



AEMO Seminar Series

Quarterly Energy Dynamics report:

Q3 2025



Melbourne
Energy
Institute



THE UNIVERSITY OF
MELBOURNE

Presenter

Kerry Galloway

Manager - Market Insights

Australian Energy Market Operator (AEMO)

Moderator

Dr Dominic Davis

Lecturer, Power Generation & Transport

Dept of Mechanical Engineering

University of Melbourne

Agenda

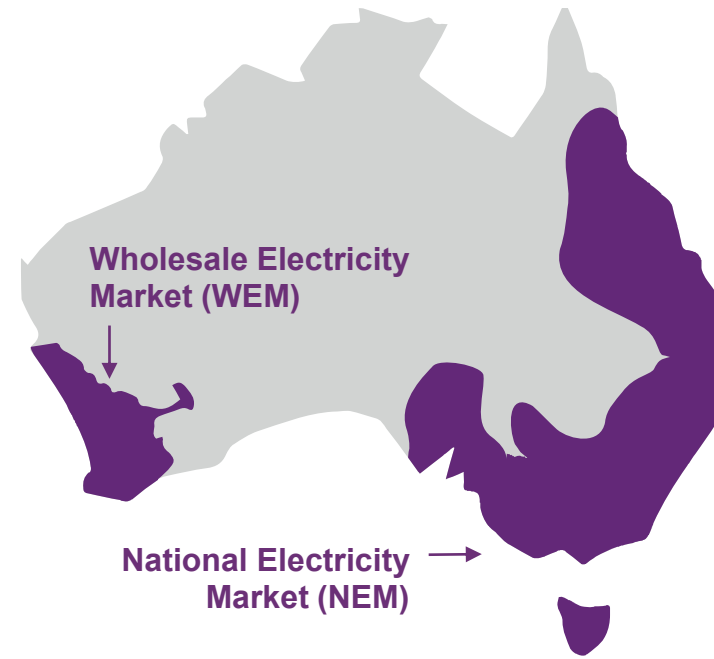
1. National Electricity Market (NEM)

- Demand and price
- Generation
- Interconnector flows
- FCAS and FPP

2. East coast gas



Electricity



Gas



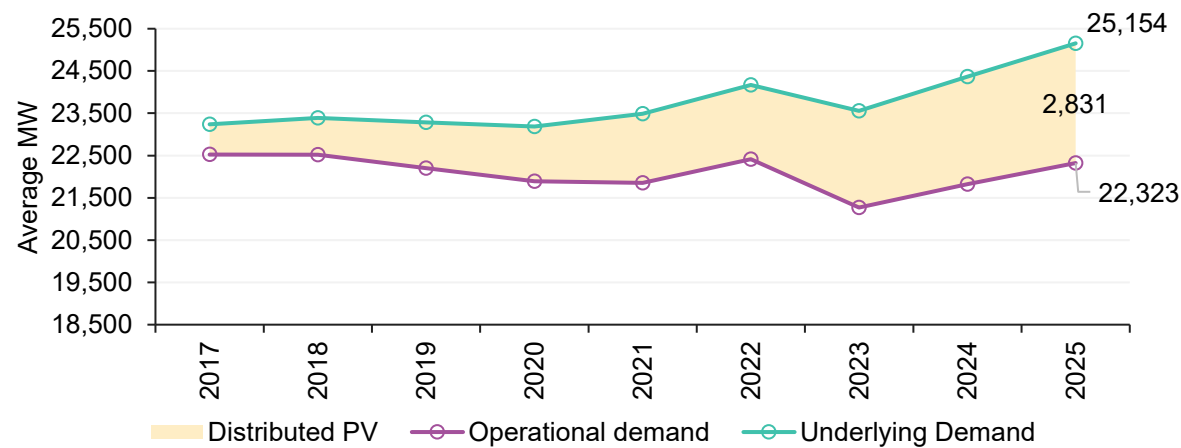
NEM Dynamics



Underlying demand grew to a new Q3 record, partially offset by record Q3 distributed photovoltaic (PV) output

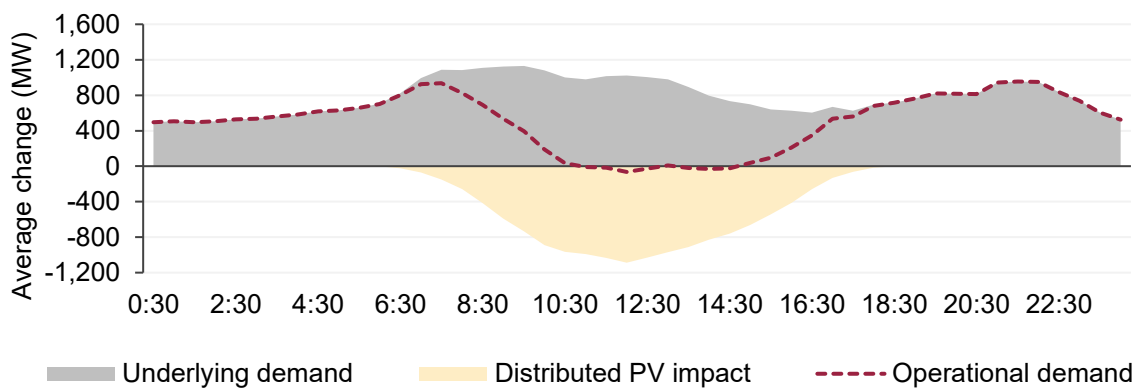
Underlying demand reached new Q3 high, partially offset by distributed PV output

NEM average underlying and operational demand – Q3s



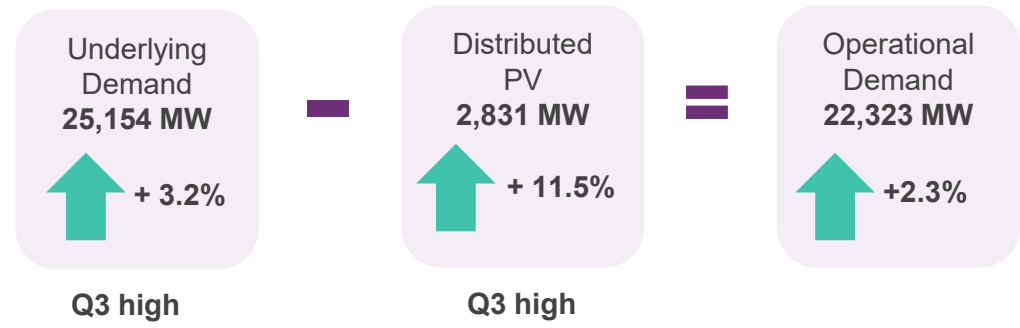
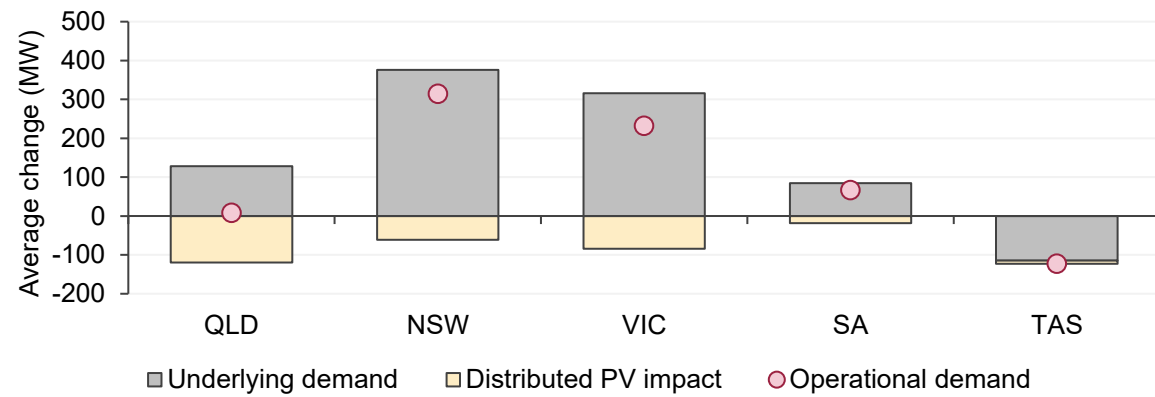
Growth in operational demand outside daytime hours

Changes in NEM average operational demand by time of day – Q3 2025 vs Q3 2024



Operational demand increased year-on-year in all mainland regions

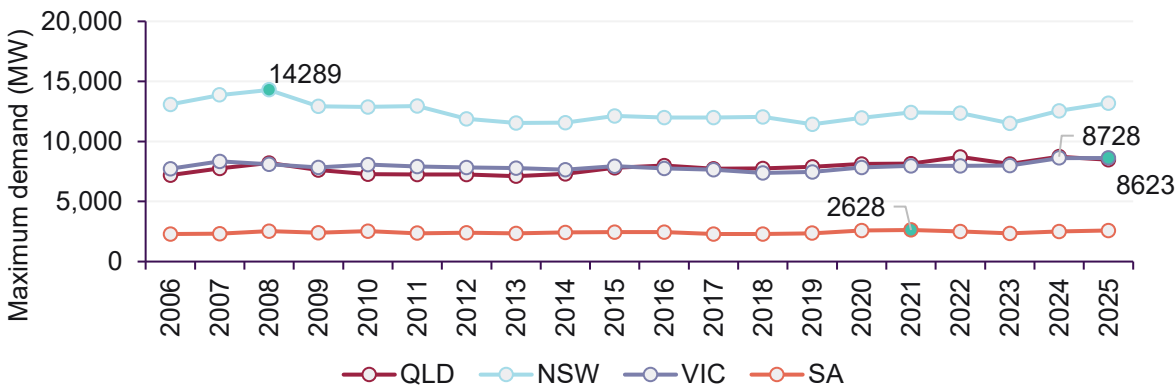
Changes in average demand components by region – Q3 2025 vs Q3 2024



Growing underlying demand and distributed PV output widen demand swings, pushing minimums lower and maximums higher

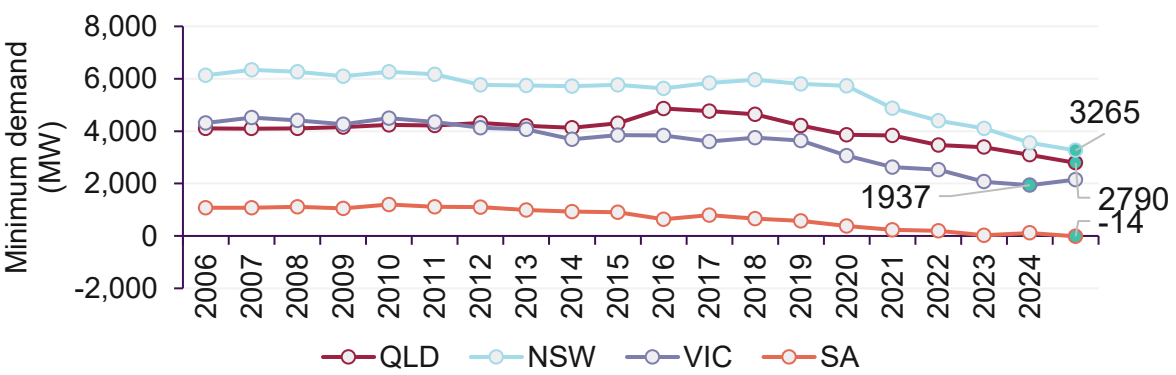
❑ New Q3 maximum operational demand record in Victoria

