



ESSENTIAL SERVICES COMMISSION



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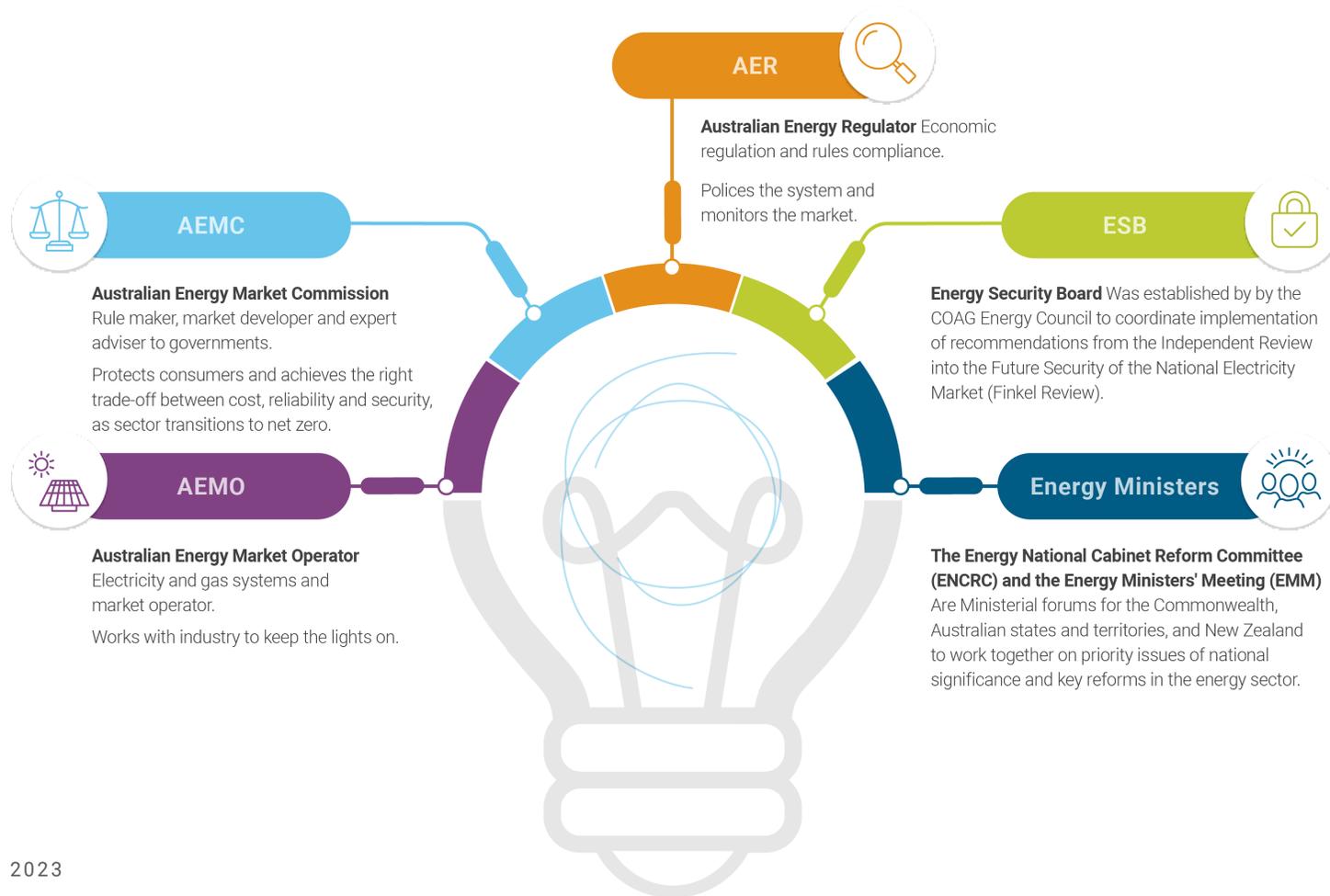
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Access Reform

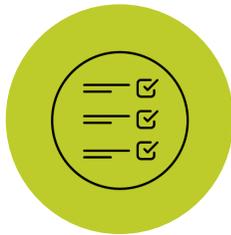
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How the market bodies work

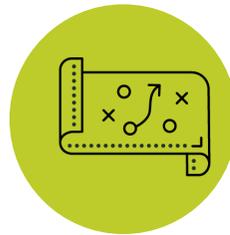


What does the Energy Security Board (ESB) do?

ESB is tasked with taking a holistic look at what changes are required so the NEM can meet the needs of consumers in a future of diverse sources of non-dispatchable generation, demand response, storage, and distributed energy protection.



Work on four key workstreams, that **address aspects of how electricity is generated and dispatched**, how consumers can access the services they want and how investment can occur in the most efficient way to avoid unnecessary costs.

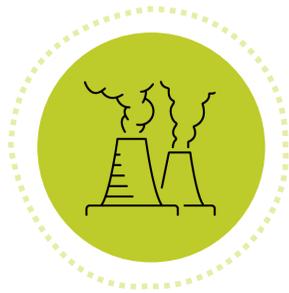


Objective of the reform work is to **ensure we have the appropriate tools in place** to support an orderly transition that minimises consumer costs and maintains reliability and security.



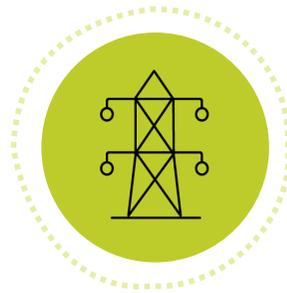
Key ESB workstreams

Resource adequacy and ageing generator retirement – **RAMS**



Stream of work seeks to **provide the right suite of incentives to support the orderly retirement of thermal generators** and encourage timely investment in a mix of new resources to maintain reliability.

Transmission and Access – **TAR**



Stream of work is looking **at how to better coordinate new generation** and network build to make sure the broader system is built and used efficiently – in a way that minimises costs for energy users.

Consumer Energy Resources – **CER**



Stream of work is firmly **focused on removing barriers** and increasing uptake for customers, and resolving the complex technical issues around standards and interoperability.

Essential System Services – **ESS**



Stream of work is looking **at how we deliver the critical things like frequency, inertia and operating reserves** – that have traditionally been provided for free by thermal generation as plants retire.

