Australian Government
Department of Climate Change, Energy, the Environment and Water

Wind contract simulations

For the Contract Co-design Working Group

NEM Review Implementation Taskforce

August 2026

Simulation | Overview

Hypothetical plant, real sites and market outcomes

- **44 hypothetical new-entrant** wind plants – today's build costs and financing, in real (2026) dollars – run through six years of market events based on actual generation and price outcomes (FY2021-FY2026).
- Built on analysis of all wind units (11 in NSW, 16 in SA and 17 in VIC) that generated in every quarter of the analysis period.
- **Not a forecast** (prices and generation are realised outcomes, not projections) and **not a pure back-test** (plant economics are those of a plant built today).
- **5-minute resolution** means this analysis can examine the value of **capped contracts**, which is decided in scarcity intervals (modelled price > $300/MWh). Coarser models average scarcity prices away and append them later as estimates based on past market outcomes.
- The analysis window spans **severe events** across a range of market and operational conditions: the 2022 energy crisis (Ukraine, commodities), outages, heatwave demand peaks and wind droughts.
- Revenue settles on the loss-adjusted modelled spot price (spot + LGC, correcting for historically suppressed spot prices) in real 2026 dollars; generation is net of economic curtailment (plant switch off when the modelled price < 0; PPAs are assumed to allow negative price curtailment).

Contract structures and assumptions

Strikes = the plant or region's long-term average capture price or revenue over the analysis period (a proxy for a market forecast)

Contract	Strike (fixed)	Reference (floating)	Contract volume
Merchant	–	–	uncontracted
PPA (run of plant)	plant's 6-yr DWA price	strike (fixed)	80% of actual output
DWA swap	region's average dispatch-weighted price	actual regional DWA price	80% of expected output
Capped DWA swap	average capped DWA price	actual capped DWA price (price capped at $300 before averaging)	same as DWA swap
Regional reference PPA	reference fleet's DWA price, volume-weighted	spot price, every 5-min interval	80% of capacity x fleet CF each interval
Revenue swap	region's average revenue per MW	actual fleet revenue per MW	80% of max capacity
Capped revenue swap	average capped revenue per MW	actual capped revenue per MW	Same as revenue swap

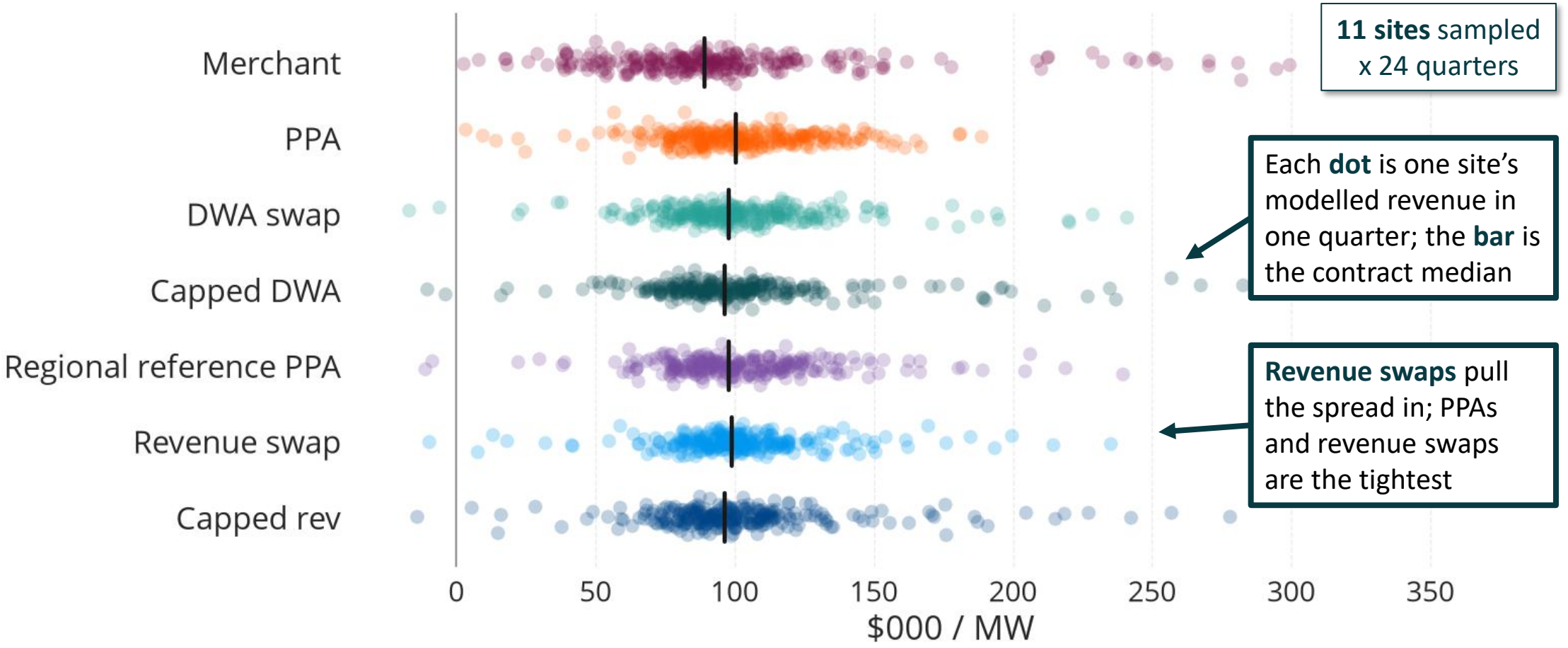
Open questions | Who is in the reference, and how are marginal loss factors treated?