Maximum operational demand for mainland regions – Q3s



❑ New South Wales, Queensland and South Australia recorded new lows for Q3 minimum operational demand

Minimum operational demand for mainland regions – Q3s



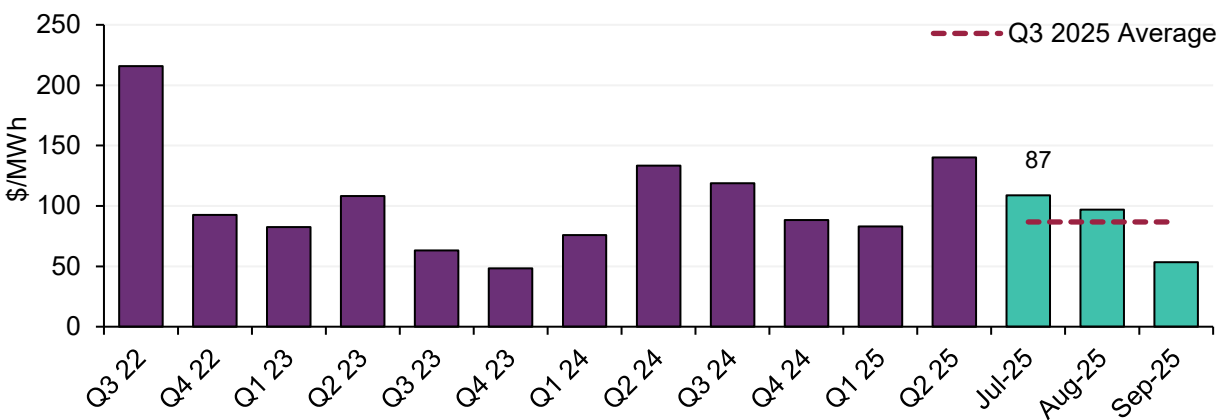
- Rising underlying demand lifted operational demand maximums, while continued distributed PV growth offset this increase, pushing minimums to new lows
- Victoria set a **new Q3 high** for maximum operational demand, reaching 8,623 MW on 25 July 2025
- Several NEM regions also recorded **new Q3 lows** for minimum operational demand:

Region	New Q3 minimum demand record	Change
NEM	10,175 (14 September 2025)	▼ 1,218 MW (11%)
QLD	2,790 MW (31 August 2025) <i>*Record low for any quarter</i>	▼ 301 MW (10%)
NSW	3,265 MW (21 September 2025)	▼ 290 MW (8%)
SA	-14 MW (14 September 2025)	▼ 35 MW

NEM-wide wholesale electricity prices was down 27% from Q3 2024 and 38% from Q2 2025

Significant drop in NEM average wholesale prices

NEM average wholesale electricity spot prices – quarterly since Q3 2022



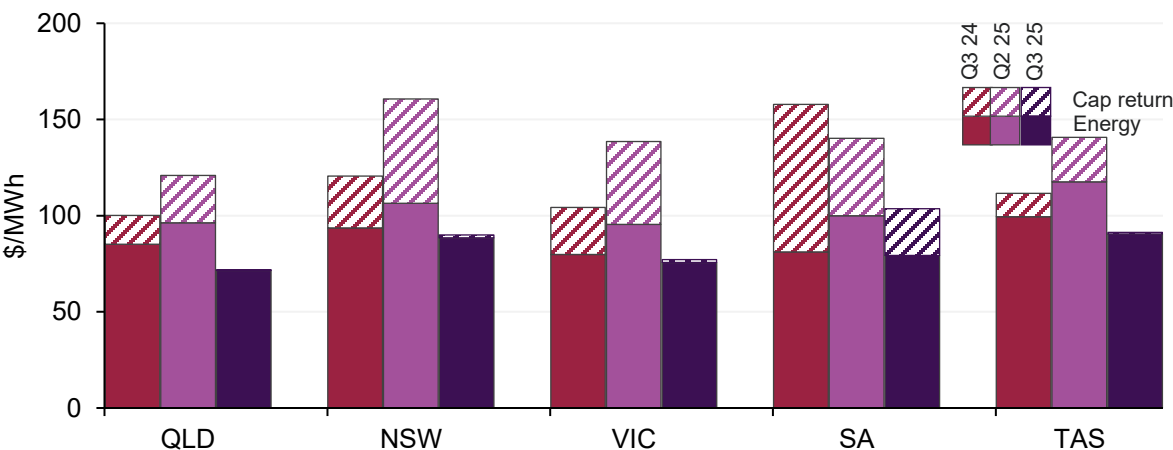
- **Lower price volatility** - cap returns across the NEM fell sharply from \$31/MWh in Q3 2024 to just \$6/MWh
- Fewer deep-wind lulls, higher net coal output during peak periods offset the rise in operational demand
- Increased battery output reduced the dispatch level of gas and hydro at the peak times on high demand days



- **Increased renewable energy output** – VRE output reached Q3 highs, offsetting the rise in operational demand
- Renewable share reached 42.7%, its highest Q3 level on record
- Energy component reduced by 8%

Significantly lower price volatility drove Q3 spot prices lower in all regions

Average wholesale electricity spot price by region – energy and cap return components

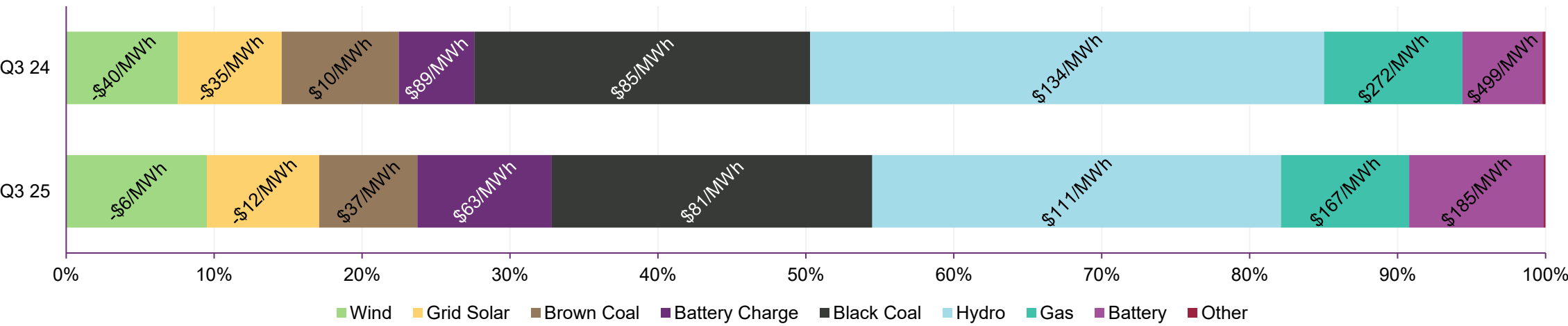


[\$/MWh]	Q3 2024	Q3 2025	Change in energy component	Change in cap return component
QLD	100	72	-14	-15
NSW	121	90	-5	-25
VIC	104	77	-4	-23
SA	158	104	-2	-52
TAS	112	91	-9	-11

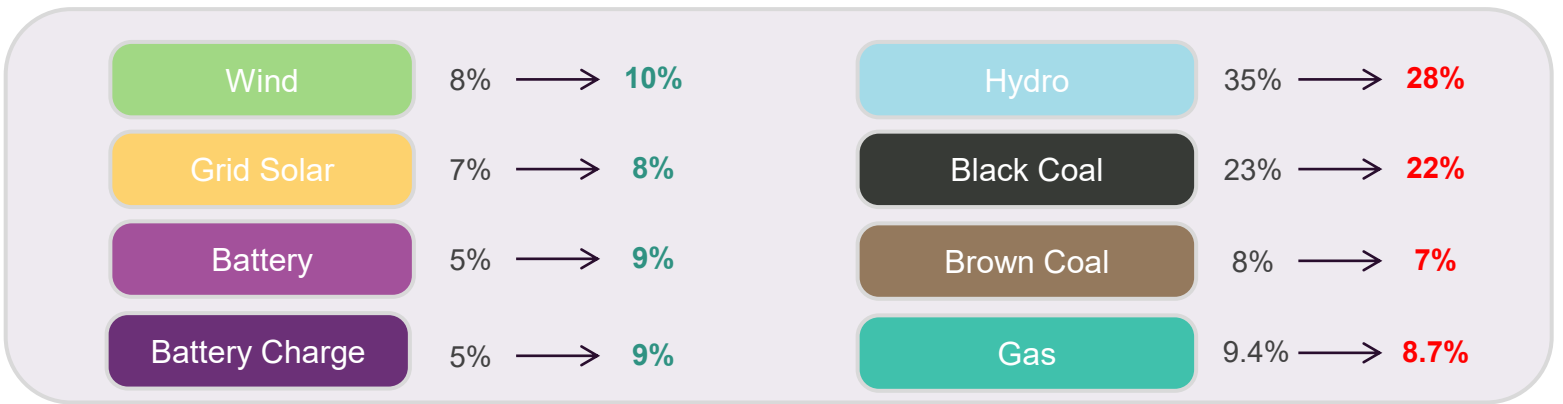
Wind, Grid Solar, Battery Discharge and Battery Charge increased price setting frequency

Wind, grid solar and brown coal saw year-on-year increases in prices set when marginal while other technologies saw reductions

NEM price-setting frequency and average price when price-setter by fuel type – Q3 2025 vs Q3 2024



