



ESEM Contract Co-Design: Consultation Overview



Consultation Process Overview

- The Electricity Contract Co-Design Working Group (WG) has been tasked with defining a small set of core derivative contracts that could underpin trading activities and the proposed Electricity Service Entry Mechanism (ESEM) and Market Making Obligation (MMO) for bulk energy delivery, shaping and firming services.
- A consultation process is being undertaken to obtain targeted feedback on key design features of the WG's preferred contract structures; and provide a wide range of stakeholders with the opportunity to provide feedback for consideration by the WG.
- Industry stakeholders are encouraged to provide feedback via the [dedicated portal](#) by 17:00 AEST, 2nd October 2026.

	Sep			Oct				Nov				Dec			
W/C	14/9	21/9	28/9	5/10	12/10	19/10	26/10	2/11	9/11	16/11	23/11	30/11	7/12	14/12	21/12
Workshop 3b															
Industry Consultation Period															
Workshop 4															
Workshop 5															
Prepare Stage 1 Final Report															
Government decision making and planning															

Further design and long-form drafting to occur in CY27.

Consultation Process Scope

	<u>Contract Co-Design Draft Contract Structures Consultation</u>	<u>Draft NEL/NER Amendments Consultation</u>	<u>Market Visibility Framework consultation</u>
Scope of consultation:	Targeted feedback on preferred contract structures for bulk energy, shaping and firming services.	Feedback on the draft National Electricity Market Wholesale Market Settings Regulatory Reforms.	Seeking stakeholder feedback on the draft Market Visibility Framework (MVF).
Organisation managing:	ASL	DCCEEW	AEMO
Submission due date:	2/10/26	13/10/26	13/10/26

Consultation Questions

Reference PPA:

- Is the proposed contract structure suitable for a range of bulk energy technologies?
- Does a cap on spot price exposure aligned to the strike price of the firming product (e.g. \$600\$/MWh) appropriately balance risks for sellers and buyers?
- Is a negative price provision required for the proposed contract, noting it is settled against the Reference Fleet's performance and LGCs / REGOs are not included in swap? If so, is a volume knock-out (no settlement during negative price periods) or a \$0 price floor more preferable?
- Does the proposed design of the Reference Production Index appropriately balance risks for sellers (primarily basis risk) and buyers (long-term value of the product)?

Dynamic Time of Day Spread Swap

- Does the proposed approach to determining charge/discharge periods on a day ahead basis, using residual demand calculation, appropriately balance operational risks/simplicity with long-term value?
- Does the use of AEMO's forecast data to determine shaping periods result in any material risks to the usability of this contract over the long-term?
- Does the proposed approach of determining nominations at 4pm on a day ahead basis pose any material operational risks?
- Does the proposed Daily Shaping Period that commences at the Trading Interval ending at 09:05 and finishes at the Trading Interval ending at 09:00 the following day pose any material operational risks?

\$600 Cap

- Is a \$600 cap, in comparison to a \$300 cap, appropriate to support the entry of new firming assets? If not, why?

Common Contract Features

- Are there any concerns with the proposed weekly settlement approach, aligned to the AEMO settlement calendar?
- Are alternate approaches to manage FM risk exposure (outside of the contracts) required to support the entry of new assets?

Overarching Feedback

- Do the proposed contract structures achieve the WG's Terms of Reference and perform well against the identified evaluation criteria?
- Are there any concerns with the ability of the contract structures proposed to be subject to a Market Making Obligation (MMO) in the future?
- Will the proposed contract structures, in conjunction with other risk management contracts, such as flat swaps, evening peak swaps or caps, be effective for buyers (e.g. retailers, large loads, etc.) to manage financial risks?



Single Slide Product Summaries



Regional Reference PPA

The Regional Reference PPA provides operators with access to a fixed price, cash settled swap, where the volume and price of the swap is based on the performance of all projects within the Reference Fleet.

Regional Reference Overview

- Proponents bid **Fixed Price** (\$/MWh) and **Contract Capacity** (MW).
- The volume of the swap is determined by a Reference Fleet, which contains all operational projects (>30MW) of the same Technology within the specified NEM Region.
- Weekly settlement minimises buyer and seller prudential requirements and smooths cash-flows.
- The RRPPA is a purely financial agreement and does not contain any physical obligations.