Building the reference price

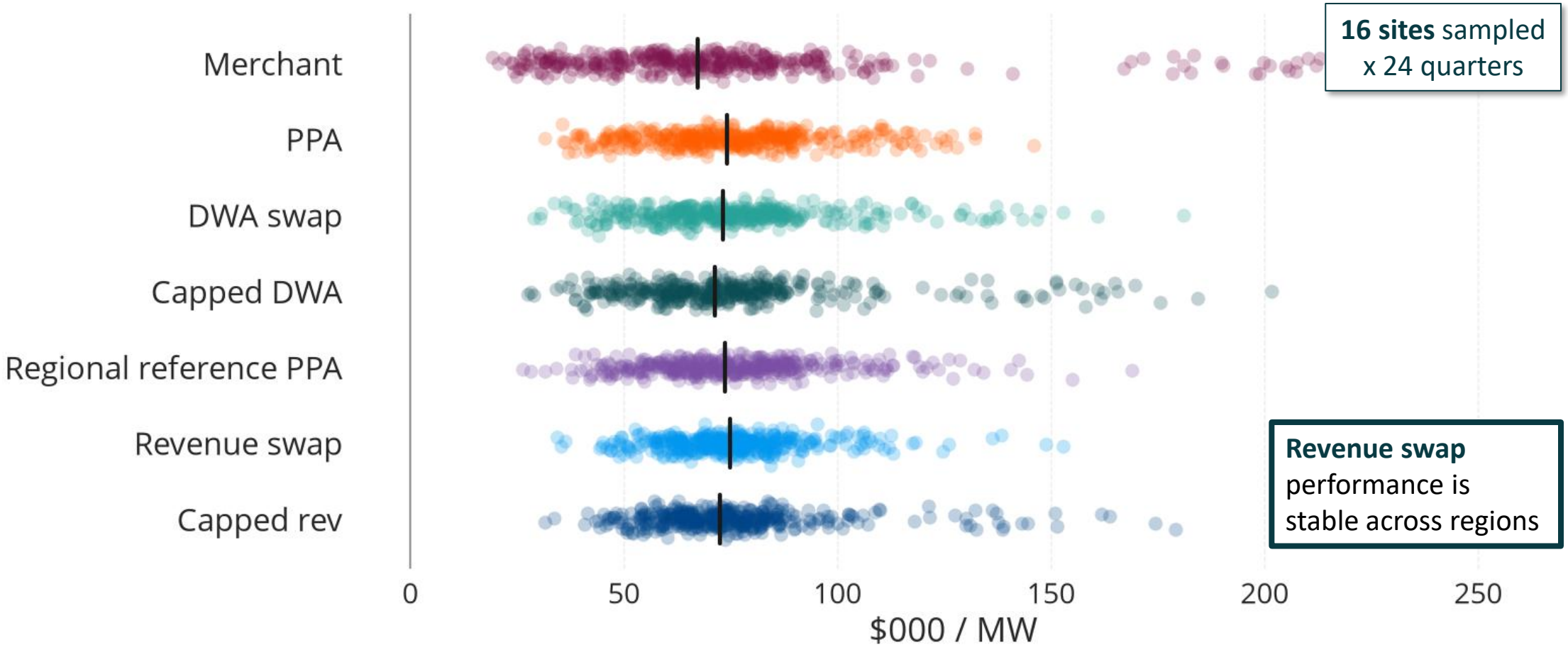
- Every swap in this analysis settles against a reference fleet. Which plants are in that fleet is a design decision that remains unmade.
- New wind entrants ramp up generation over **~9 months of commissioning**. Counting them from first dispatch dilutes any per-MW index (4–5% on average in NSW and VIC, up to 20% in some quarters).
- The consequence differs by contract: for the **revenue swaps** it is a price bias (sellers settle against a dragged-down index); for regional reference PPA it shrinks the contract's volume.
- This analysis uses a working rule: a plant joins the reference fleet from its **fourth active quarter**, so all results are on a post-commissioning fleet. The actual approach is an open question.
- This analysis factors **MLFs** into revenue swaps to reward efficient plant. Whether that should be the case is another decision that remains unmade.

Results | Revenue distributions

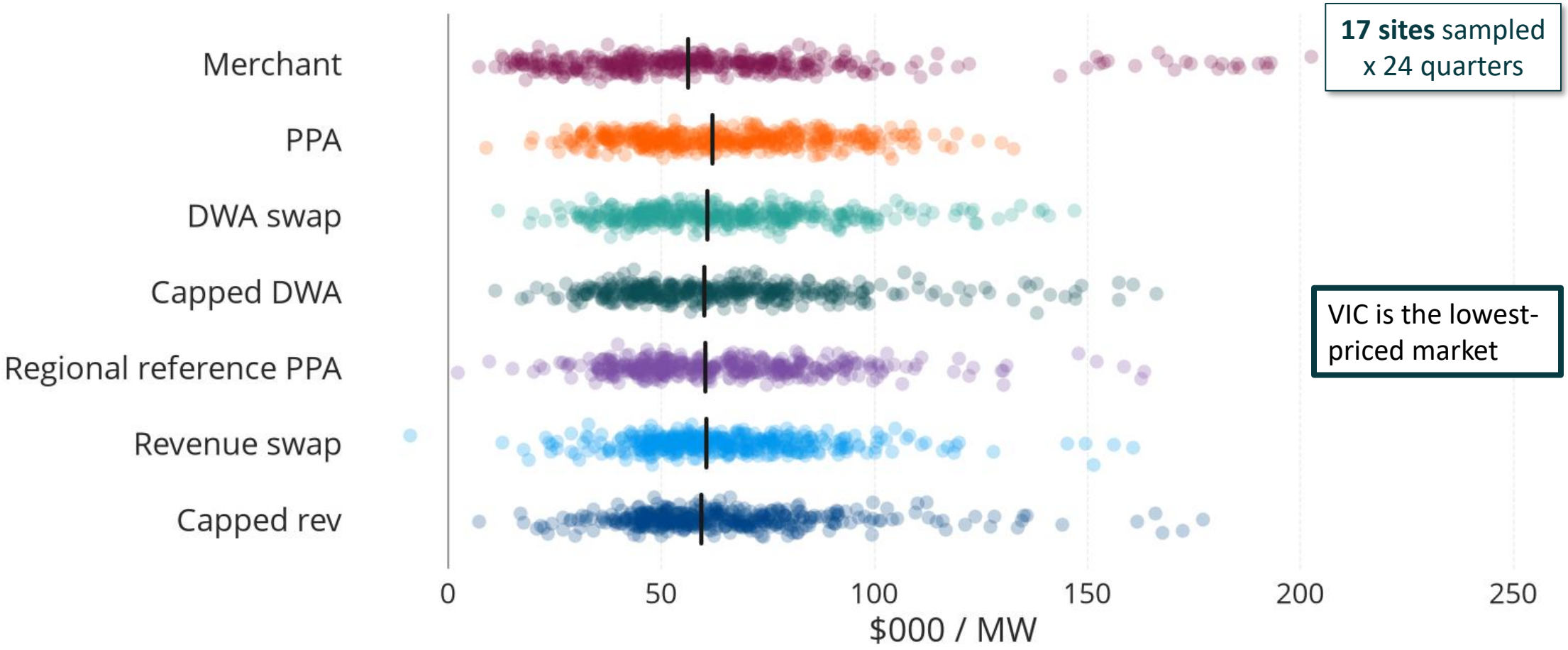
NSW quarterly revenues (spot and contract)



SA quarterly revenues (spot and contract)



VIC quarterly revenues (spot and contract)