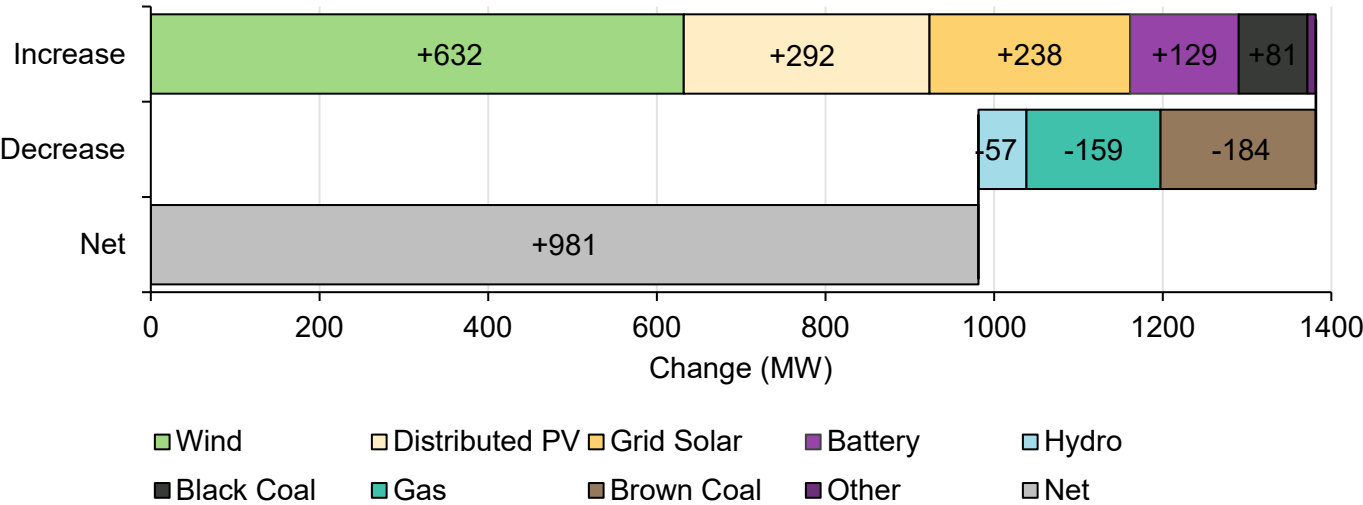
Change in NEM price-setting frequency



Record VRE output drove the renewable share to a Q3 high of 42.7%

Net supply rises with higher renewable output

Change in NEM supply by fuel type – Q3 2025 vs Q3 2024

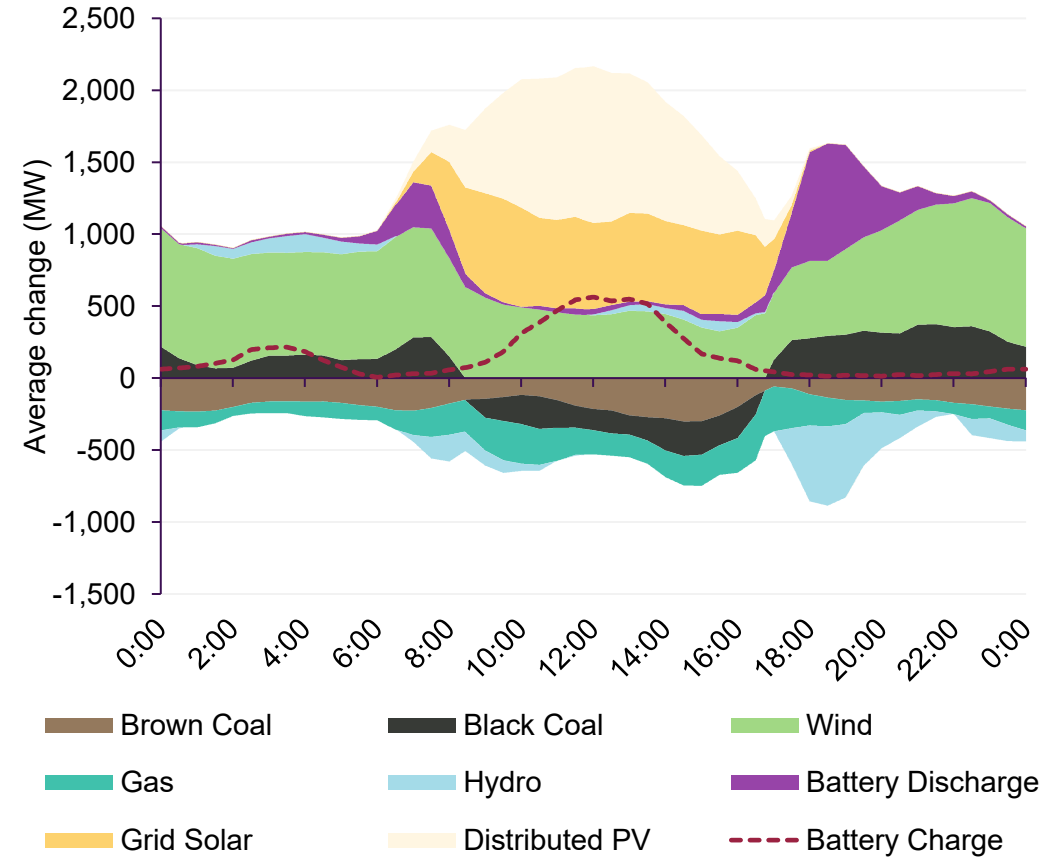


NEM supply mix contribution by fuel type

Quarter	Black coal	Brown coal	Gas	Liquid fuel	Distributed PV	Wind	Grid solar	Hydro	Biomass	Battery
Q3 2024	39.8%	14.9%	6.0%	0.01%	10.2%	16.3%	5.9%	6.4%	0.23%	0.3%
Q3 2025	38.6%	13.6%	5.2%	0.01%	10.9%	18.1%	6.6%	6.0%	0.26%	0.8%
Change	-1.2%	-1.3%	-0.8%	-0.0%	0.7%	1.8%	0.7%	-0.5%	0.03%	0.5%

Renewables and battery discharge support demand across the day

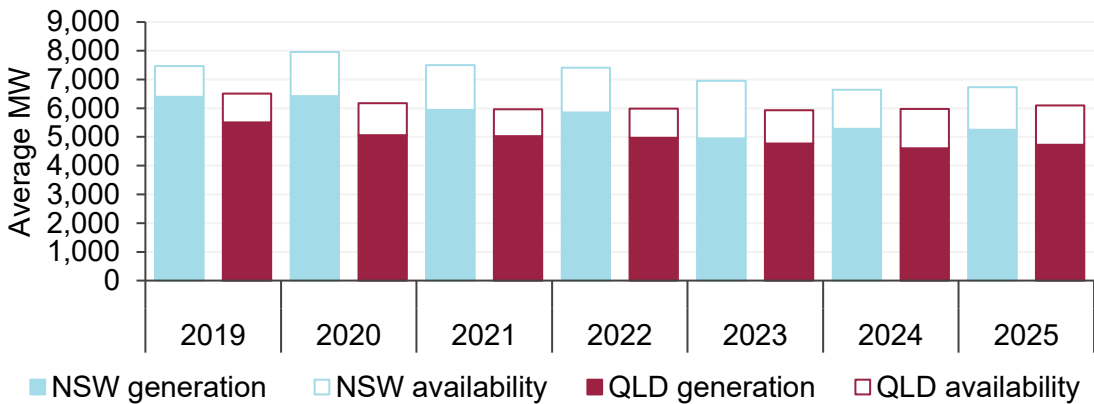
NEM change in fuel mix by time of day – Q3 2025 vs Q3 2024



Lower brown coal output offset black coal increases, reducing overall coal-fired generation

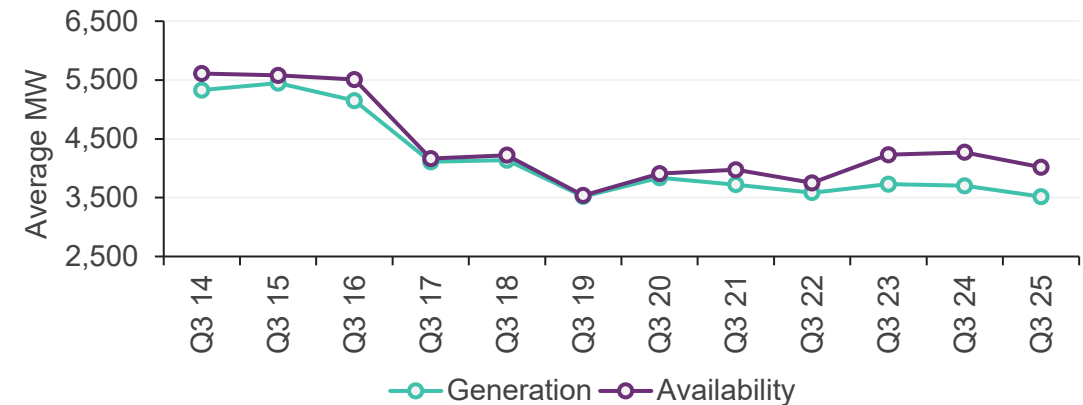
█ Increase in NEM black coal-fired availability and output

Quarterly average black coal-fired generation and availability by region – Q3s



█ Brown coal-fired generation decreased

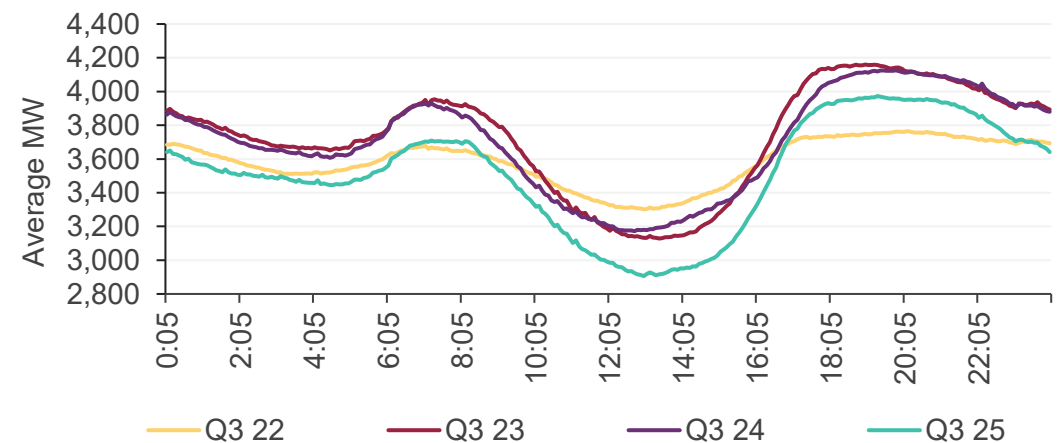
Quarterly average brown coal-fired generation and availability in Victoria (including decommissioned units) – Q3s



	NSW	QLD	VIC
Change in intraday swing (MW)	▲ 356 MW	▲ 97 MW	▲ 114 MW
Minimum generation as a share of average availability (%)	47%	60%	72%

█ Brown coal-fired output decreased across the day

Brown coal-fired output by time of day – Q3s

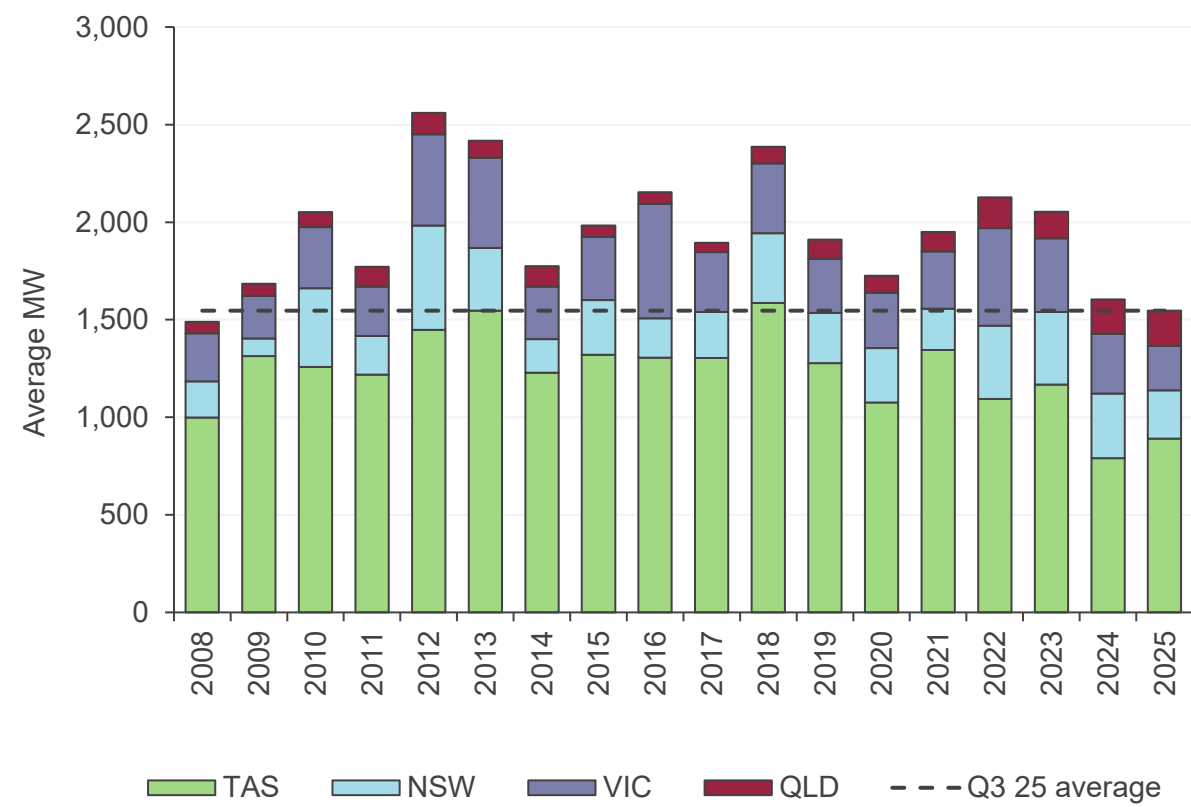


Gas-fired generation fell in most regions alongside lower hydro output

Gas-fired generation decreased in all NEM regions except New South Wales
Average gas-fired generation by region – Q3s