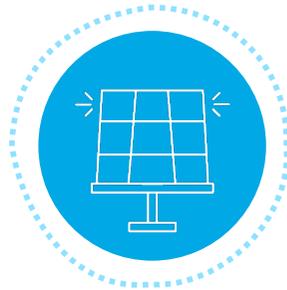
Key challenges and opportunities facing the market

1



Reliability
and capacity

2



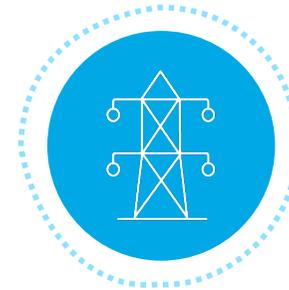
Increase renewables,
ensuring system
security (ESS), and
low demand

3



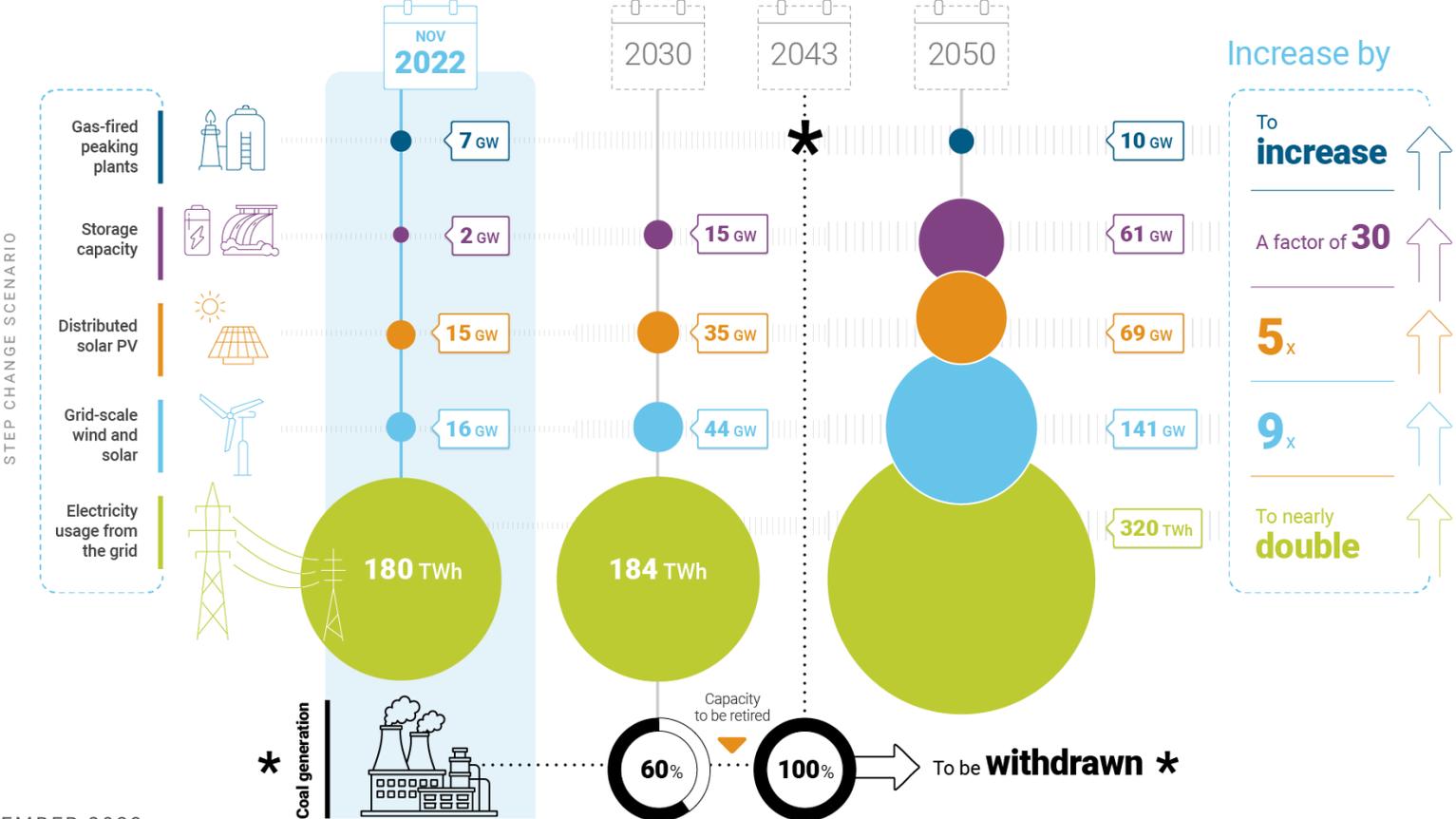
CER, integration and
future work on DSP
and two-sided markets

4



Transmission
access

'A once-in-a-century transformation in the way electricity is generated and consumed.'

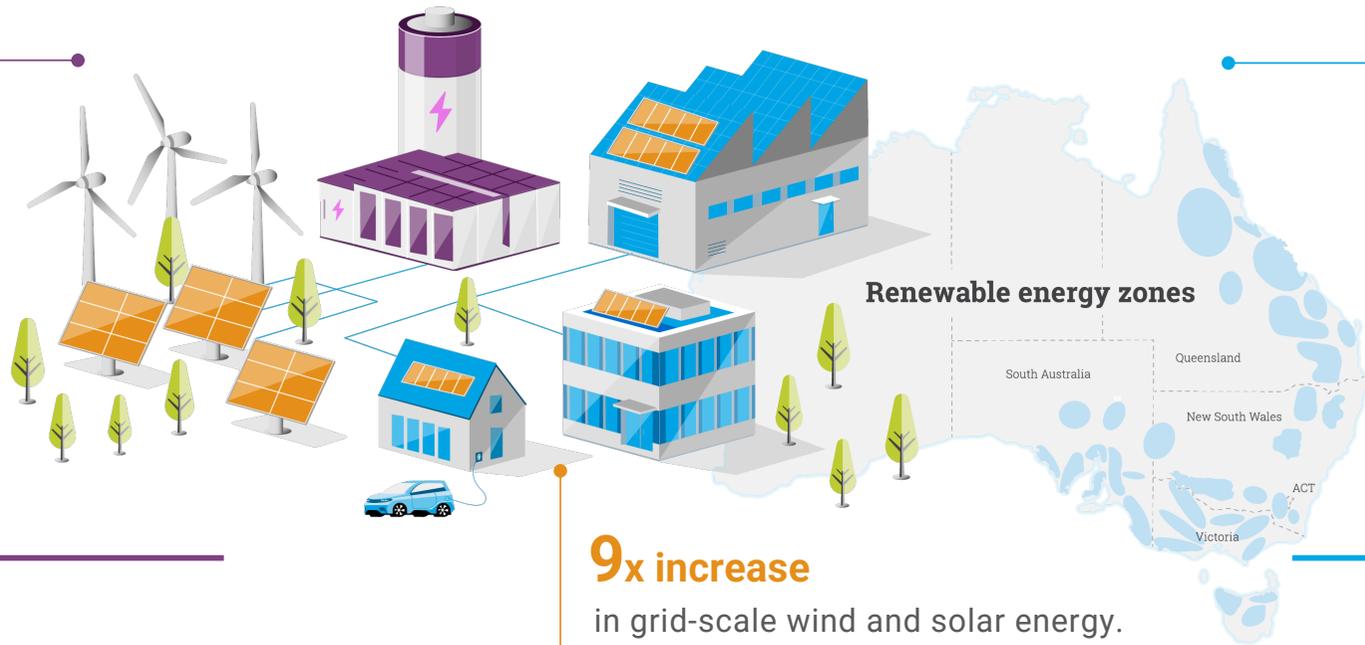


The task ahead

AEMO's Integrated system plan *step change scenario*



Doubling
of electricity
generation
by 2050.