17 sites sampled x 24 quarters

VIC is the lowest-priced market

Costs and financing

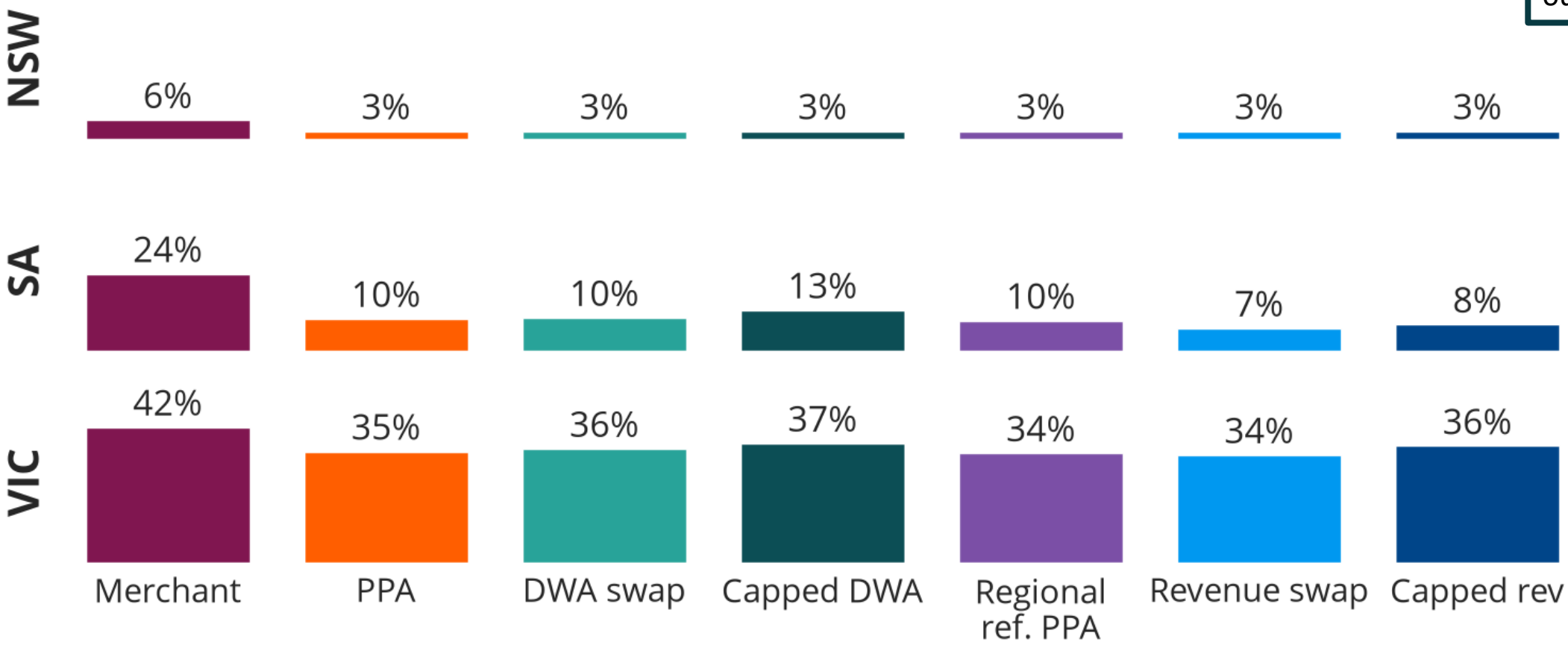
Costs and financing assumptions

- Assumptions align with latest **GenCost** and Griffith University modelling where possible, though this analysis is simpler.
- Pre-tax, one project-finance structure applied to all six contracts, so DSCR differences reflect the **revenue structure**, not the financing.
- **DSCR** = cash available for debt service ÷ debt service, over a rolling year; lock-up if annual DSCR < 1.1.
- 70% gearing at 6% debt is equivalent to a ~7.5% WACC (implying ~11% equity) – a conventional cost of capital.

Assumption	Value
Overnight capital costs	$3,248 / kW
Construction	1 year (no revenue)
Economic life	25 years
Fixed O&M	$29 / kW / yr
Gearing (debt share)	70%
Cost of debt	6.0%
Debt amortisation	25 years
Tax	not modelled (pre-tax)
Lock-up covenant	DSCR < 1.1 (over 4 quarters)

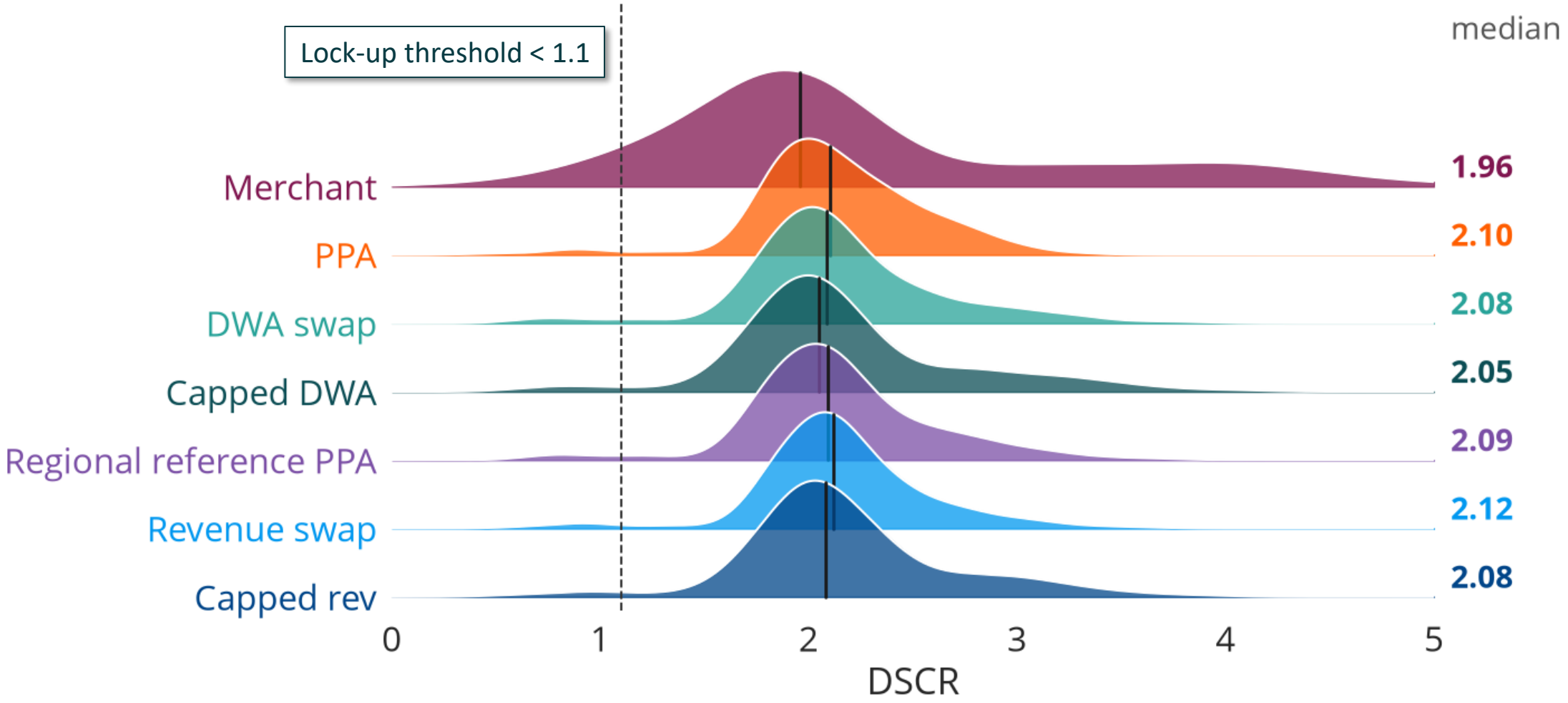
Lock-up rates by region (rolling annual DSCR < 1.1)