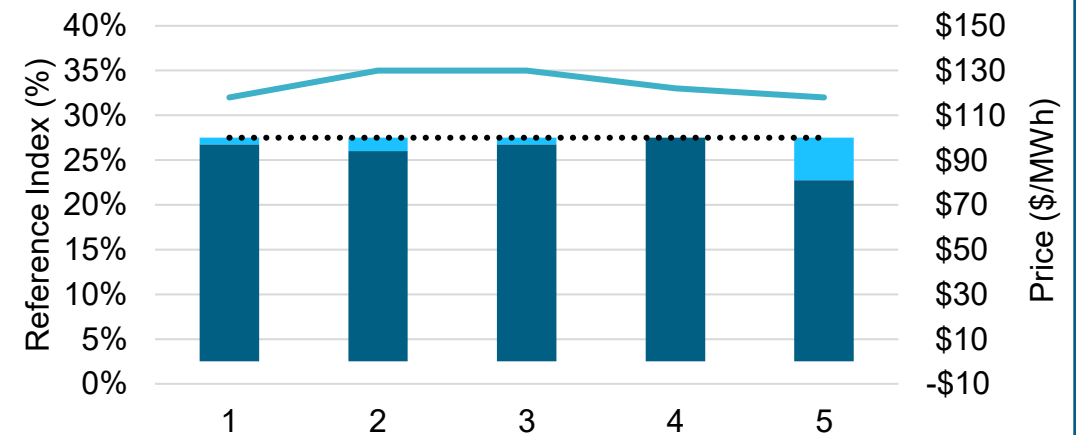
If the Floating Price is below the Fixed Price

Buyer pays the difference between the Floating Price and the Fixed Price, per Reference Fleet volume. Negative price provisions will apply.

If the Floating Price exceeds the Fixed Price

Seller pays the difference between the Floating Price and the Fixed Price, per Reference Fleet volume. Settlement includes a cap of \$600/MWh.

Example Regional Reference PPA Mechanism



Key: ■ Floating Price ■ Contract Settlement
— Reference Production Index Fixed Price

Notional Quantity_{TI} (MWh)

$$\text{Notional Quantity}_{TI} = \text{Contract Capacity} \times 1/12 \times \text{Reference Production Index}_{TI}$$

Settlement Amount_{TI} (\$)

$$\text{Settlement Amount}_{TI} = \text{Notional Quantity}_{TI} \times (\text{Floating Price}_{TI} - \text{Fixed Price})$$

Dynamic Time of Day Spread Swap

The Dynamic ToD Spread Swap contracts the difference between the price in daily charge and discharge periods (the spread), which are nominated a day-ahead using residual demand forecasts¹.

Dynamic ToD Spread Swap Overview

- Proponents nominate their **Fixed Spread** (\$/MWh) and **Contract Capacity** (MW).
- Charge and Discharge Periods determined day-ahead, based on forecast Residual Demand.
- A daily Realised Spread is calculated ex-post as the difference between the average Floating Price during the charge and discharge periods.
- Weekly settlement minimises buyer and seller prudential requirements and smooths cash-flows.
- The swap is a purely financial agreement and does not require operator to charge/discharge during nominated periods.