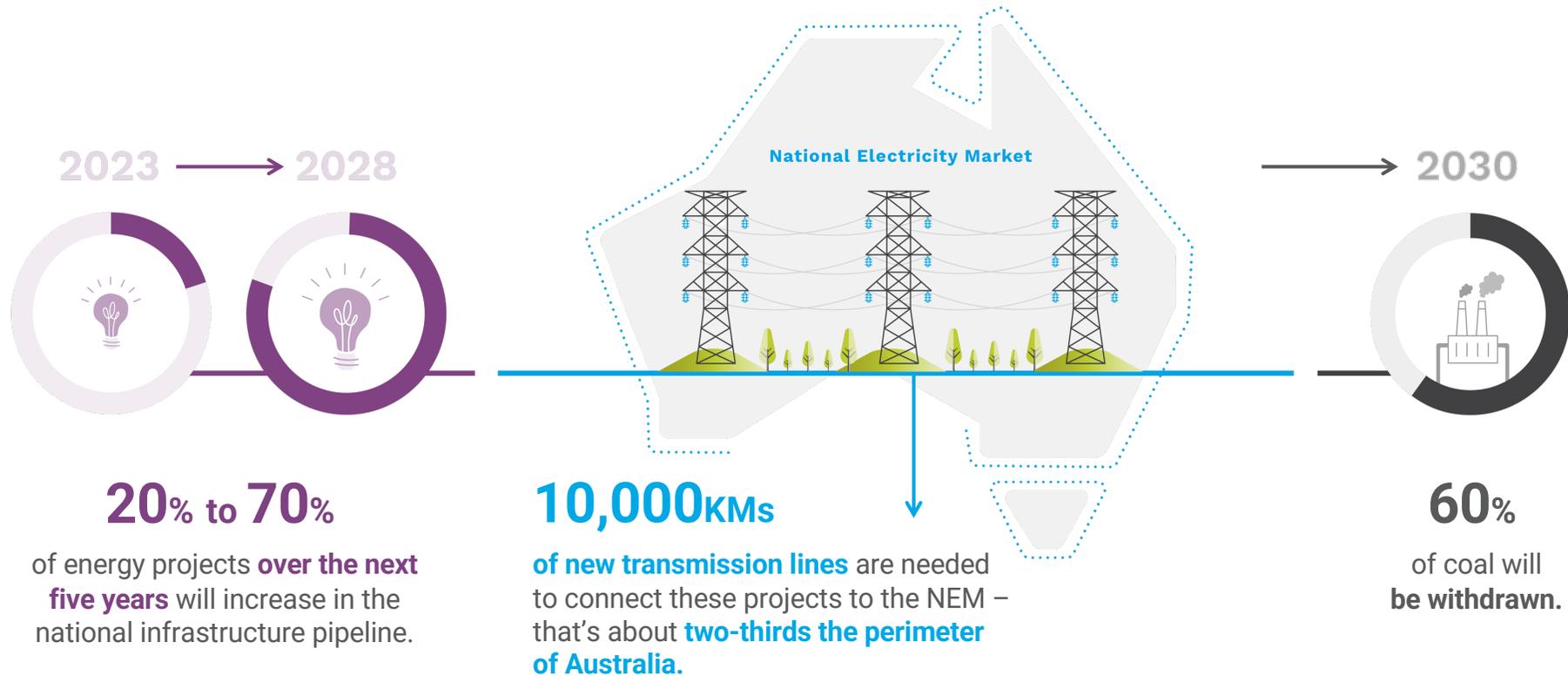


9x increase
in grid-scale wind and solar energy.

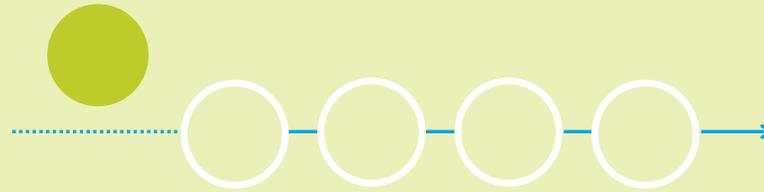
Large projects mainly in state **renewable energy zones** will have **141GW** of capacity – compared with current levels of 16GW.

Integrated system plan

AEMO's Integrated System Plan *step change scenario*



EMISSIONS REDUCTION



We're working with jurisdictions and the other market bodies to implement the new objective in a way that's consistent with our overriding aim – to deliver a well-priced, safe, reliable and secure supply of energy in a decarbonising economy.



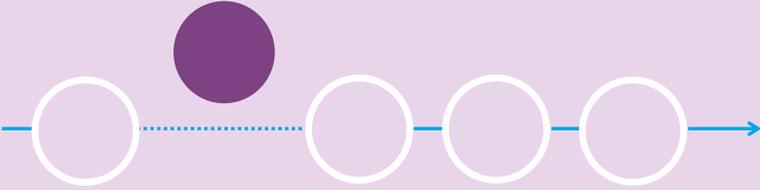
Emissions reductions

Subheading to go here



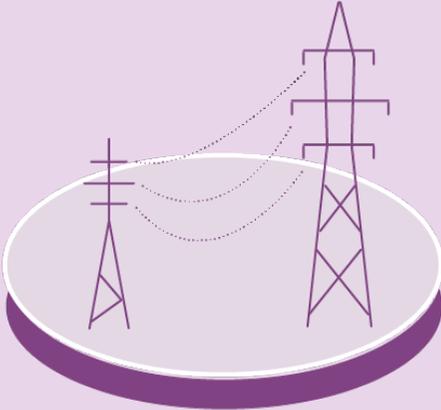
Jurisdiction	2030 emissions target	2050 emissions target	Renewables
Commonwealth	43% below 2005	Net zero	82% by 2030
ACT	65–75% below 1990	Net zero	100% (achieved)
New South Wales	50% below 2005	Net zero	25 TWh pa by 2030 (35-40%)
Northern Territory	–	Net zero	50% by 2030
Queensland	30% below 2005	Net zero	50% by 2030, 80% by 2035
South Australia	50% below 2005	Net zero	100% by 2030
Tasmania	Net zero (or lower)	Net zero – or lower	150% by 2030, 200% by 2040
Victoria	45–50% below 2005	Net zero	50% by 2030
Western Australia	80% reduction Govt below 2020	Net zero	–

TRANSMISSION REFORM



- economic assessment process
- social licence
- financeability
- emissions reduction
- feedback loop
- concessional finance
- ex post review.