Region, rather than contract, dominates financial outcomes.



NSW rolling annual DSCR distributions

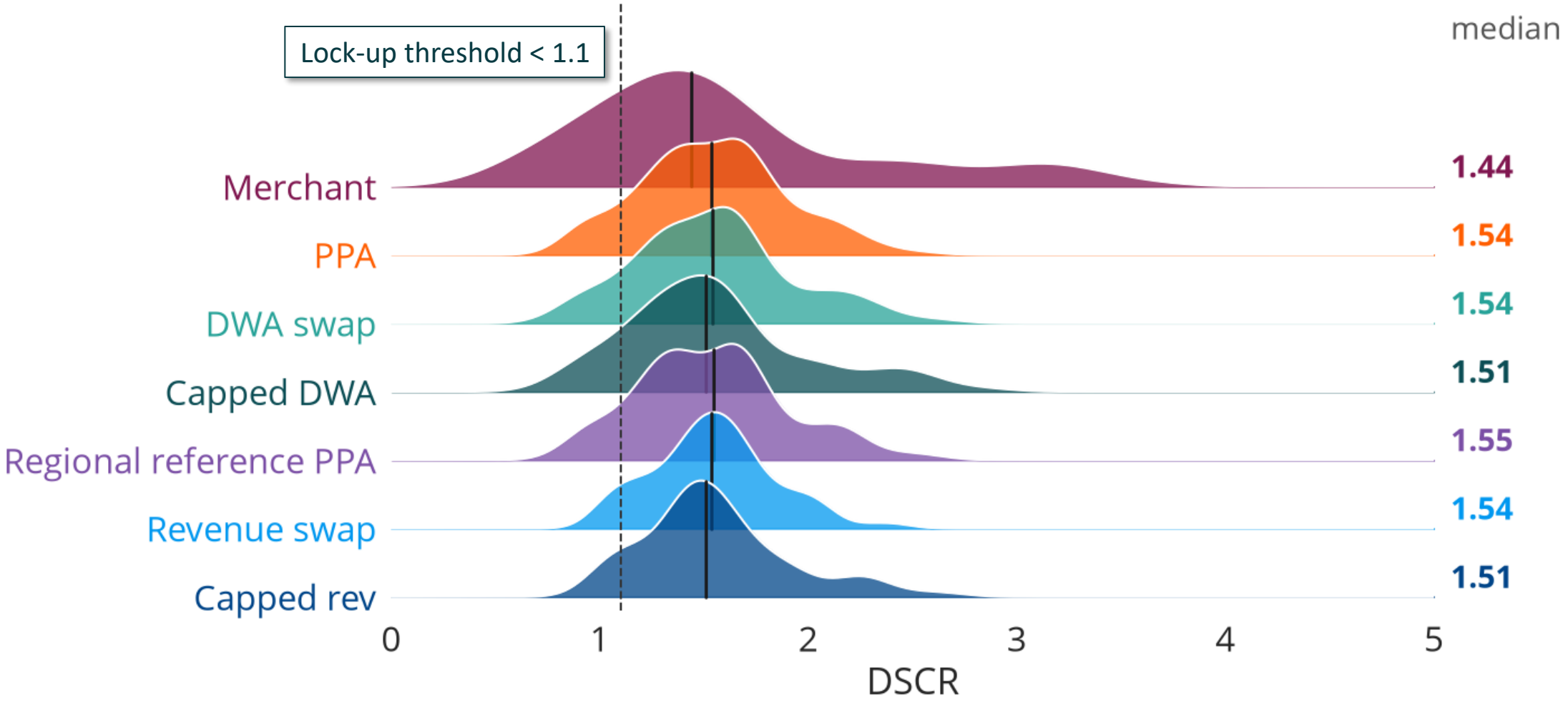
Note: the tails here reflect uniform-high build costs applied to every site; the actual plants at these sites were cheaper to build and de-risked by long-term PPAs



NSW rolling annual DSCRs (11 sites)

	Revenue variance ($k/MW)	DSCR					Lock-ups
		Mean	Median	10th centile	90th centile	Minimum	
Merchant	60.8	2.27	1.97	1.26	3.94	0.34	6.6%
PPA	26.4	2.16	2.12	1.81	2.69	0.47	2.6%
DWA swap	29.5	2.17	2.10	1.79	2.76	0.70	2.6%
Capped DWA	35.9	2.19	2.08	1.71	2.98	0.65	2.6%
Reg. ref. PPA	28.7	2.17	2.13	1.77	2.72	0.76	2.6%
Revenue swap	26.1	2.18	2.14	1.83	2.66	0.63	2.6%
Capped rev	33.9	2.20	2.11	1.75	2.93	0.57	2.6%