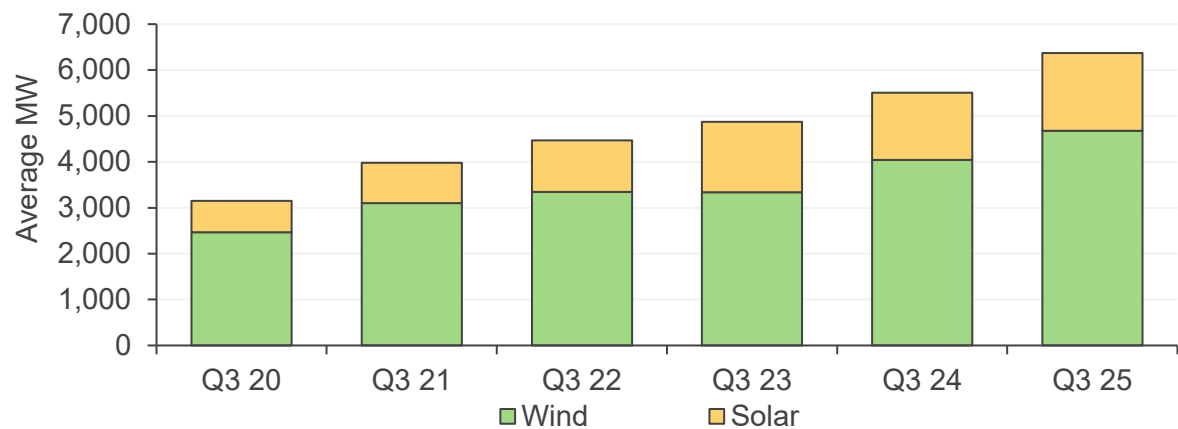
Hydro generation reached lowest Q3 level since 2008
Average hydro generation by region – Q3s



Grid-scale VRE and wind generation reached record highs

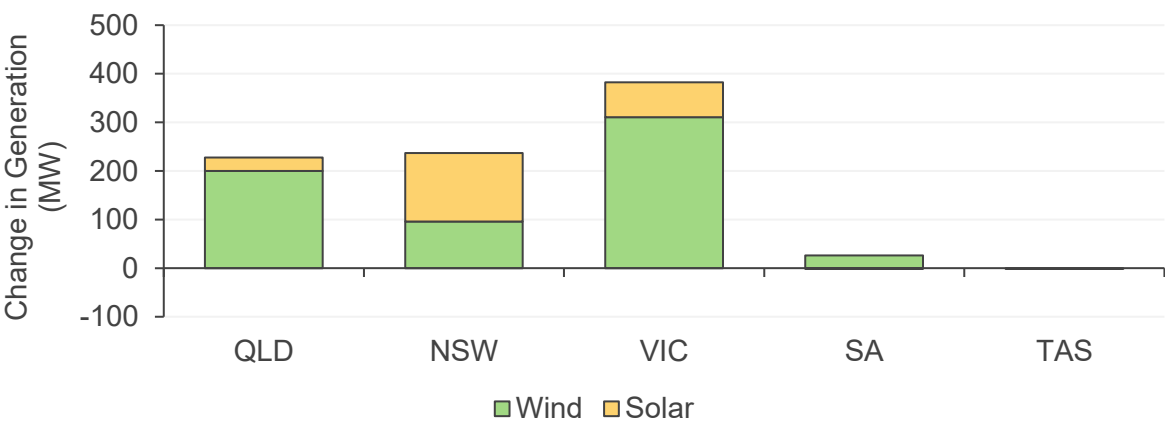
VRE output growth continues

Average quarterly VRE generation by fuel type – Q3s



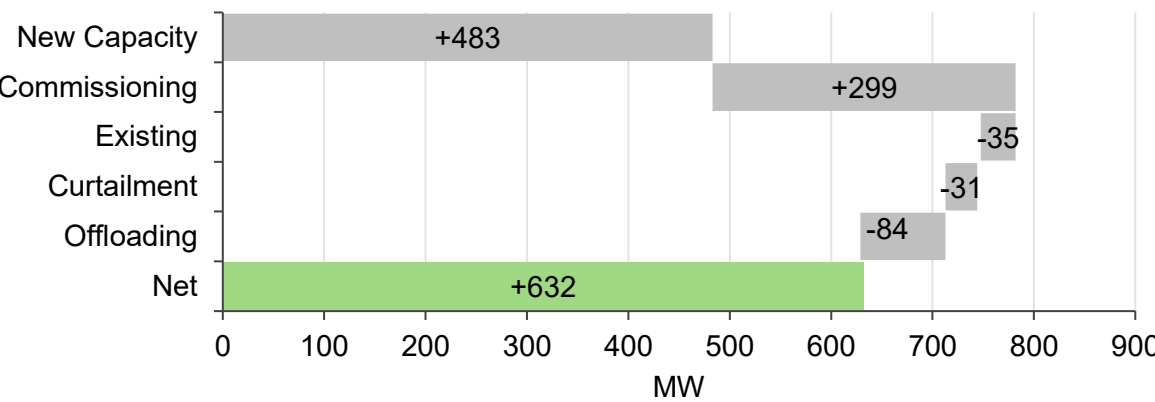
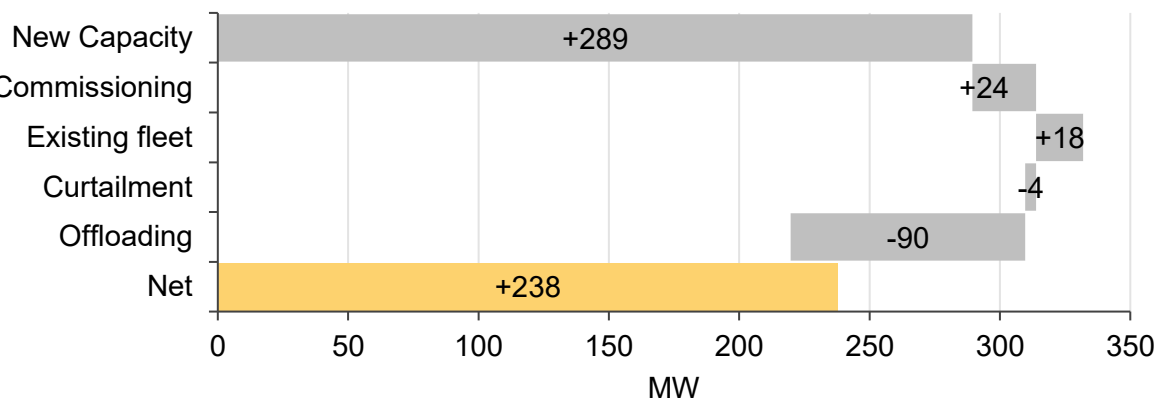
Queensland, New South Wales and Victoria drive renewable increases

Average MW change in output Q3 2025 vs Q3 2024



Increased availability from new and commissioning solar and wind facilities

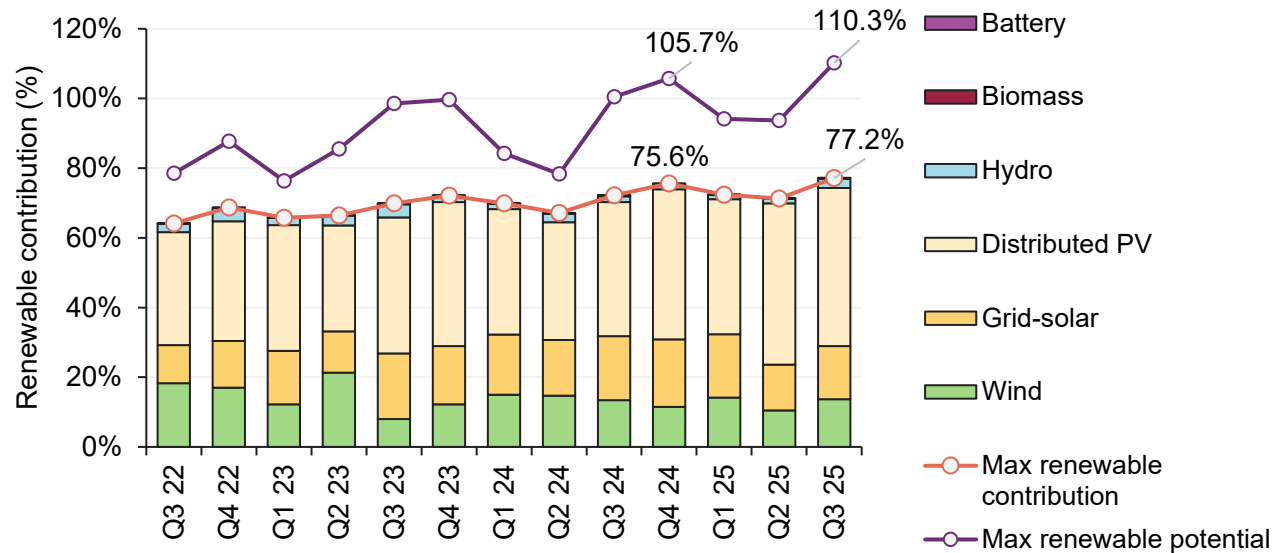
Changes in availability and generation – Q3 2025 vs Q3 2024



Peak renewable contribution and potential renewable reach new highs

Peak and potential renewable contribution reached record highs

Percentage of NEM supply from renewable energy sources at time of peak renewable contribution



Breakdown of supply at peak:



Distributed PV - 45.4%



Grid-scale solar - 15.2%



Wind - 13.7%



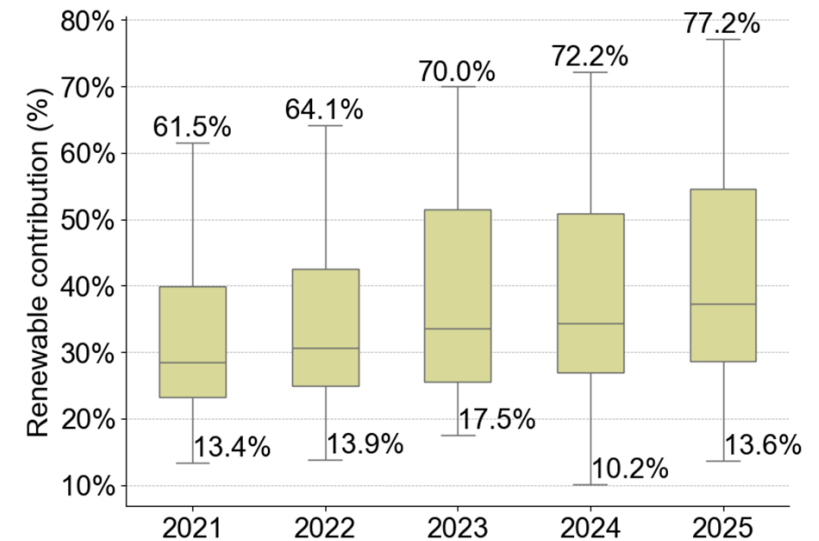
Hydro - 2.7%



Biomass - 0.2%

Higher maximum and minimum renewable contribution

Range of NEM supply share from renewable energy sources – Q3s

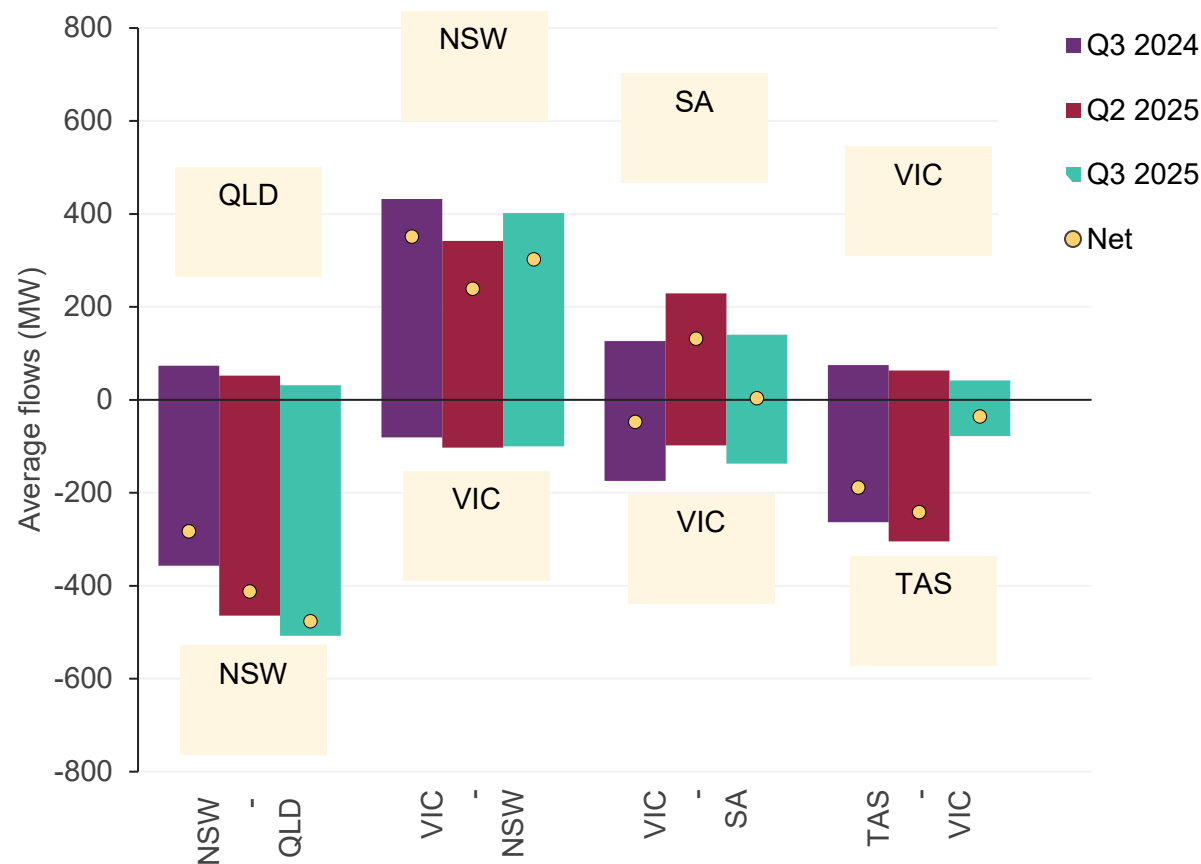


Q & A

Significantly reduced Basslink flows

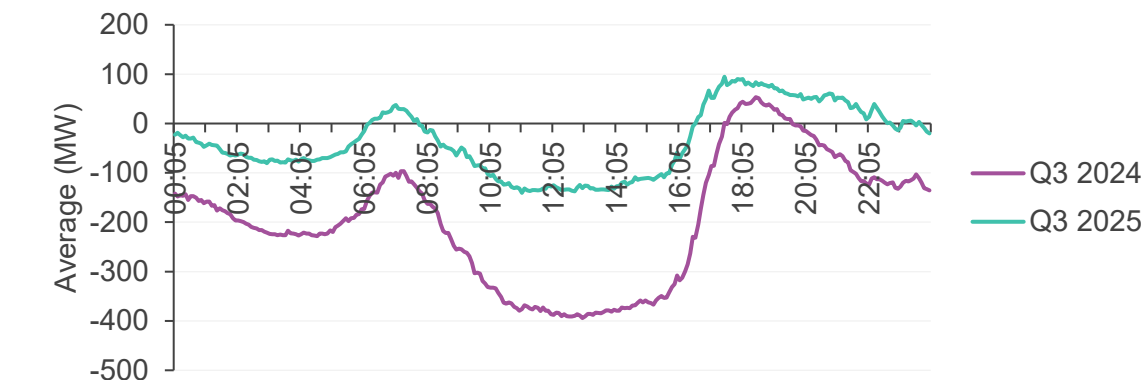
Decreased flows between Victoria and Tasmania

Quarterly inter-regional transfers



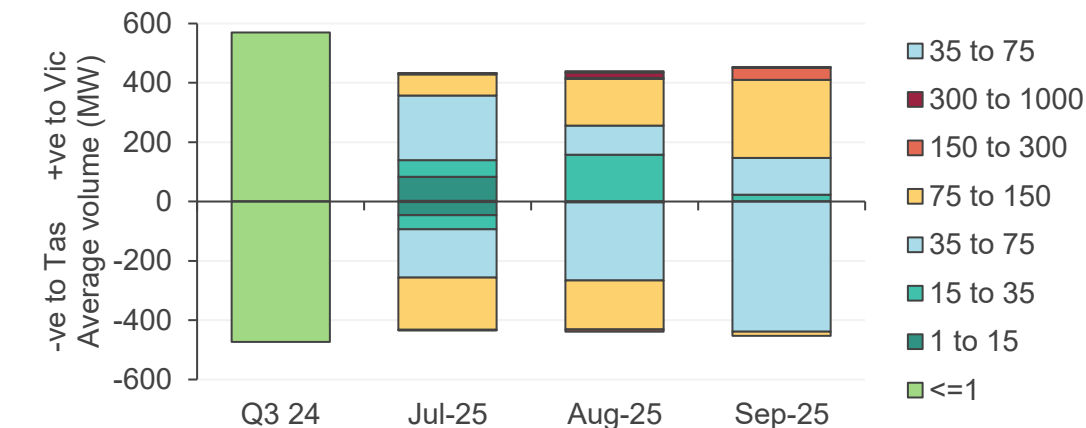
Average southward flows on Basslink reduced across all hours of the day

Average Basslink flow by time of day



Basslink capacity offered at higher prices than during previous quarters

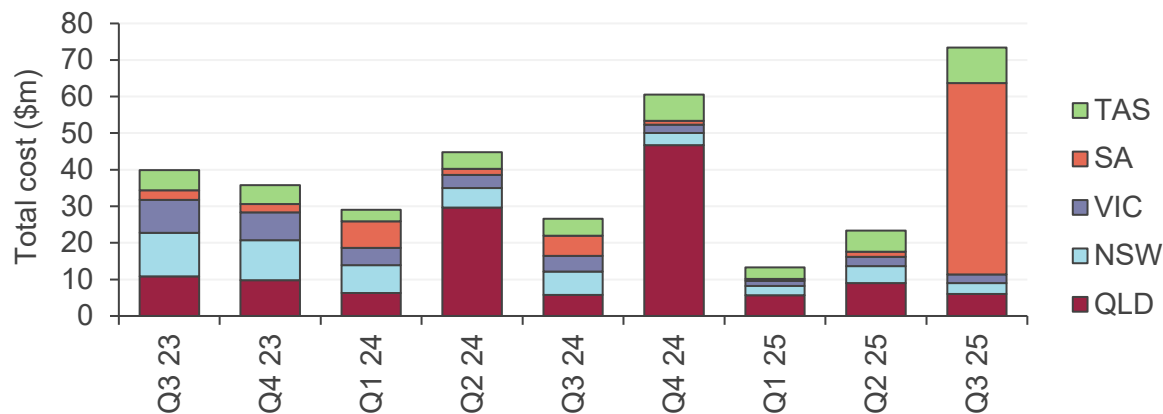
Basslink MNSP offers, average transfers capacity (MW), offered by price range (\$/MWh)



FCAS cost increases driven by contingency lower 1-second service in South Australia

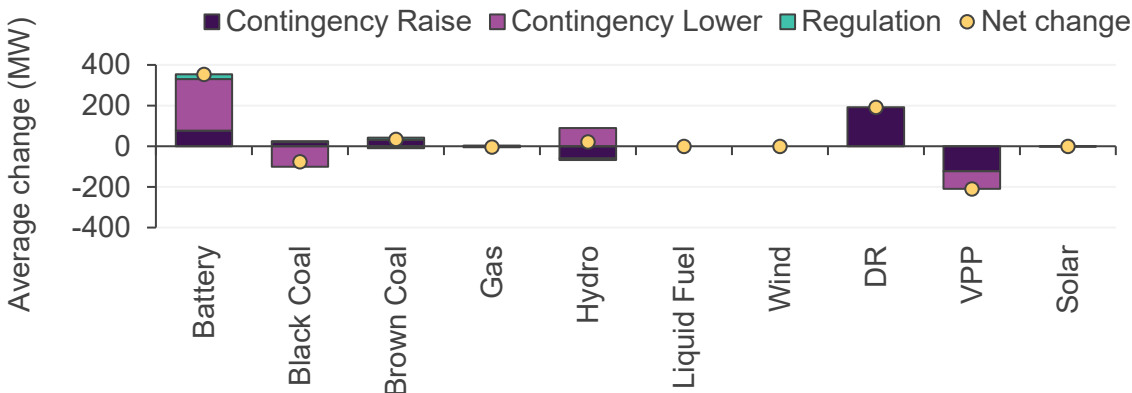
Large increase in FCAS costs in South Australia