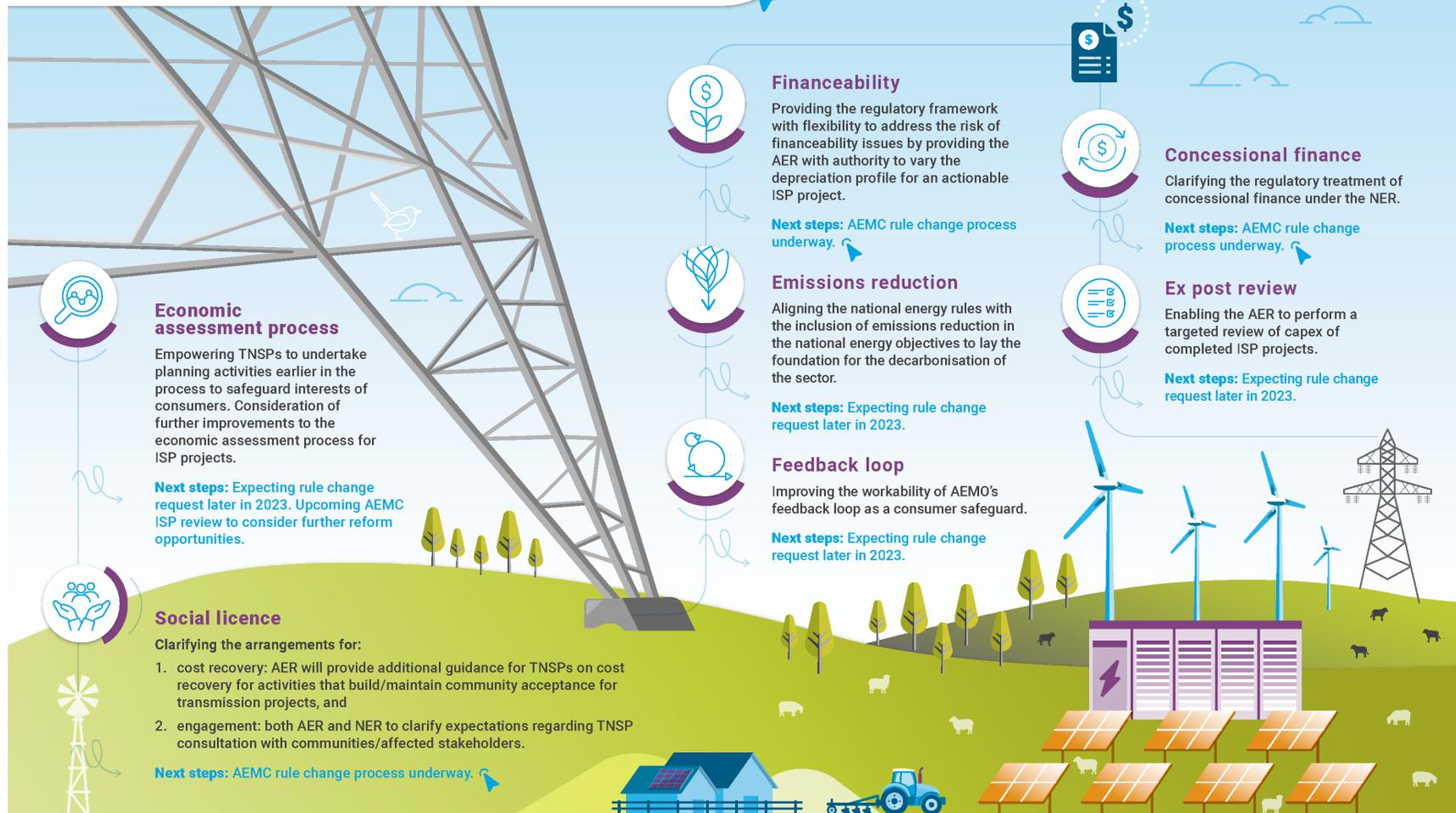
Making transmission investment and delivery more timely and efficient to enable the transition to net zero.



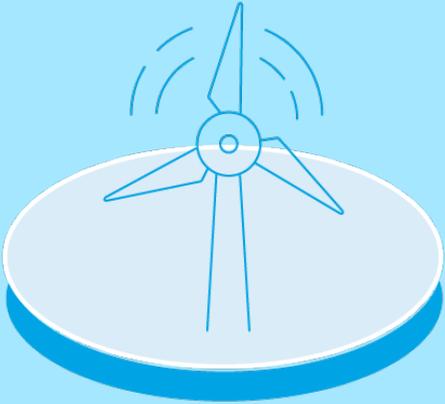
Making transmission investment and delivery more timely and efficient – to enable the transition to net zero

RECOMMENDATIONS FROM THE AEMC TRANSMISSION REVIEW

The review has made recommendations for changes to the regulatory framework which promote the timely and efficient investment in and delivery of major transmission. These recommendations will help protect consumers against significant increases in future electricity prices as we transition to net zero.



WHOLESALE MARKET INVESTMENT



We need market settings that encourage sufficient investment, and we are working to integrate with Commonwealth, state and territory initiatives.

As part of our body of work on reliability, we're looking to increase the market price cap to incentivise investment in the national electricity market.

CONNECTIONS



Solving the issues around connections – a significant reform that would facilitate more power generation.



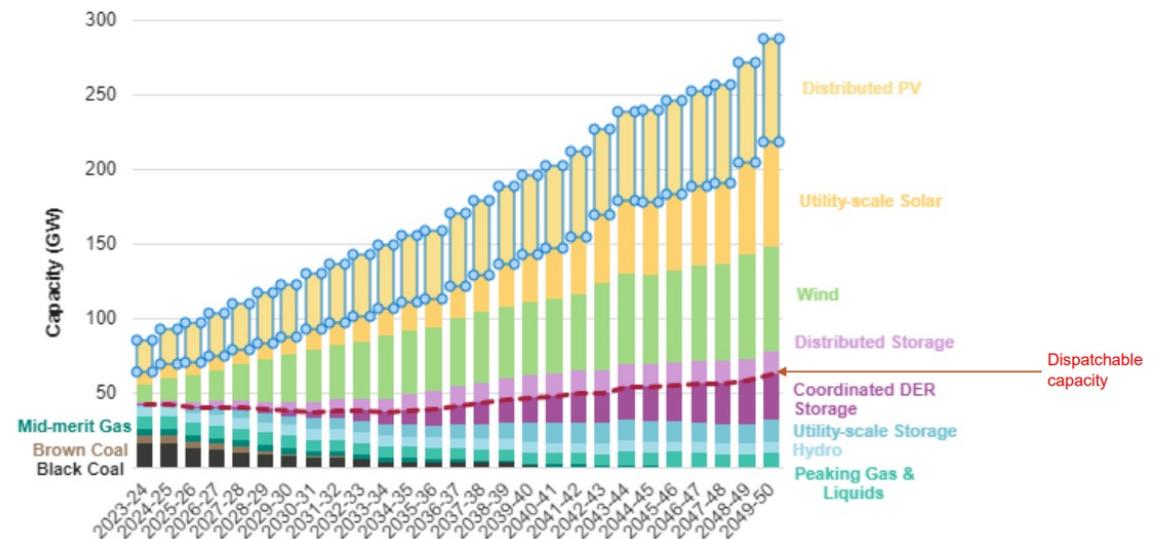
We are addressing this through:

- our reactive current rule change
- Clean Energy Council's rule change request on R1 connections
- expected request from AEMO on the implementation of the system strength framework and impact on generator connections
- enhanced information reforms.

Reliability and capacity

- Transparency of generator availability.
- Jurisdictional strategic reserves.
- T3 Ministerial lever for the Retailer Reliability Obligation (RRO).
- Capacity Mechanism .
- Orderly exit of ageing thermal generators.
- Review of future of the wholesale market.