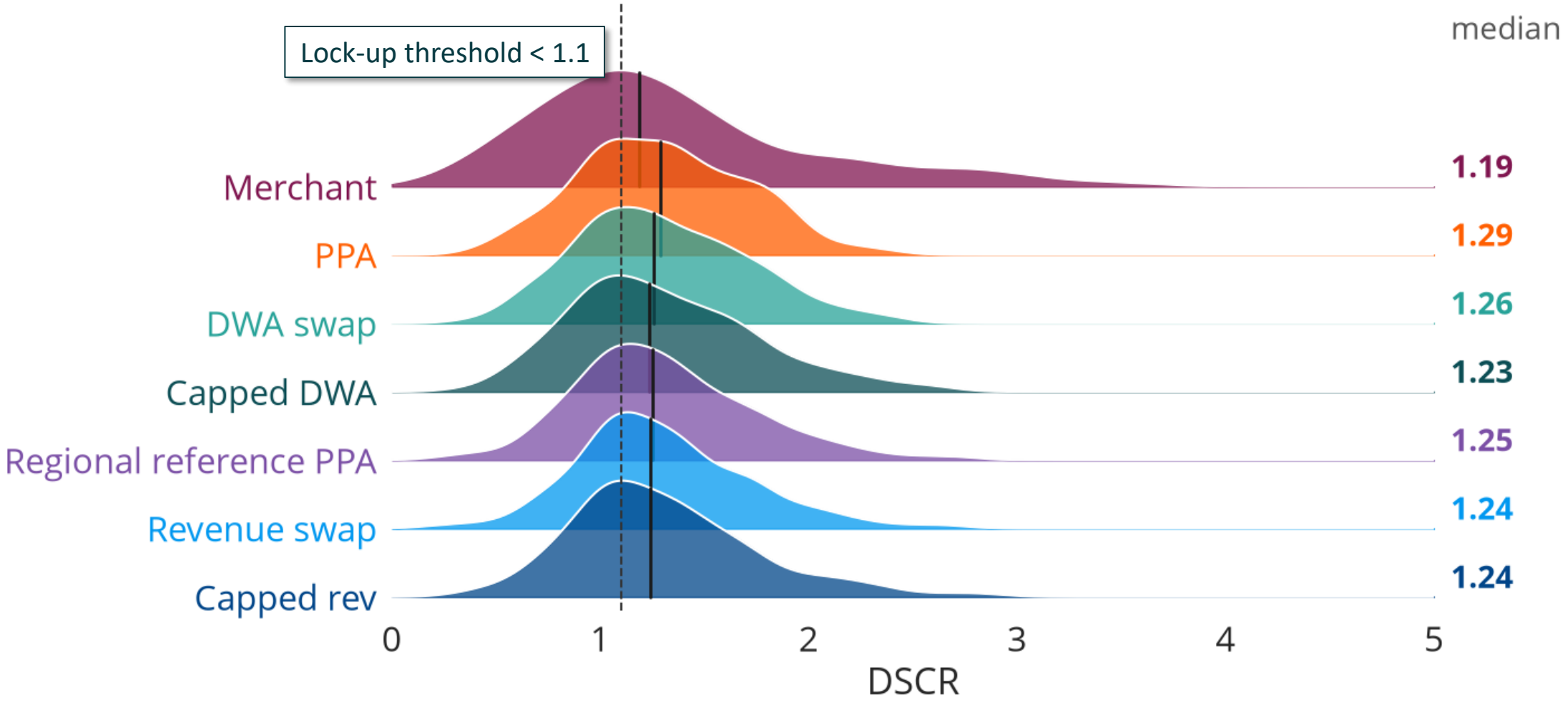
SA rolling annual DSCR distributions



SA rolling annual DSCRs (16 sites)

	Revenue variance ($k/MW)	DSCR					Lock-ups
		Mean	Median	10th centile	90th centile	Minimum	
Merchant	43.7	1.62	1.45	0.89	2.80	0.43	23.5%
PPA	17.6	1.55	1.55	1.11	2.06	0.83	9.8%
DWA swap	20.4	1.56	1.55	1.10	2.10	0.75	9.8%
Capped DWA	25.5	1.57	1.51	1.06	2.25	0.74	12.8%
Reg. ref. PPA	18.3	1.55	1.56	1.11	2.11	0.80	9.5%
Revenue swap	13.0	1.56	1.55	1.16	1.97	0.97	6.6%
Capped rev	14.0	1.57	1.51	1.13	2.07	0.96	8.0%

VIC rolling annual DSCR distributions



VIC rolling annual DSCRs (17 sites)

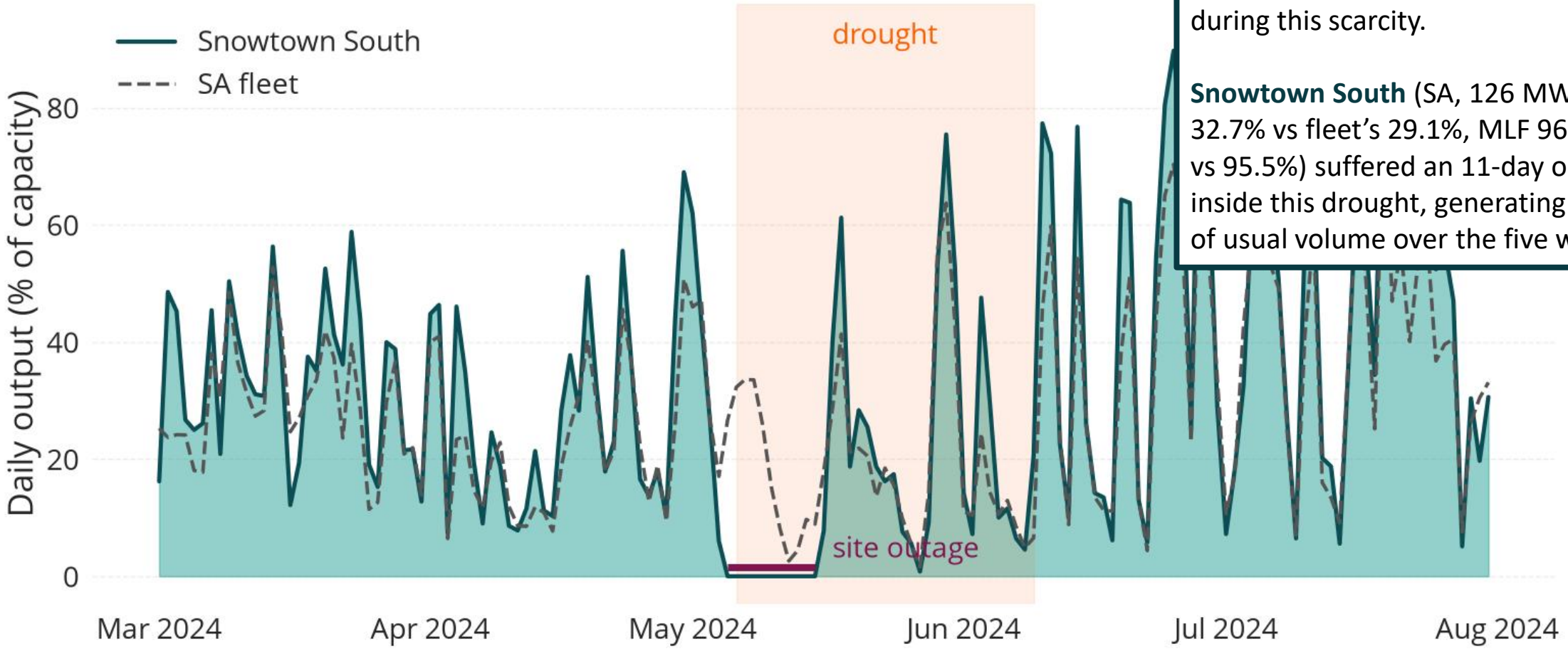
	Revenue variance ($k/MW)	DSCR					Lock-ups
		Mean	Median	10th centile	90th centile	Minimum	
Merchant	39.1	1.38	1.24	0.65	2.35	0.23	39.2%
PPA	17.1	1.33	1.31	0.82	1.88	0.42	32.2%
DWA swap	18.3	1.32	1.28	0.81	1.87	0.36	32.5%
Capped DWA	21.7	1.33	1.25	0.79	1.94	0.34	35.9%
Reg. ref. PPA	19.2	1.33	1.27	0.81	1.88	0.26	31.4%
Revenue swap	16.0	1.32	1.27	0.81	1.89	0.21	30.3%
Capped rev	19.2	1.33	1.27	0.80	1.93	0.37	32.5%