Quarterly FCAS costs per region



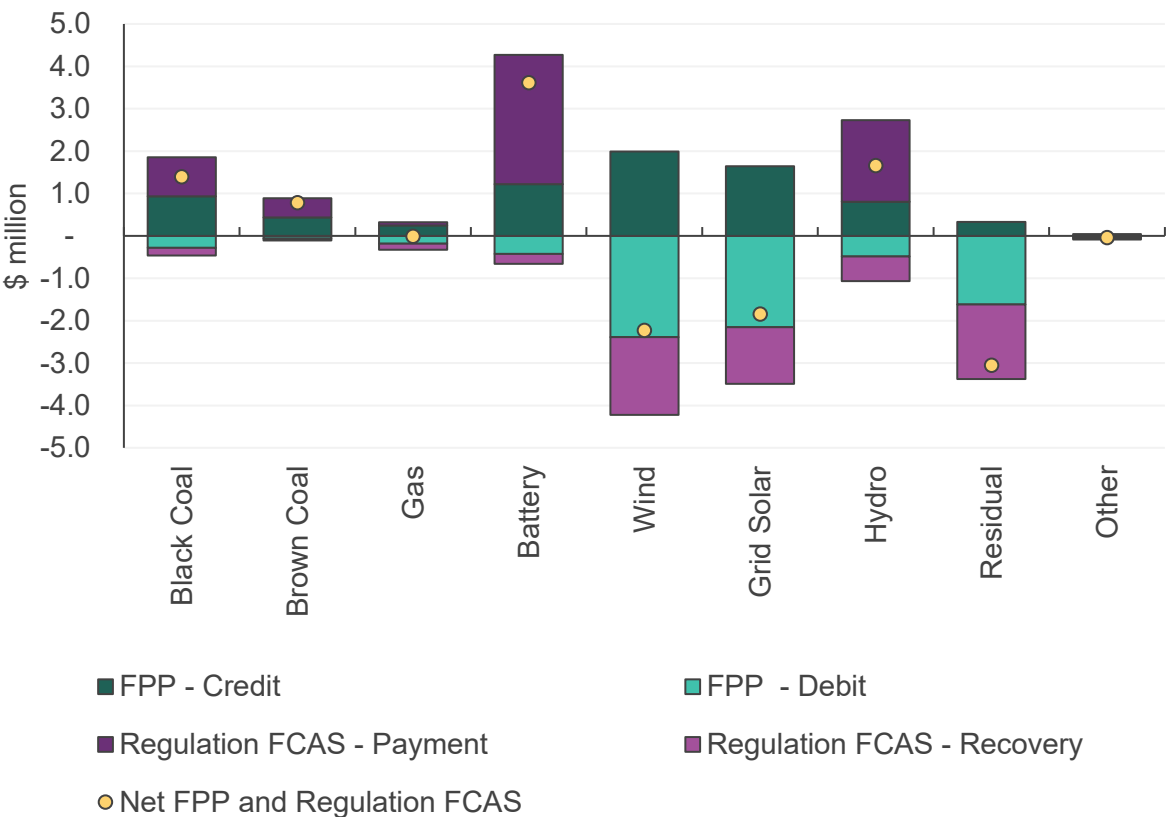
Increased enablement for batteries and demand response

Change in FCAS enablement by technology – Q3 2025 vs Q3 2024



Batteries received highest share of FPP and FCAS net settlements

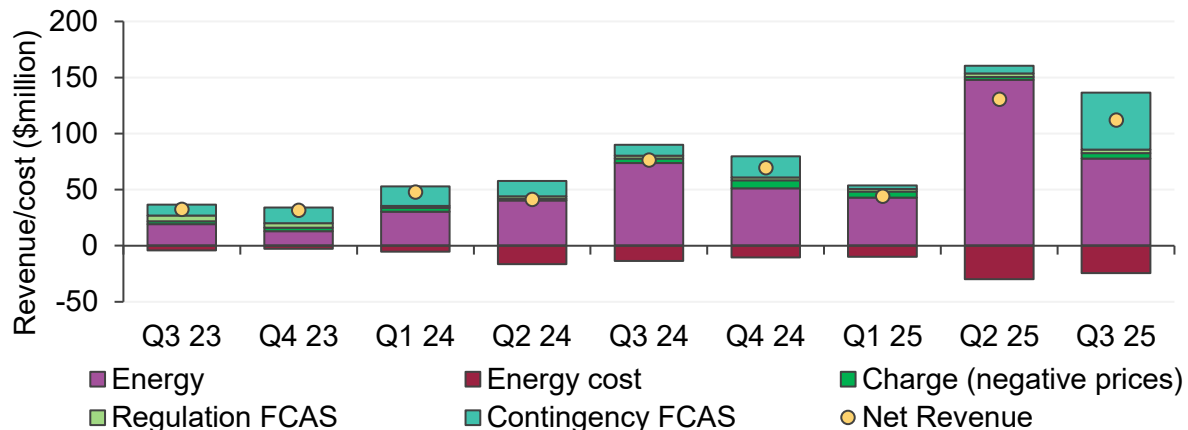
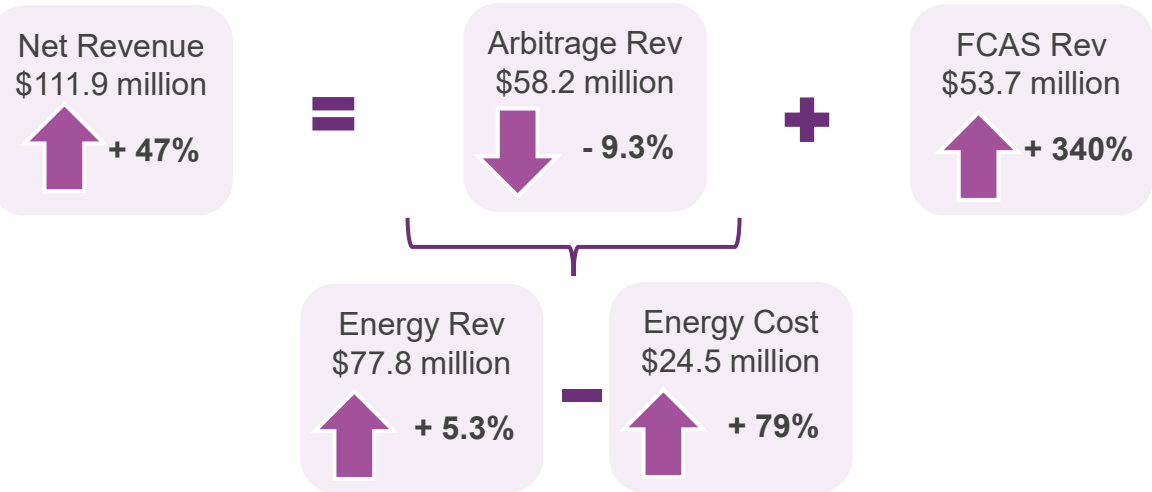
Sum of Frequency Performance Payment (FPP) and regulation FCAS recovery and payments by fuel type – Q3 2025



Higher FCAS revenue lifted net battery revenue despite lower price spread and volatility

Net battery revenue increased driven by higher FCAS revenue

Quarterly net revenue from NEM battery systems by revenue stream



2,936 MW / 6,482 MWh

of battery energy storage systems entered the NEM between the end of Q3 2024 and Q3 2025

Decrease in NEM-wide battery price spread with lower price volatility

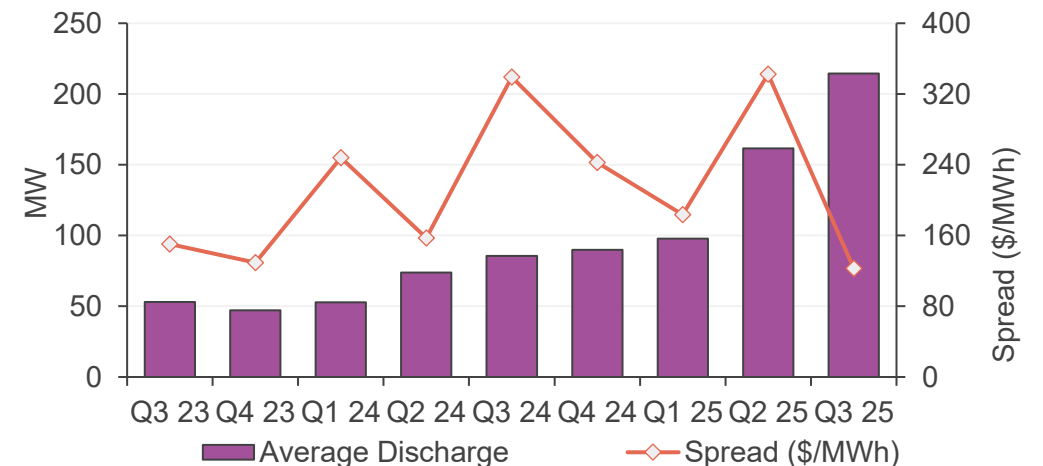
Average quarterly battery discharge (MW) and price spread (\$/MWh)