ISP forecast NEM capacity to 2050, step change scenario



Source: AEMO 2022 Integrated System Plan, page 9

Capacity Investment Scheme

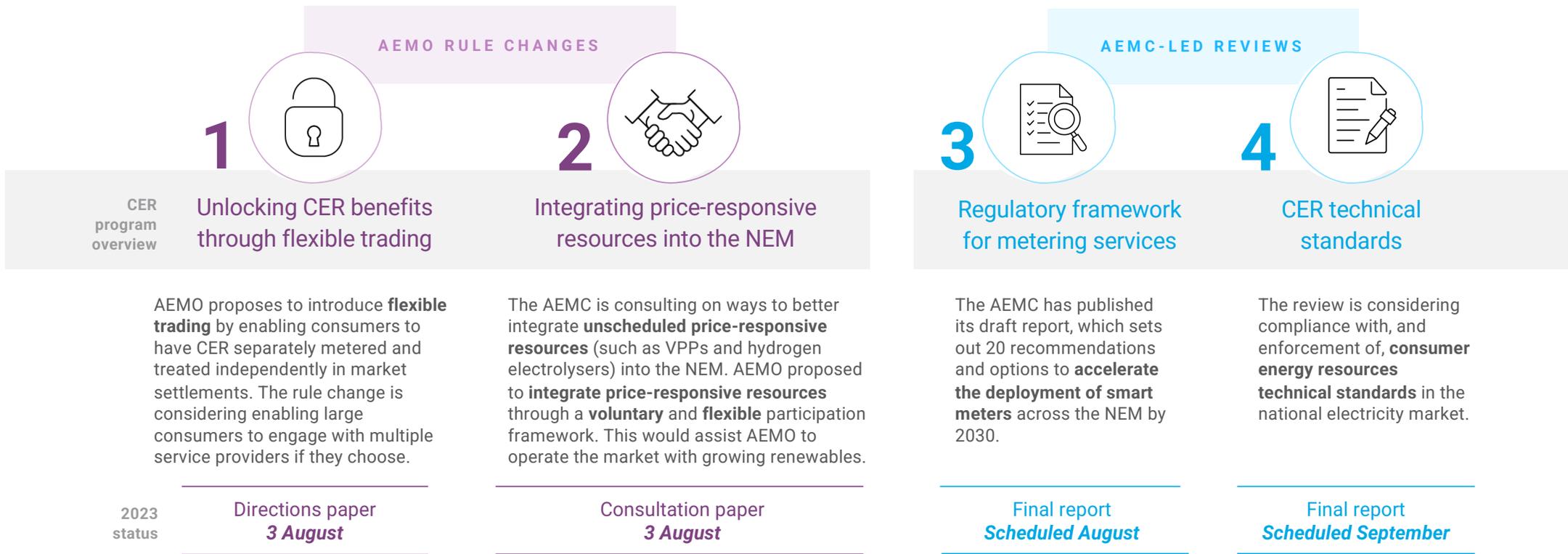
In December 2022, Ministers endorsed in principle a new Commonwealth Capacity Investment Scheme, which is a Commonwealth revenue underwriting scheme available to all jurisdictions nationally. The scheme is designed to encourage new investment in clean dispatchable capacity to support reliability and reduce market volatility in Australia's rapidly changing energy market.

Consumer energy resources (CER)



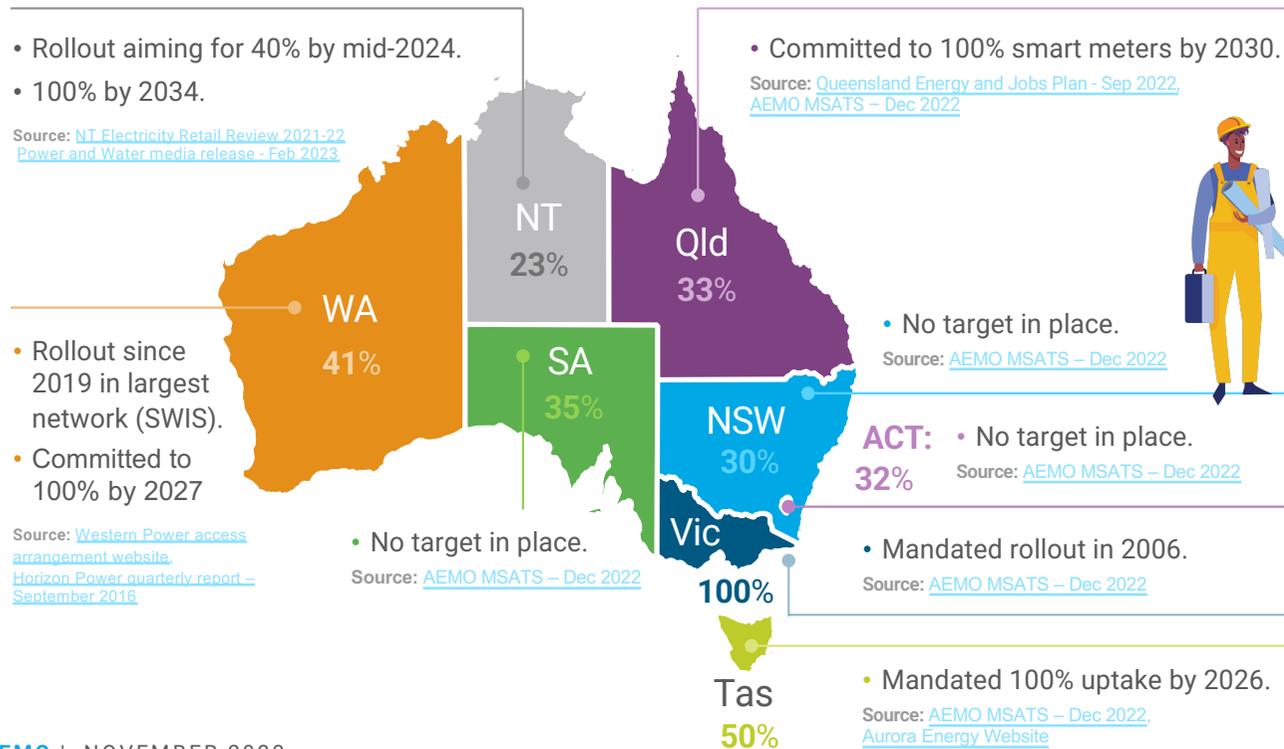
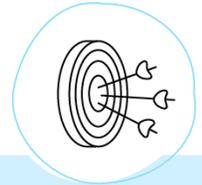
Consumer energy resources workstreams update

CER is a priority area for the AEMC for the 2023-24 financial year



Smart meters are a key enabler in the transition to net zero

Smart meters are foundational to a more connected, modern and efficient energy system that supports future technologies, services and innovation.