Case study 1 | Systemic *and* idiosyncratic shock

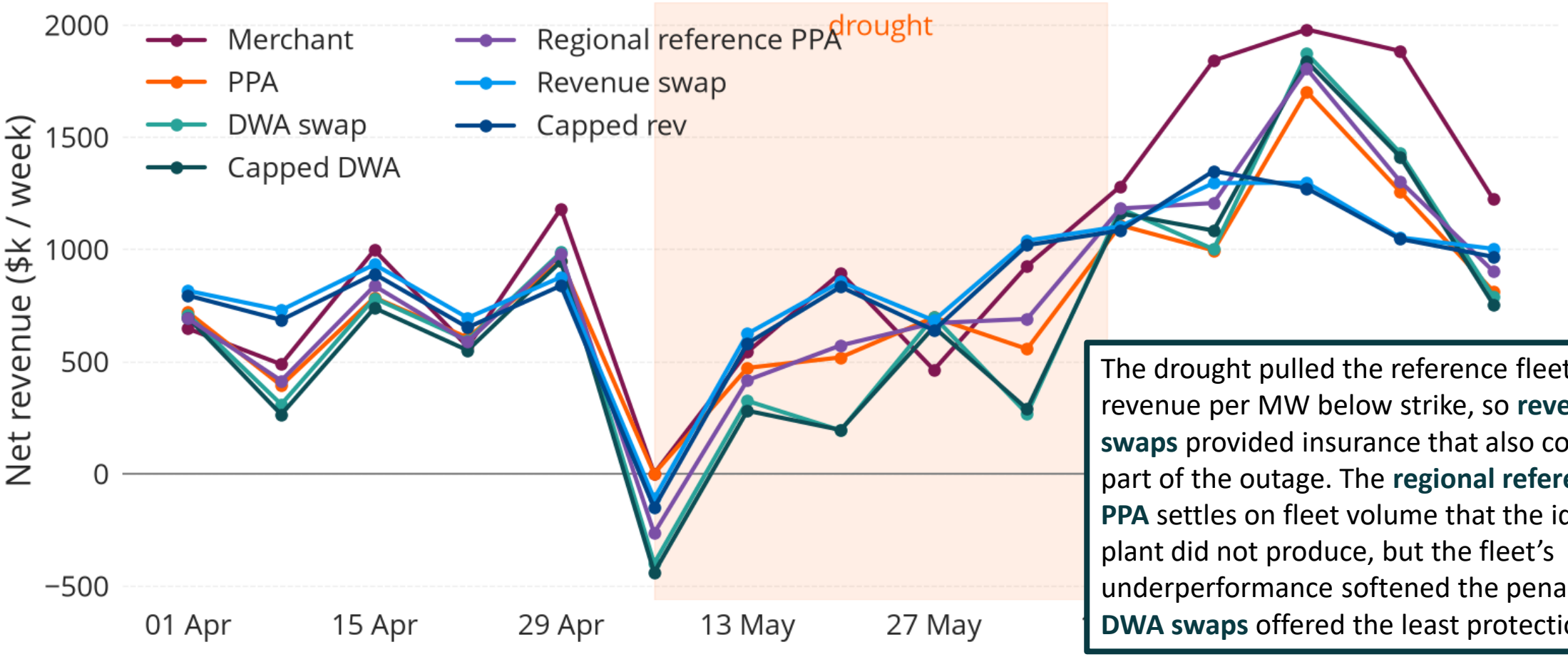
Snowtown South outage during drought

May 2024 was the deepest wind drought in the analysis period: the SA fleet generated 66% of usual volume for five weeks, and NSW and VIC were also down. Prices rose during this scarcity.

Snowtown South (SA, 126 MW, CF 32.7% vs fleet's 29.1%, MLF 96.7% vs 95.5%) suffered an 11-day outage inside this drought, generating 52% of usual volume over the five weeks.