Battery Discharge
215 MW

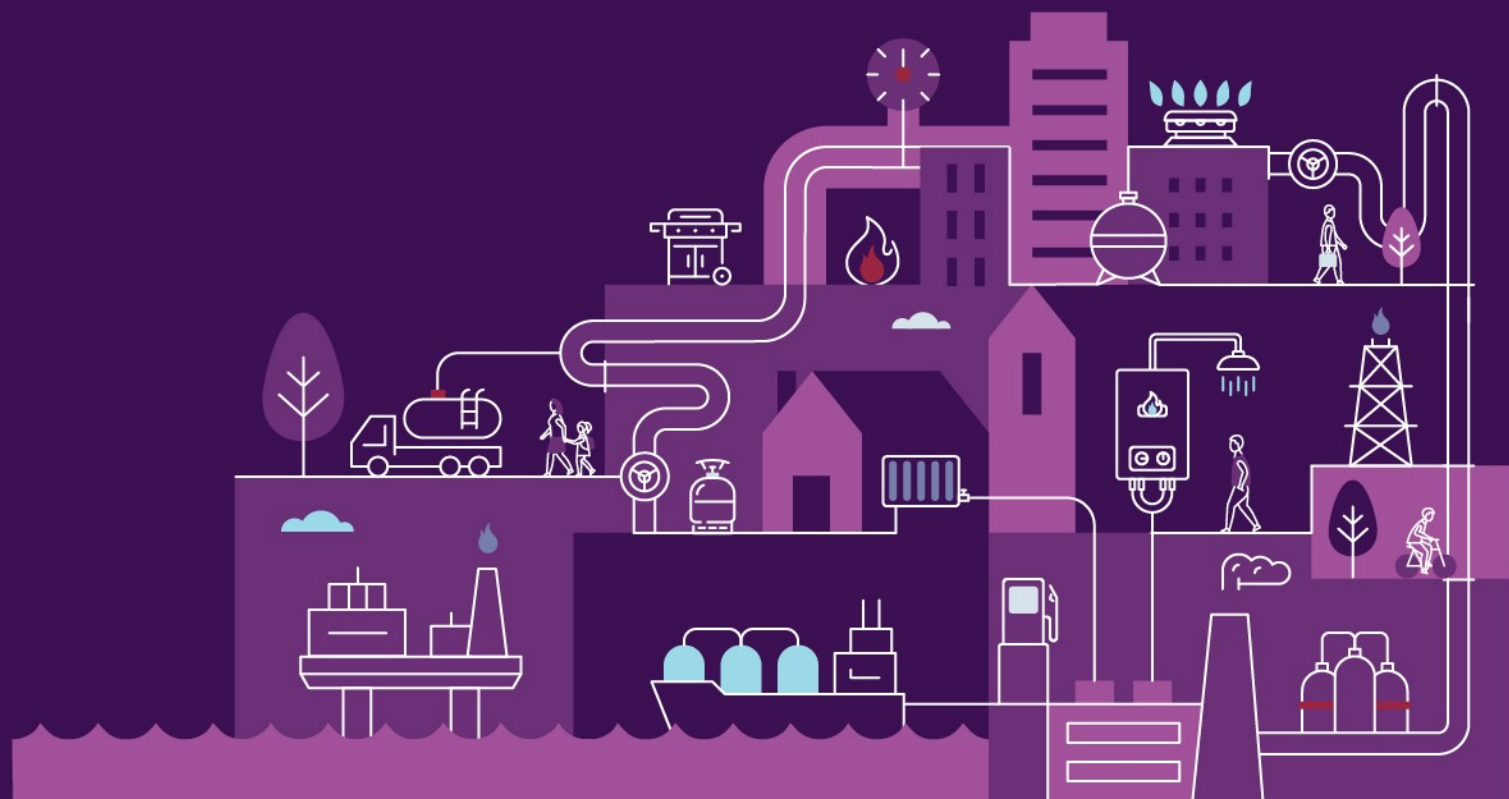
+ 150%

Price Spread
\$123/MWh

- 64%



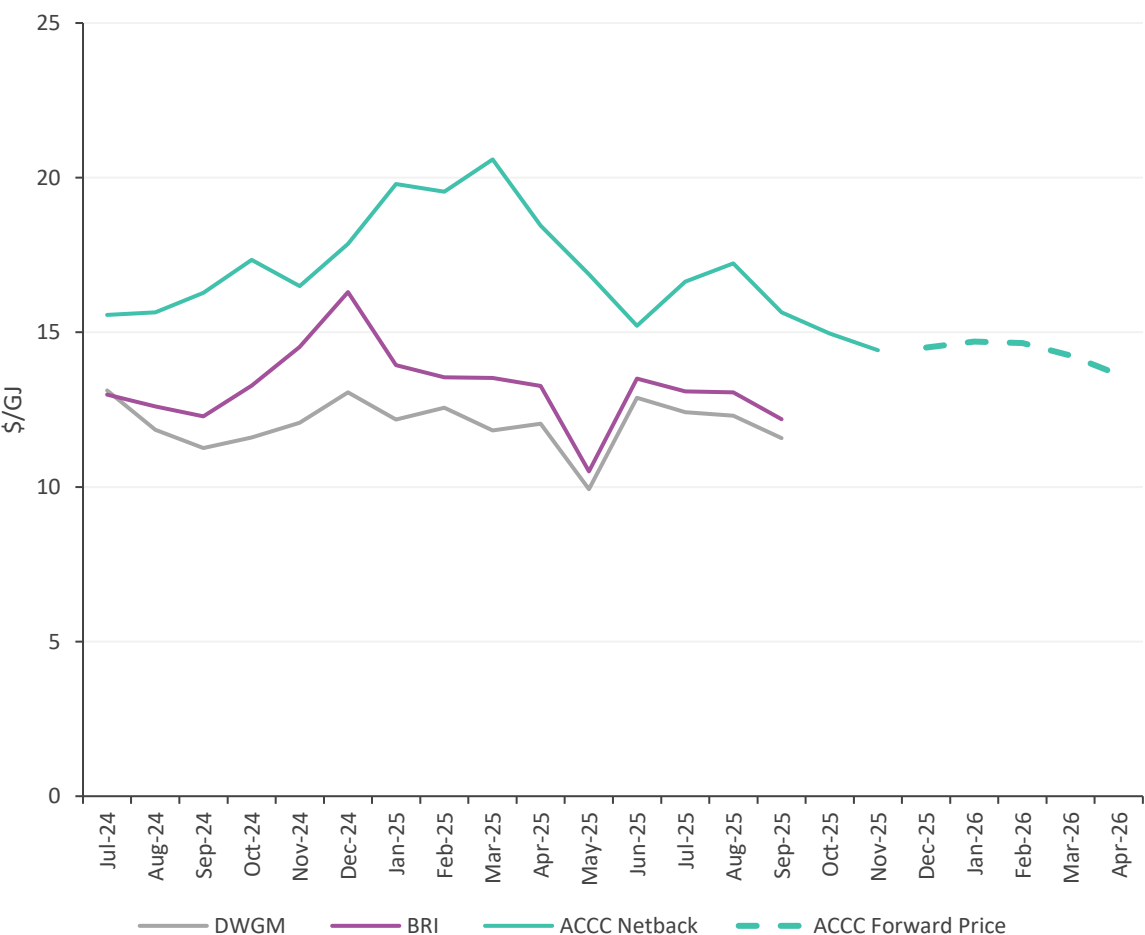
Gas market dynamics



East coast gas prices and demand

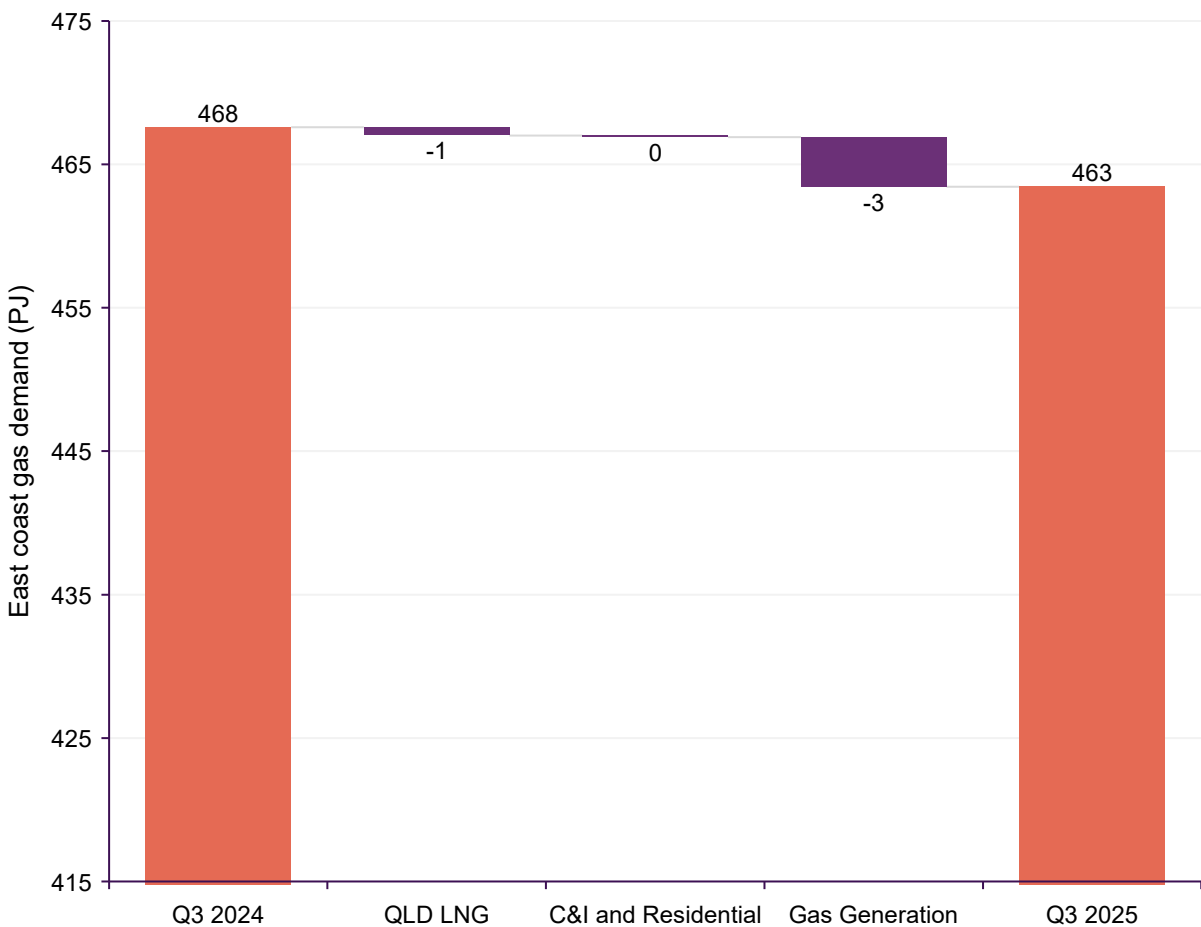
Domestic gas prices slightly higher than Q3 2024 in some AEMO markets

DWGM and Brisbane average price compared to ACCC LNG Netback price



Slightly lower gas demand across all sectors

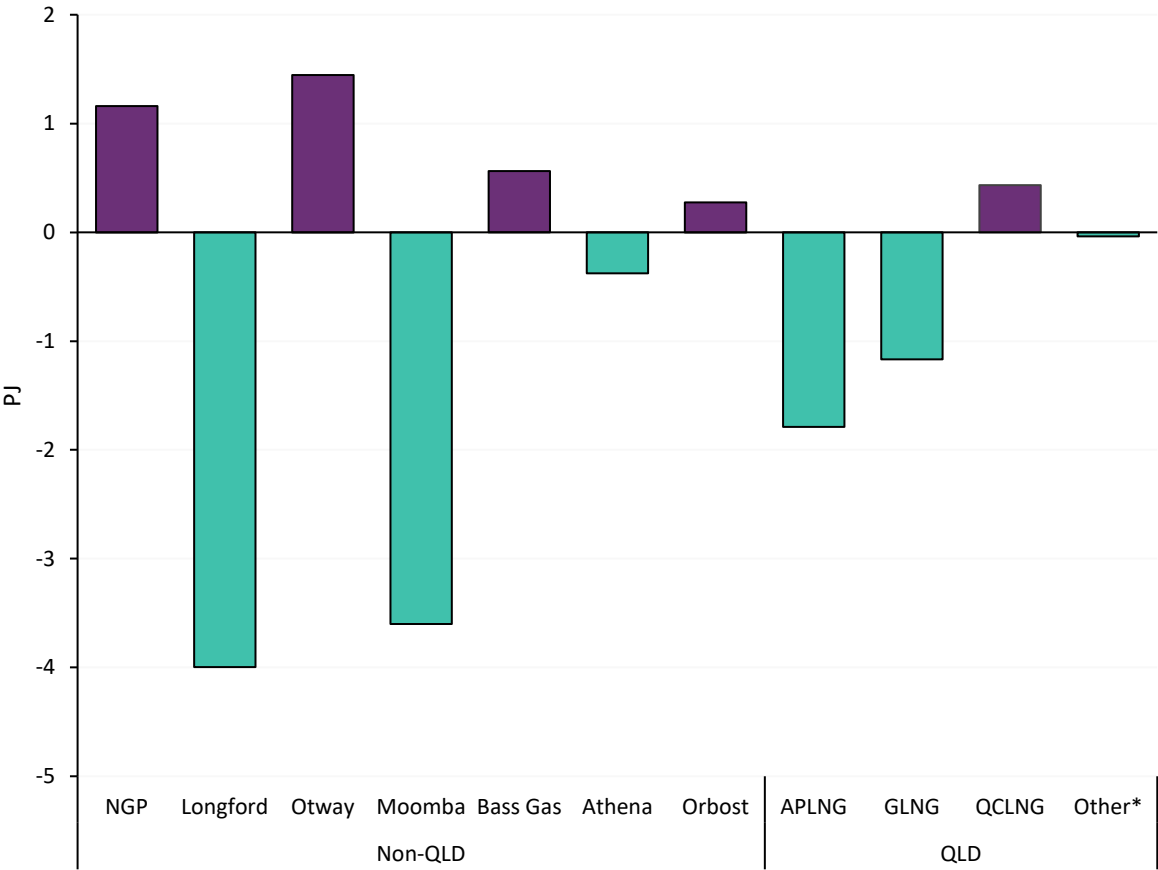
Components of east coast gas demand change – Q3 2024 to Q3 2025