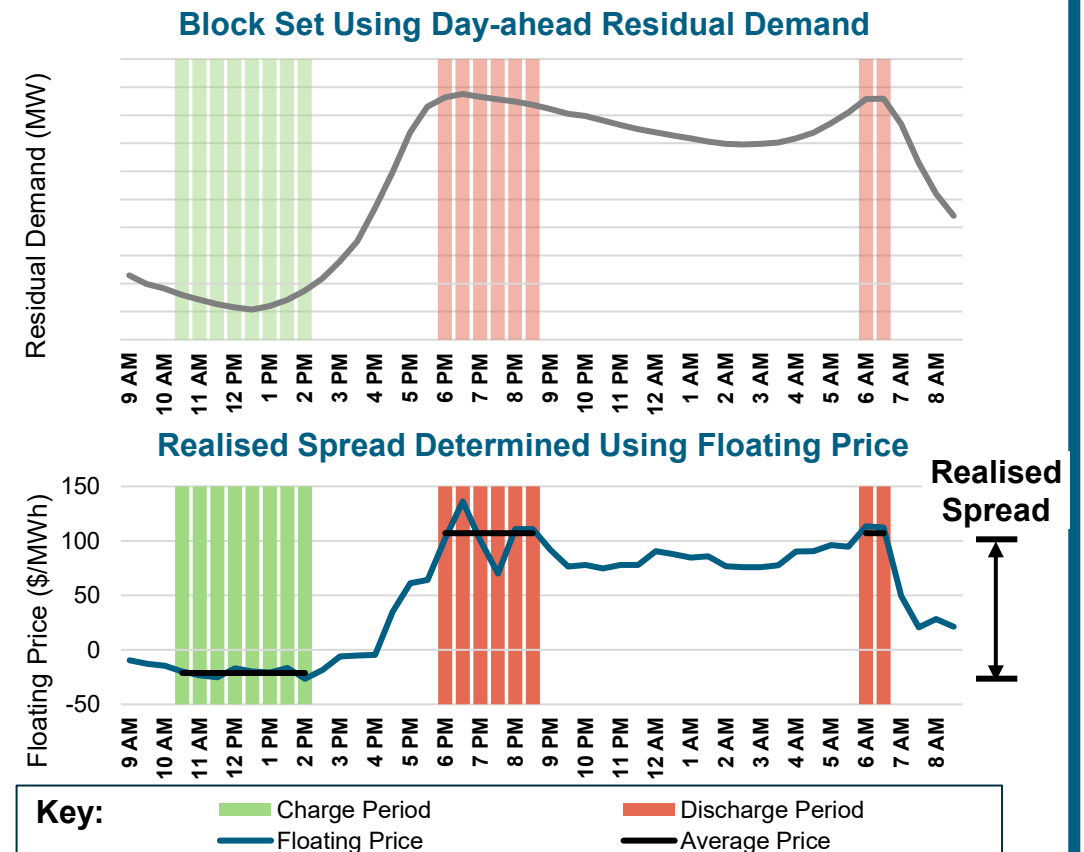
If the Realised Spread is below the Fixed Spread

Buyer pays the difference between the Realised Spread and the Fixed Price per notional quantity.

If the Realised Spread exceeds the Fixed Spread

Seller pays the difference between the Realised Spread and the Fixed Price per notional quantity.

Example Dynamic ToD Spread Swap Mechanism



\$600 Cap

The \$600 cap is a hedging product that caps the amount buyers are exposed to high prices via a swap that applies only when spot prices are above the strike price (i.e. above \$600/MWh).

\$600 Cap Overview

- Proponents nominate their **Contract Price** (\$/MWh) and **Contract Capacity** (MW), where the Contract Price is anticipated to reflect the cost of new entrant firming assets.
- Weekly settlement minimises buyer and seller prudential requirements and smooths cash-flows.
- The cap is a purely financial agreement and does not contain any physical obligations to defend the cap (although financiers would likely mandate this).

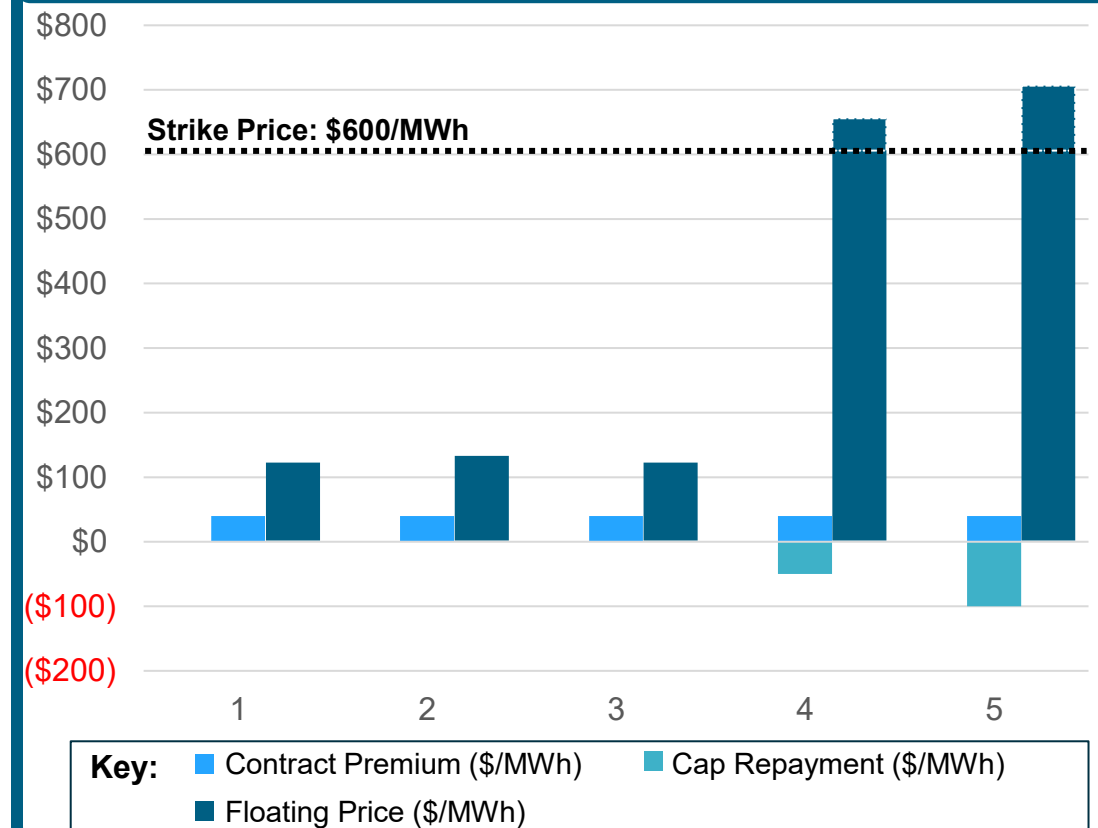
If the Floating Price is below the Strike Price