Snowtown South net weekly revenues

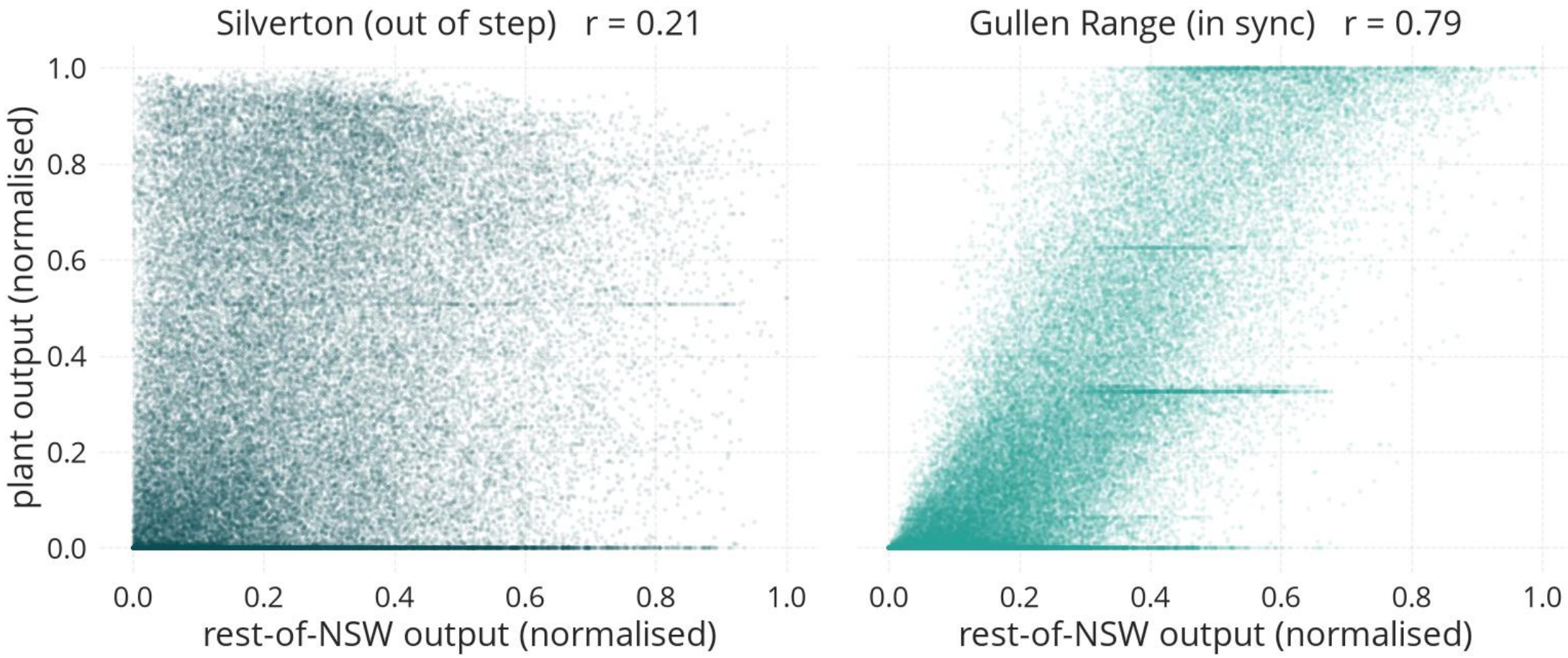


The drought pulled the reference fleet's revenue per MW below strike, so **revenue swaps** provided insurance that also covered part of the outage. The **regional reference PPA** settles on fleet volume that the idle plant did not produce, but the fleet's underperformance softened the penalty. **DWA swaps** offered the least protection.

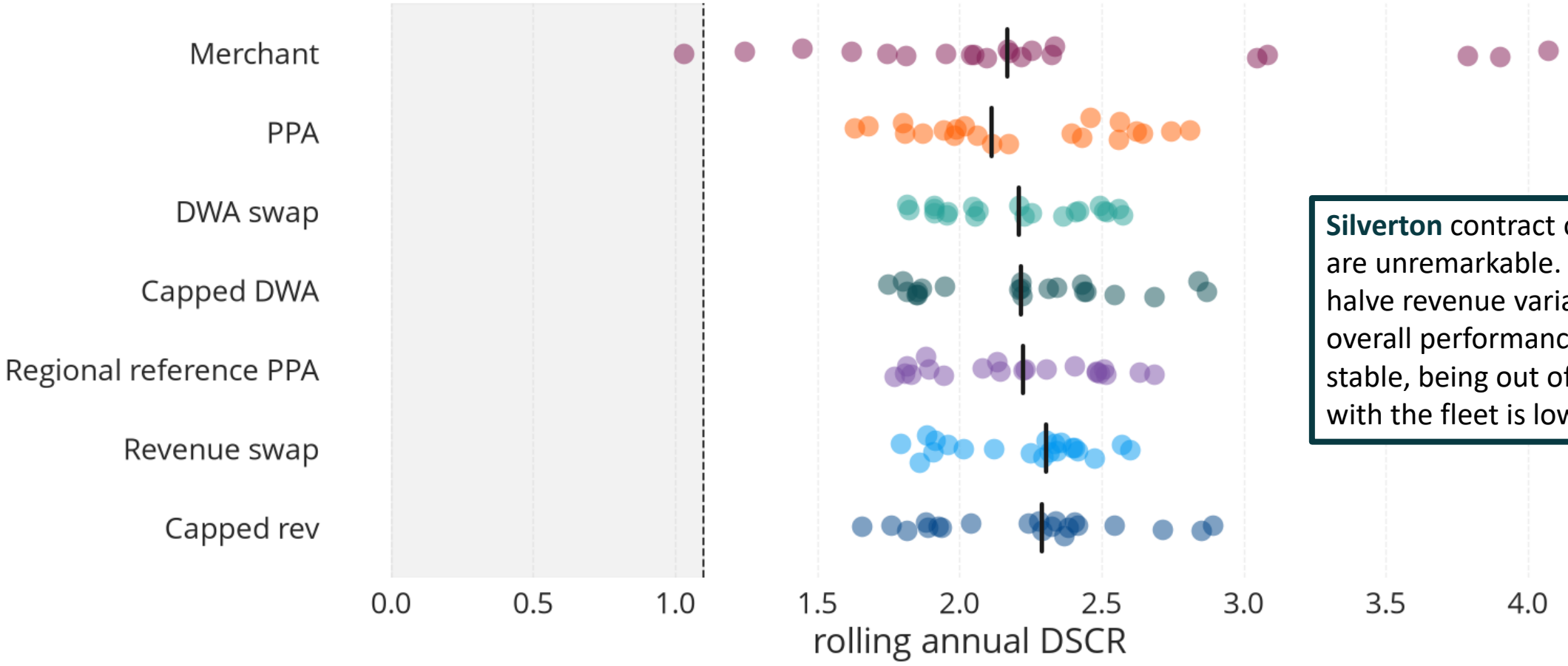
Case study 2 | Out of sync with the fleet

Silverton Wind Farm out of step

Silverton (far-west NSW, 194 MW, CF 35.9% vs fleet's 32%, MLF 82.8% vs 93%) sits in a different wind regime from the NSW fleet. Gullen Range (Southern Tablelands) is highly correlated with the region.