Higher Victorian production replacing Queensland supply in domestic market

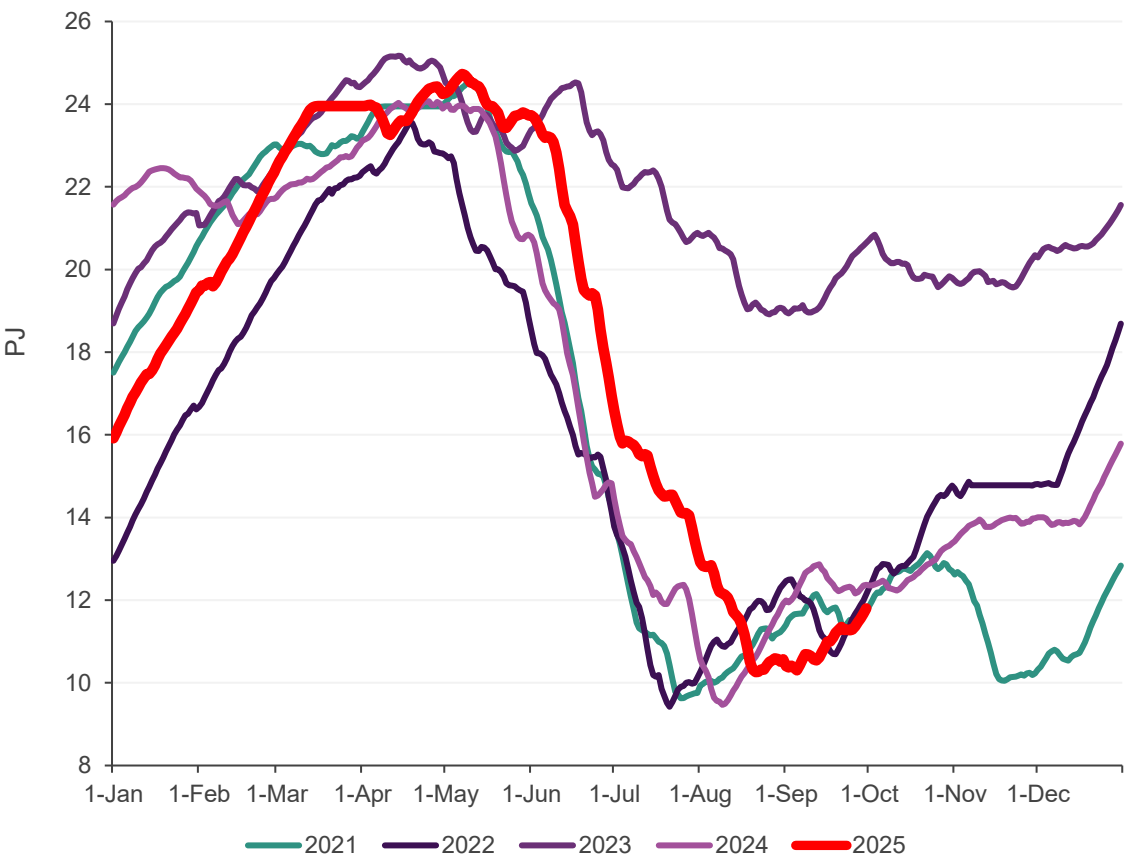
East coast gas production decreased by 2% compared to Q3 2024

Lower production from Longford, Moomba and QLD



Largest Q3 drawdown since 2019

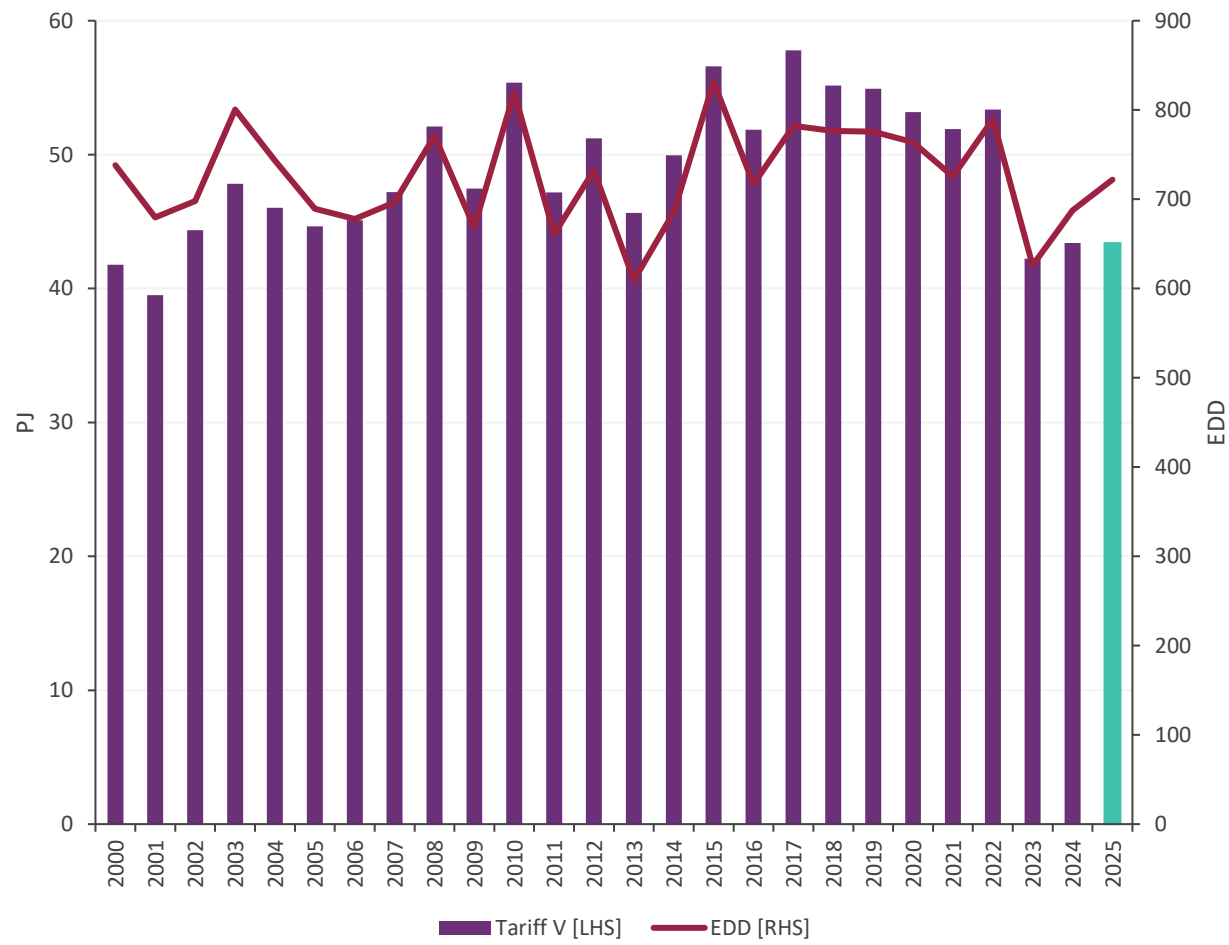
Victorian net gas transfers to other regions



Victorian demand declining across both the industrial and residential sectors

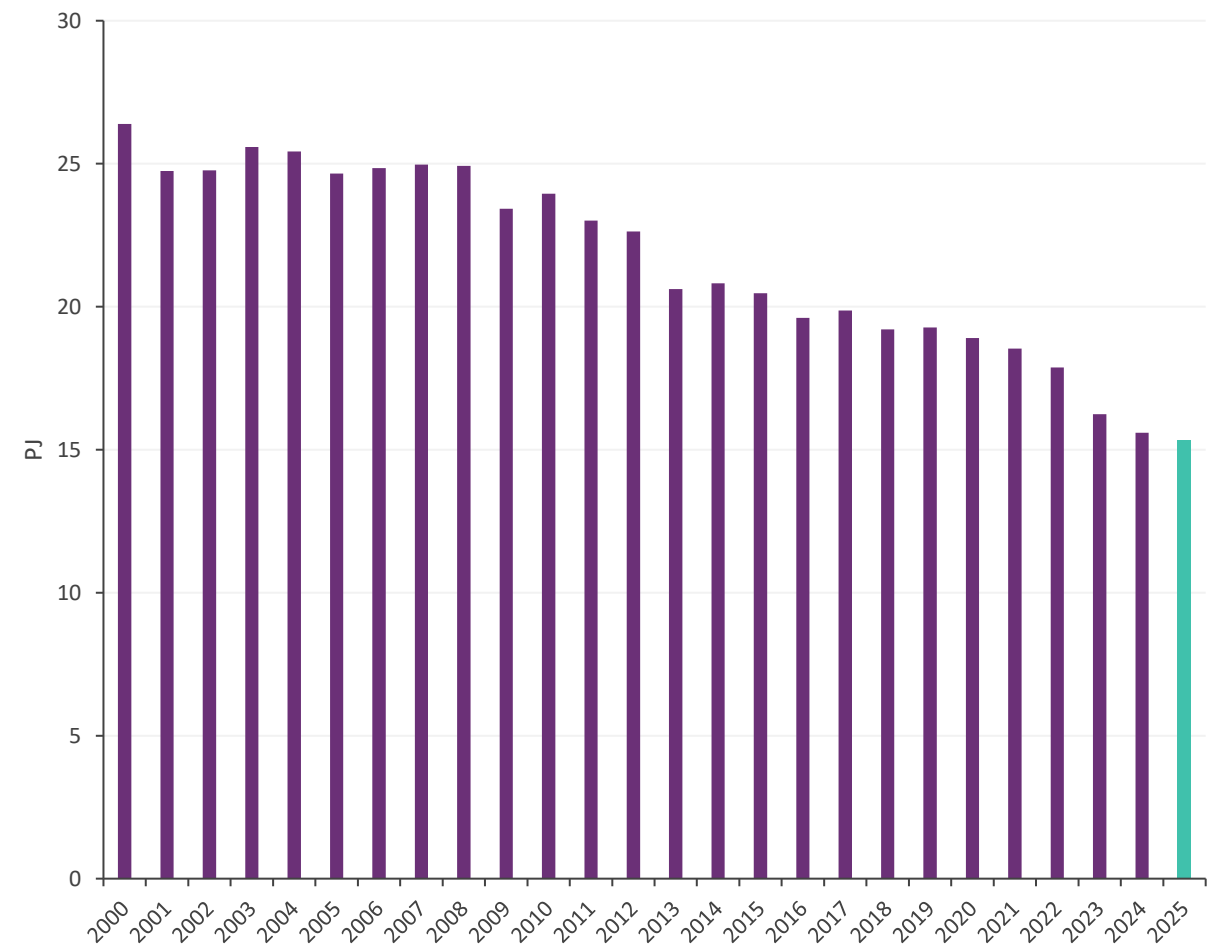
Victorian Tariff V flat even though EDD was significantly higher than Q3 2024

Q3 DWGM Tariff V demand



Victorian industrial demand slightly lower than Q3 2024

Q3 DWGM Tariff D demand



Thank you



energy.unimelb.edu.au

Melbourne Energy Institute

Level 1, Melbourne Connect

700 Swanston Street, Carlton, VIC 3053

 mei-info@unimelb.edu.au

 [@MEIunimelb](https://twitter.com/MEIunimelb)

 [Melbourne Energy Institute](https://www.linkedin.com/company/melbourne-energy-institute)

The University of Melbourne (Australian University) PRV12150/CRICOS 00116K