Buyer pays the Contract Premium to the Seller.

If the Floating Price exceeds the Strike Price

Seller repays the difference between the Floating Price and the Strike Price (Cap Repayment Amount). At settlement, the Contract Premium and Cap Repayment Amount would be netted off.

Example \$600 Cap Mechanism





ESEM Contract Co-Design: Summary of Proposed Products



Products Overview

Bulk Energy

Regional Reference PPA

A swap based on the dispatched volume and price of the regional Reference Fleet that provides buyers with a hedge based on a regional technology (e.g. wind or solar) shape and renewable sellers with long-term price certainty.

Shaping

Dynamic Time of Day Block Spread Swap

A dynamically set swap that contracts the difference between daily low-price charge periods and high-price discharge periods (determined by day-ahead residual demand), providing buyers with a hedge against intra-day volatility and sellers with long-term revenue certainty.

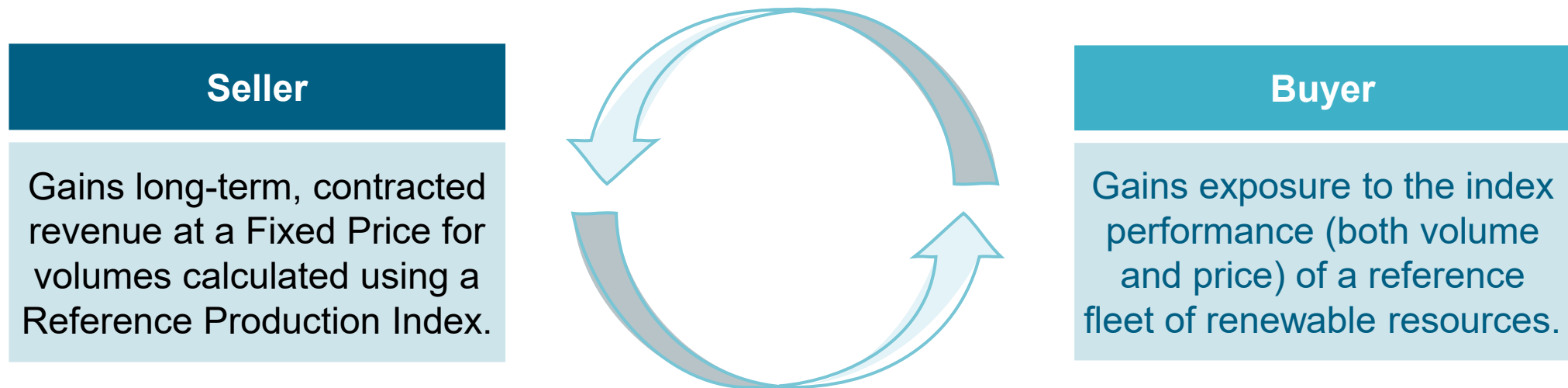
Firming

\$600 Cap Contract

A cap with a \$600 strike price that provides buyers with insurance against high-priced events and sellers with long-term, stable cash-flows and ability to retain some merchant revenues under the cap.