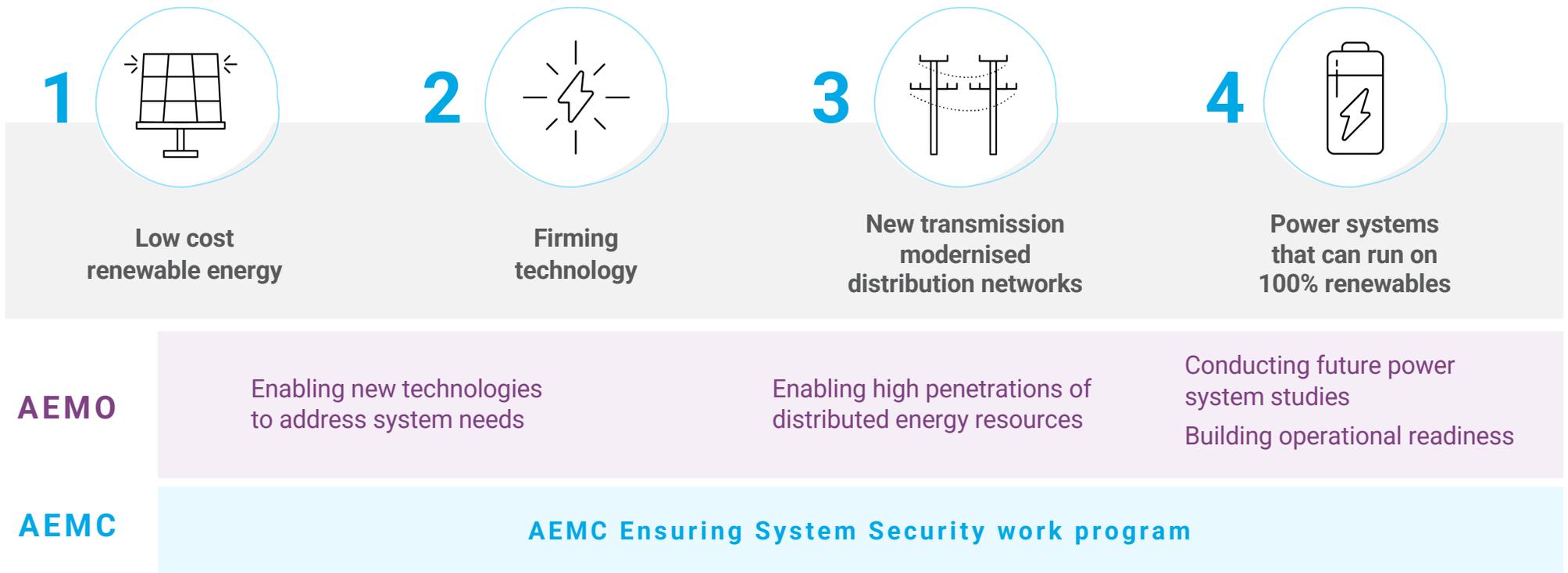
Our target is 100% smart meter coverage in the NEM by 2030

Achieving full uptake will help to unlock greater benefits in the short and long-term, for all households and small businesses, enabling:

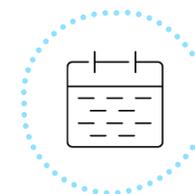
- **Tracking of energy use and savings** – customers can access cheaper energy at the right times of the day.
- **Flexible pricing** – customers can choose an electricity plan that best suits their lifestyle.
- **Remote meter readings** – no more estimated bills and manual meter readings.
- **Faster detection of faults and power outages** – smart meters can help distribution businesses quickly identify if a customer's power is out and those alerts can speed up power reconnection.

Engineering challenges on the road to 100% renewables

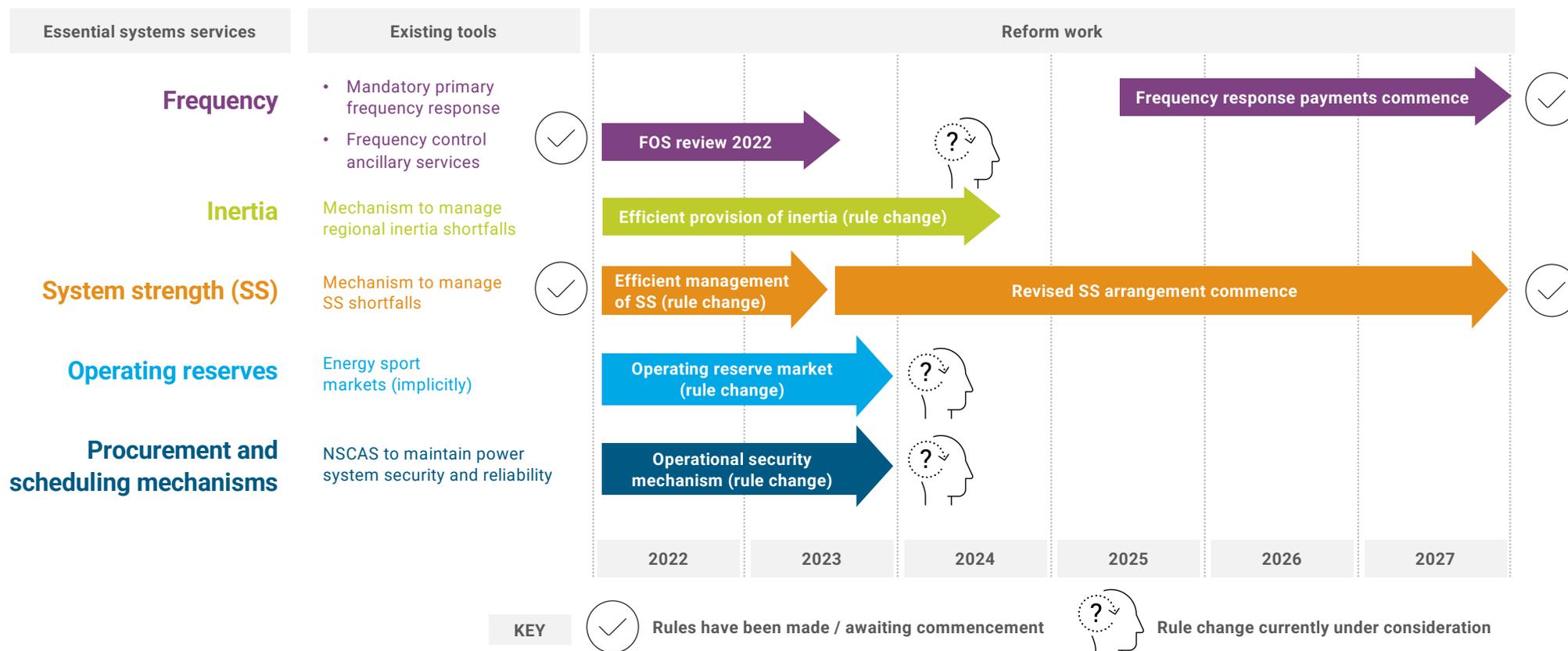
Our energy future will be built on four key pillars. This drives AEMO's priorities, and the AEMC's system security work program