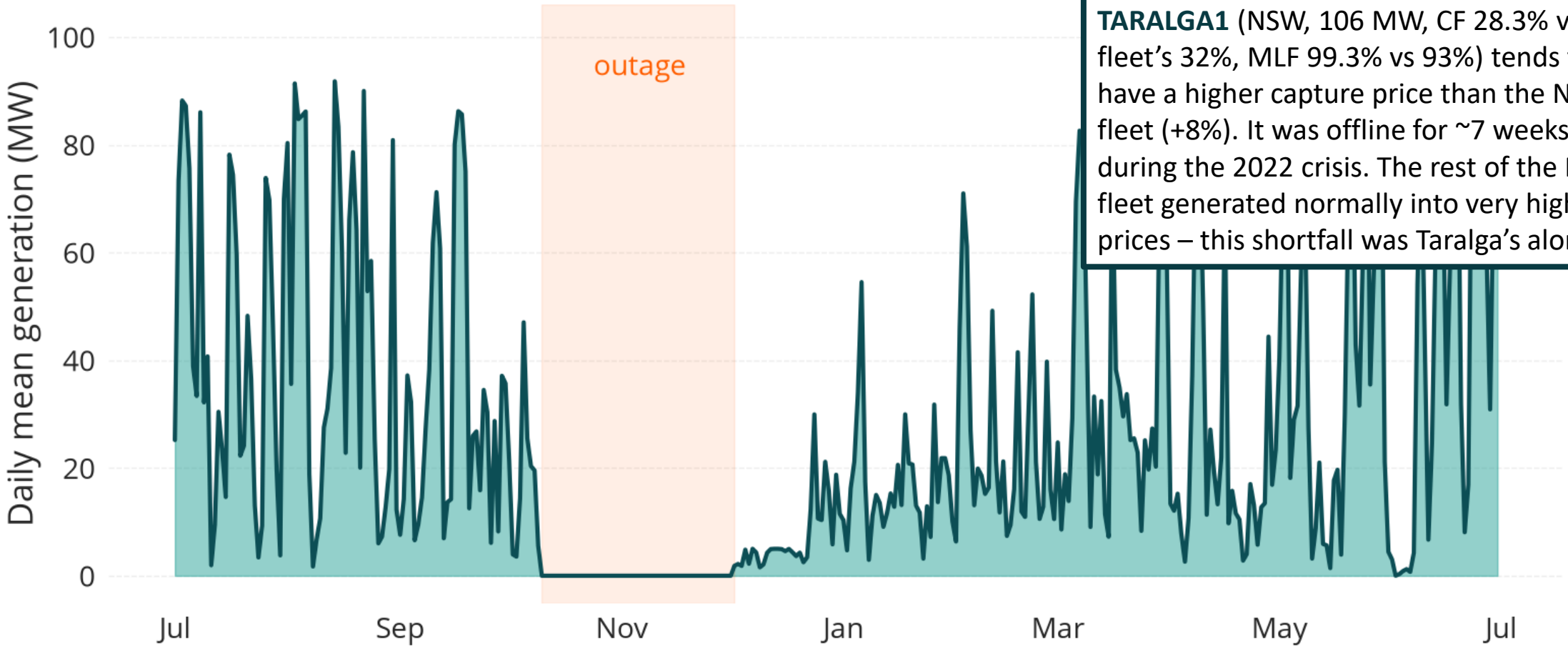
Silverton Wind Farm DSCR by contract



Silverton contract outcomes are unremarkable. Swaps halve revenue variance. If overall performance is stable, being out of sync with the fleet is low risk.

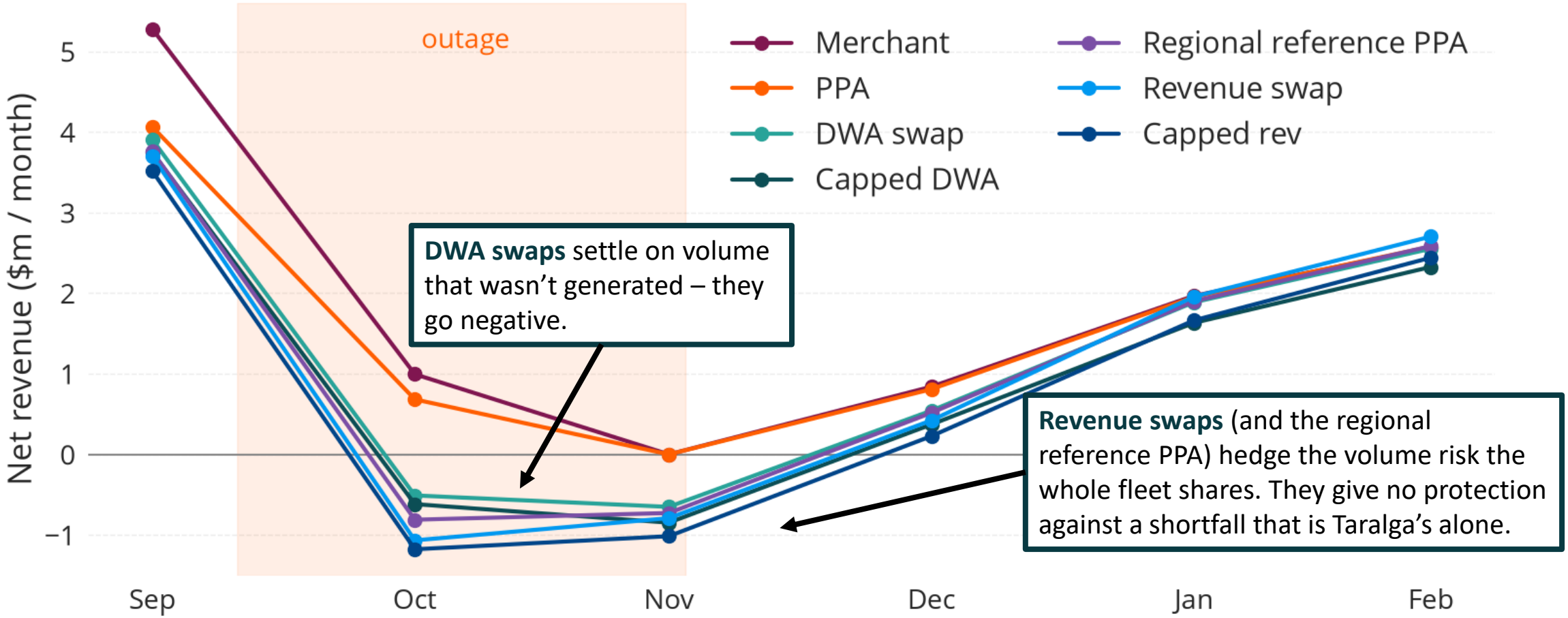
Case study 3 | Force majeure while the fleet reaps scarcity prices

Taralga Wind Farm force majeure amid scarcity prices



TARALGA1 (NSW, 106 MW, CF 28.3% vs fleet's 32%, MLF 99.3% vs 93%) tends to have a higher capture price than the NSW fleet (+8%). It was offline for ~7 weeks late during the 2022 crisis. The rest of the NSW fleet generated normally into very high prices – this shortfall was Taralga's alone.

Taralga Wind Farm net monthly revenues



Contact us

NEM Review Implementation Taskforce
ESEM Commercial & Analysis
nemreview.commercial@dcceew.gov.au

dcceew
gov.au