Regional Reference PPA: Overview

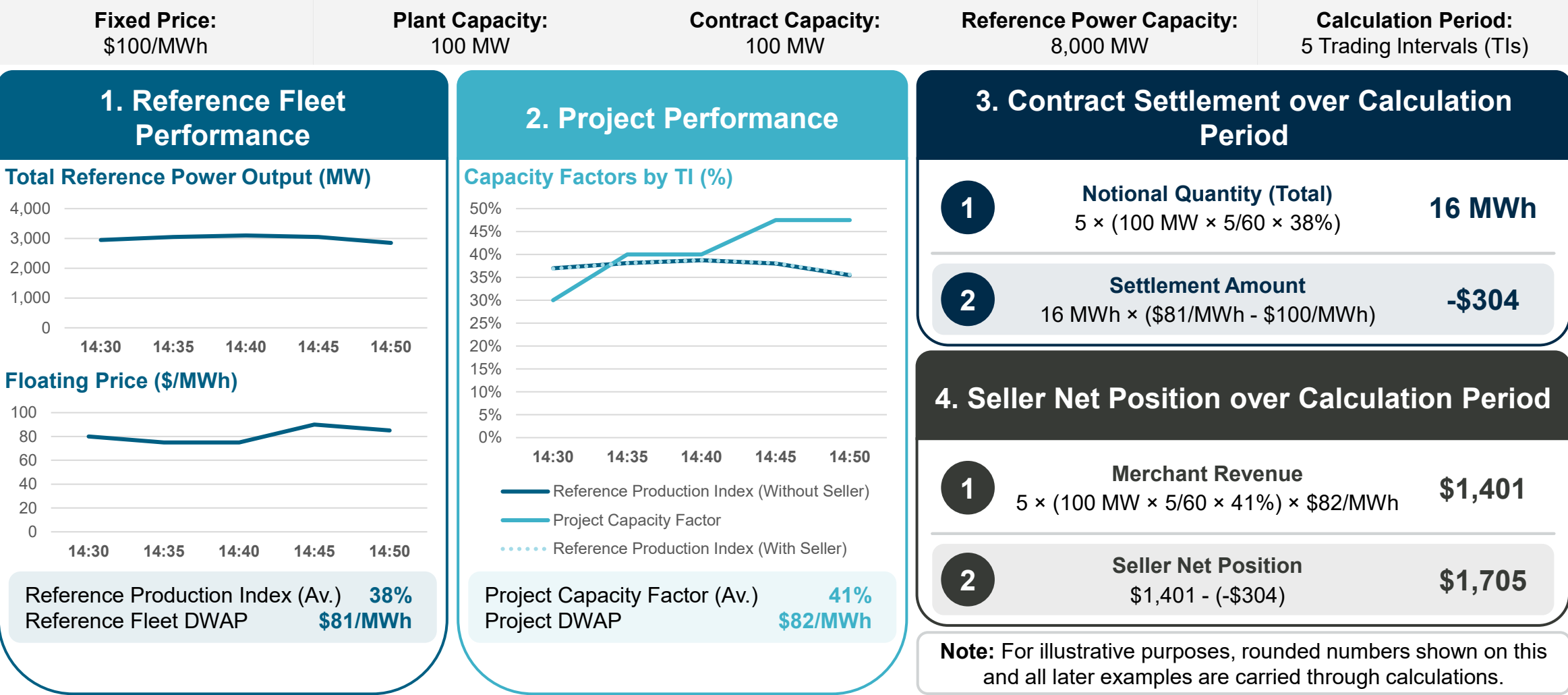
The RRPPA is based on a swap structure, where the volume and price of the swap is based on the performance of all projects within the Reference Fleet. This reduces the volume risk that buyers are exposed to from individual projects, while retaining incentives for the sellers to outperform the Reference Fleet.