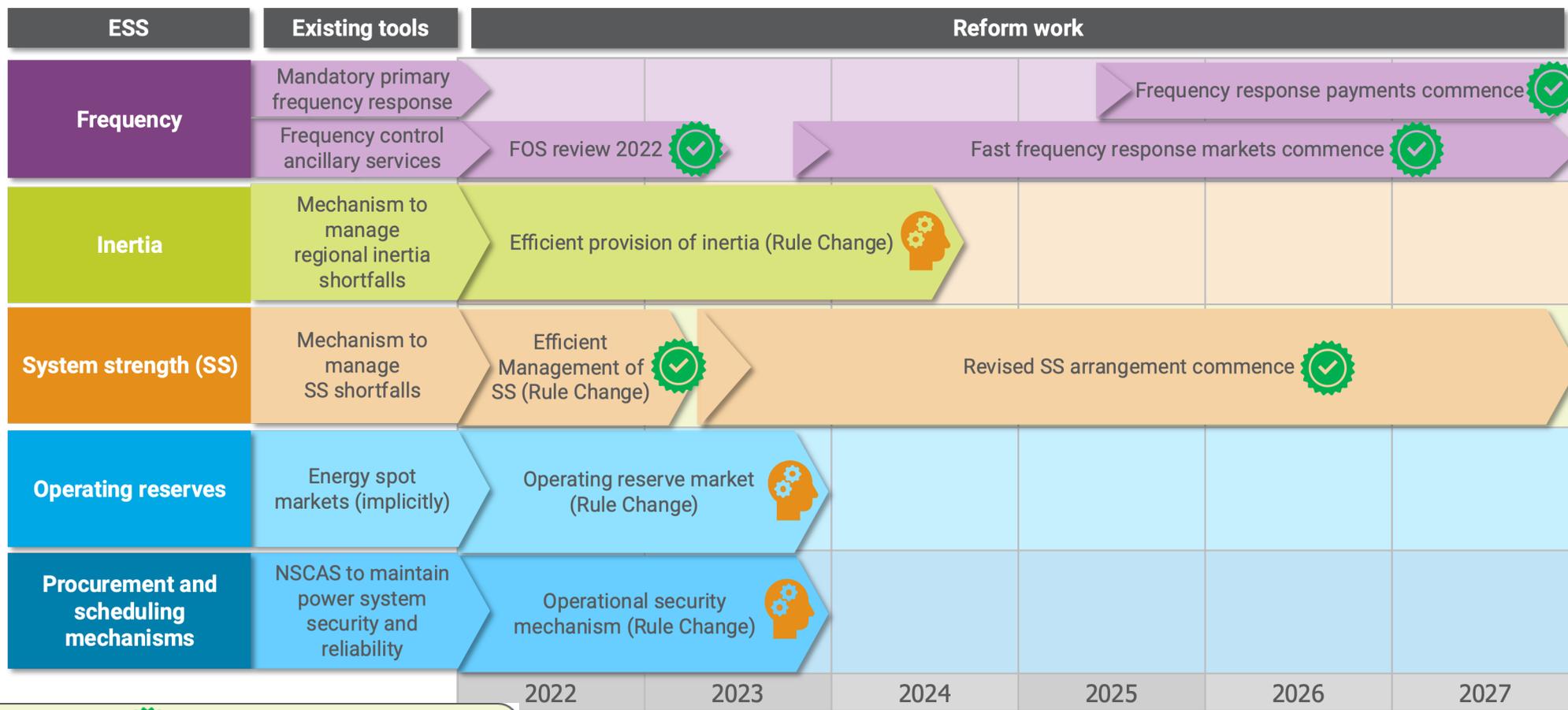


Essential systems services work program



Addressing the challenges





LEGEND for the status of reform initiatives

-  Rules have been made / awaiting commencement
-  Rule change currently under consideration

Ensuring System Security (ESS) on the road to 100% renewables

Engineering leads market design. In considering system security through the transition, the AEMC is working on key areas of reform in the NEM

1



**Operational
Security Mechanism**

2



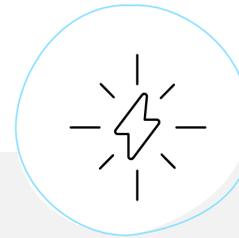
**Frequency
Operating Standards**

3



**Inertia
Rule Change**

4



**Operating
Reserves**

AEMC

AEMC Ensuring System Security work program

Retail price regulation

1

The DMO and VDO were introduced in July 2019 (NSW, SA, SEQLD, VIC) to cap prices for standing offer customers. There are no default offers or retail price caps in gas.

2

Calculated annually by the AER (DMO) and ESC (VDO). DMO prices in FY 24 versus FY23 increased between 21% and 24% following large increases in wholesale costs.

3

There are issues to consider with price caps. Such as:

- Price compression (retailers increase their lowest offers)
- Increased risk to smaller non-integrated retailers. Issues and Impacts. Annual cap may need to change in volatile years
- Lower levels of innovation
- Higher barriers to entry, decreased competition through changed consumer behaviour.

4

A comparison rate and good data / transparency may be a better long-term alternative.

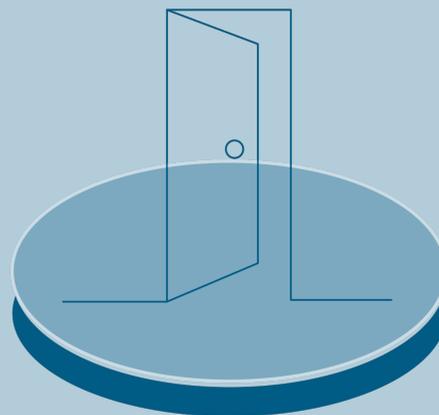
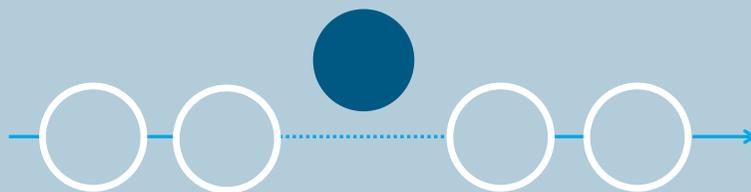
More information



<https://www.aemc.gov.au/market-reviews-advice/advice-coag-energy-council-default-offer>

ACCESS REFORM

Access reform will send signals to investors about the best places to locate generation, storage and dispatchable assets, so we only build the transmission we need. The proposed solution has come from industry.

