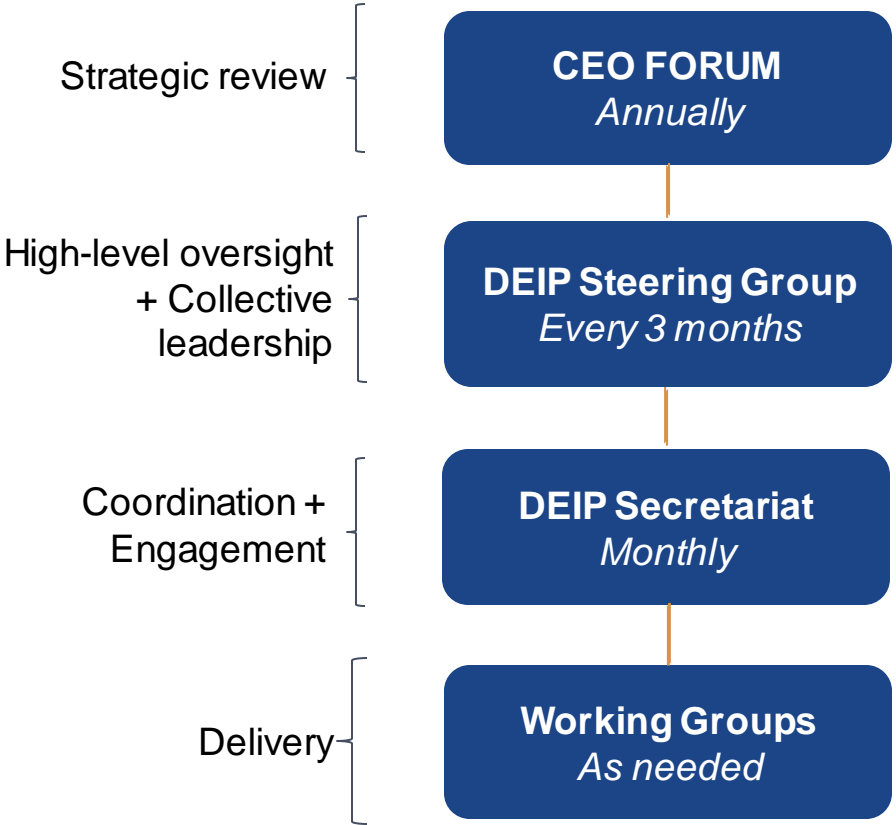
DEIP

Governance and Resourcing

Penelope Hallam

DEIP Program Governance

2022

Strategic review — **CEO FORUM** *Annually*

High-level oversight + Collective leadership — **DEIP Steering Group** *Every 3 months*

Coordination + Engagement — **DEIP Secretariat** *Monthly*

Delivery — **Working Groups** *As needed*

2023

Strategic review — **CEO FORUM** *Annually*

Collective leadership, Coordination & Engagement — **DEIP Steering Group** *Every 6 weeks*

Delivery — **Working Groups** *As needed*

DEIP
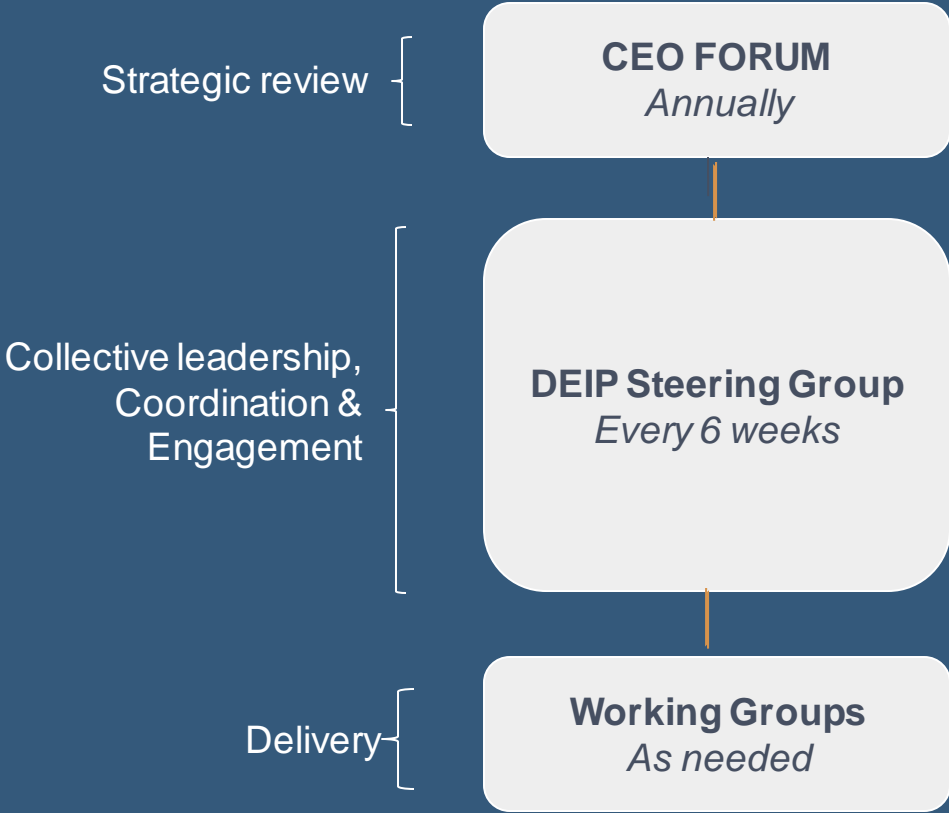
Communication and Engagement

#	Who	Regularity	Strategy	Content
1	Working Groups	**As needed**	Teams Meeting Workshops	- Collaboration, coordination and knowledge sharing
2	Steering Group	**Every 6 Weeks**	Teams Meeting	- Collective leadership
		As needed	In person meeting	- Discussion of DER-related industry initiatives and activities - Knowledge sharing and identification of information gaps or DER-related problems
3	Broader Industry	**Regularly**	LinkedIn	- DER-related reports, publications and news
		Quarterly	Newsletter	- Updates on the State of DER - Updates on workstreams and workstream events - Sharing DER-related publications
		As needed	Workshops and DEIP Dives	- Promoting discussion and debate on aspects of DER (e.g. DOE Flexible Import Workshops) - Informing industry

DEIP

Thank you

Rachele Williams

DEIP