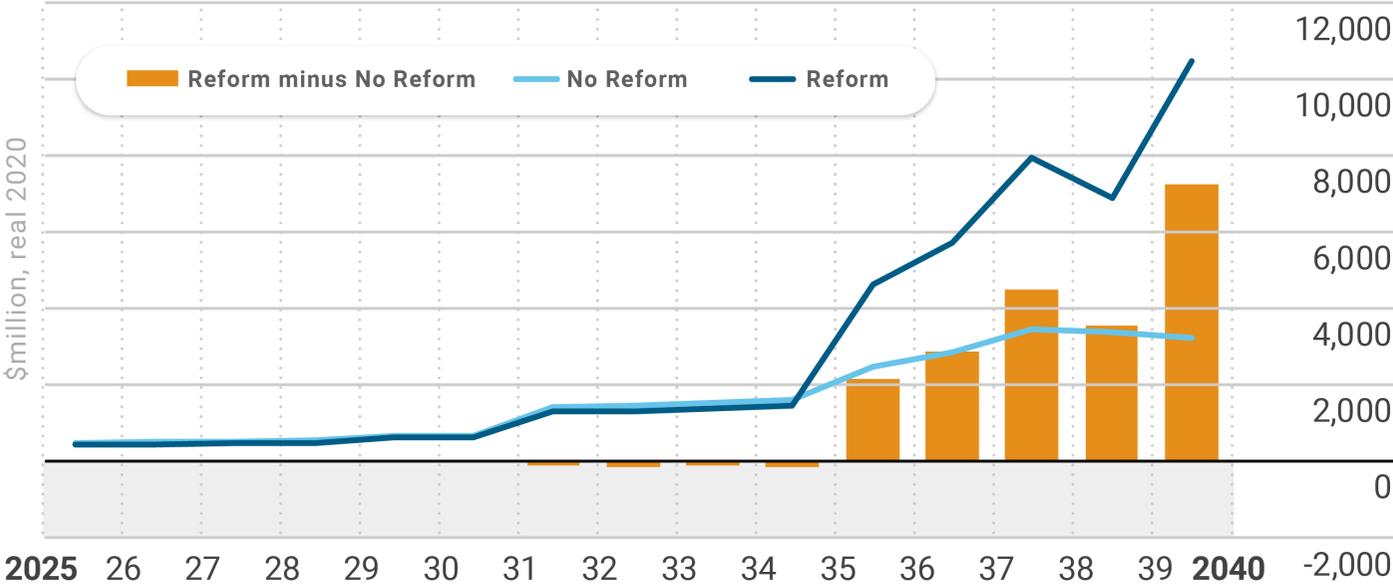


- indicates the best way to bid into the market
- incentivises providers of congestion relief
- avoids wasting solar and wind investments
- minimises unnecessary transmission
- makes greater use of existing renewables resources
- strengthens incentives for investors to participate in REZ schemes
- ensures a mix of assets within a REZ
- provides additional revenue streams for storage

Access reform is good for congestion

CRM trading reduces system costs

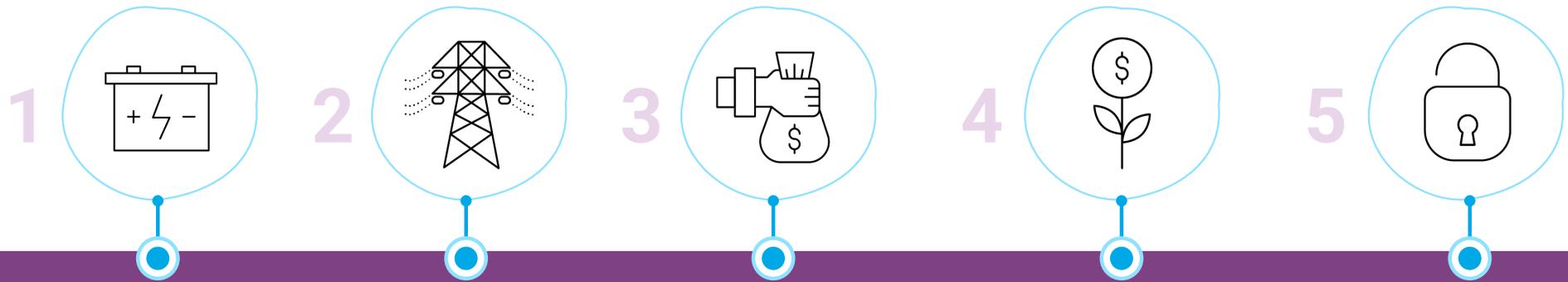
Congestion rent increases at the end of the horizon in the reform world (\$million, real 2020)



Source: NERA calculation on PLEXOS results

Access reform is good for storage

Unlocking a key component of the energy transition



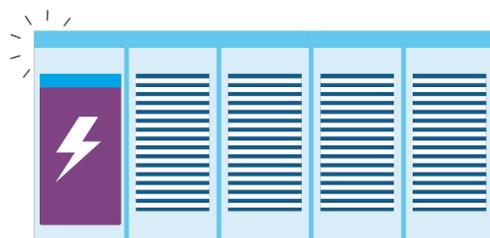
1 Storage and flexible loads will become a more critical part of our dispatchable generation mix and demand response.

2 Transmission access reform is designed to value and reward these assets for providing congestion relief services that have benefits to the whole system.

3 If we don't have a market that values these services, we will need to subsidise their investment.

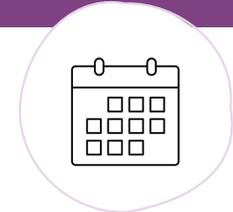
4 The CRM design creates a new market to achieve a more cost-efficient dispatch. The efficiency gain is shared between CRM participants and enables the efficient operation of the network's significant transmission investments.

5 The CRM unlocks a new market for congestion relief and recognises the value that storage and scheduled load can provide to the energy system.



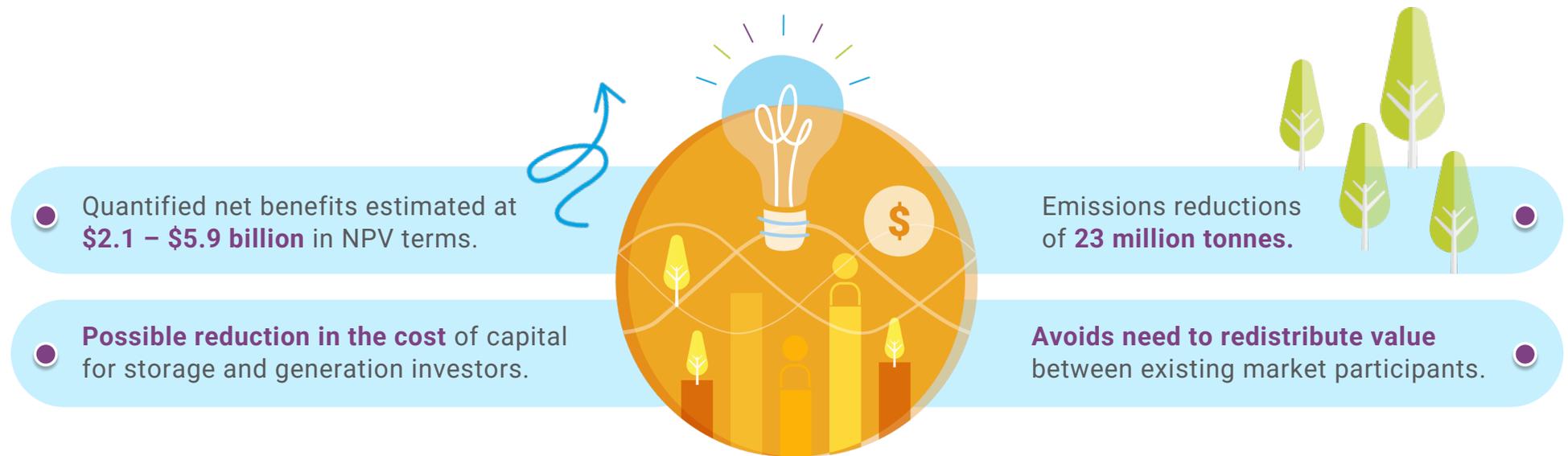
30x

Increase in storage capacity – 2022 v 2050 in the ISP.



Key findings of cost benefit analysis

Preferred model: priority access and a congestion relief market



BENEFITS COME FROM DISPATCH EFFICIENCY GAINS UNDER THE CRM AND CMM, AND INVESTMENT EFFICIENCY GAINS UNDER THE CONGESTION FEES OR PRIORITY ACCESS MODELS.

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