Regional Reference PPA: Key Terms

	Key Term	Description
Overview	Fixed Price (\$/MWh)	The Fixed Price is the agreed amount that the Seller will receive for the Notional Quantity.
	Floating Price (\$/MWh)	The Spot Price set by AEMO for a Trading Interval at the Regional Reference Node.
	Contract Capacity (MW)	XX MW of capacity of the specified Technology within the specified NEM Region.
Settlement	Reference Fleet	The Reference Fleet contains all Operational projects of the specified Technology within the specified NEM Region with a Nameplate Capacity of 30 MW or greater.
	Scaling Factor_n (%)	$\text{Scaling Factor}_n = \min \left(100\%, \frac{RF \times \text{Reference Fleet Capacity}}{\text{Nameplate Capacity}_n} \right), \text{ where:}$ n is the number of projects within the Reference Fleet; and $\text{Nameplate Capacity}_n$ is the nameplate capacity (MW) registered with AEMO for project n.
	Reference Production Index_{TI} (%)	$\text{Reference Production Index}_{TI} = \frac{\sum_1^n (\text{Scaling Factor}_n \times \text{Dispatched Output}_{n,TI})}{\sum_1^n (\text{Scaling Factor}_n \times \text{Nameplate Capacity}_n)}, \text{ where:}$ $\text{Dispatched Output}_{n,TI}$ is the total generation output (MW) of project n within the Reference Fleet in Trading Interval TI.
	Notional Quantity_{TI} (MWh)	$\text{Notional Quantity}_{TI} = \text{Contract Capacity} \times \frac{TI \text{ Duration}}{60} \times \text{Reference Production Index}_{TI}, \text{ where:}$ $TI \text{ Duration}$ is the number of minutes in a Trading Interval.
	Settlement Amount_{CP} (\$)	$\text{Settlement Amount}_{CP} = \sum_1^n (\text{Notional Quantity}_{TI} \times (\text{Floating Price}_{TI} - \text{Fixed Price})), \text{ where:}$ n is the number of Trading Intervals in the Calculation Period CP; and - If $\text{Floating Price}_{TI} > \\$600/\text{MWh}$, $\text{Floating Price}_{TI}$ shall be taken to be $\\$600/\text{MWh}$.

RRPPA: Illustrative Settlement Example 1



RRPPA: Illustrative Settlement Example 2

Fixed Price: \$100/MWh	Plant Capacity: 100 MW	Contract Capacity: 100 MW	Calculation Period: 1 Week (2,016 TIs)	Average DWAP: \$81/MWh	Reference Production Index (Average): 38%
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Scenario 1:

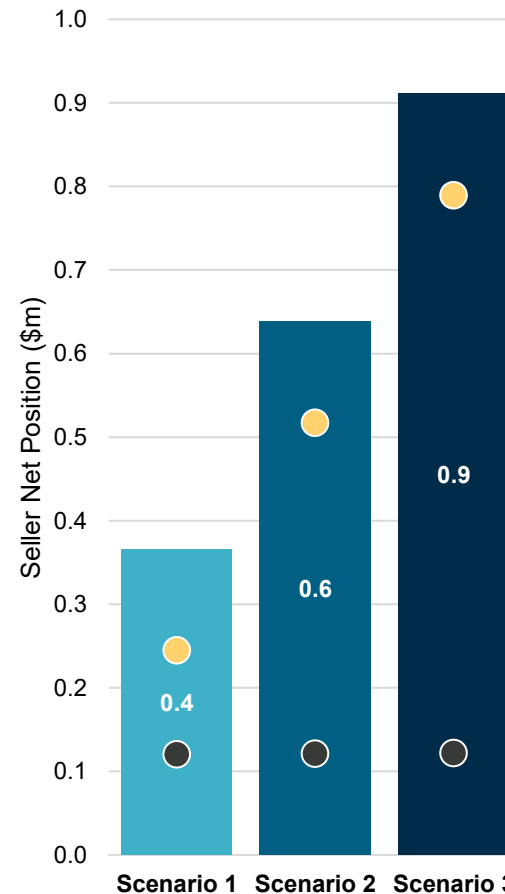
Project *underperforms* against the Reference Fleet
(i.e. volume and DWAP are 20% *lower*)

Scenario 2:

Project *equals* the Reference Fleet
(i.e. volume and DWAP *match*)

Scenario 3:

Project *overperforms* against the Reference Fleet
(i.e. volume and DWAP are 20% *higher*)



Settlement Amount is unchanged in all scenarios

= Notional Quantity × (Floating Price - Fixed Price)

= (100 MW × 5/60 × 2,016 × 38%) × (\$81/MWh - \$100/MWh)

= **\$0.12m**, paid to the Seller in all three scenarios

Key:



Seller Net Position, by scenario



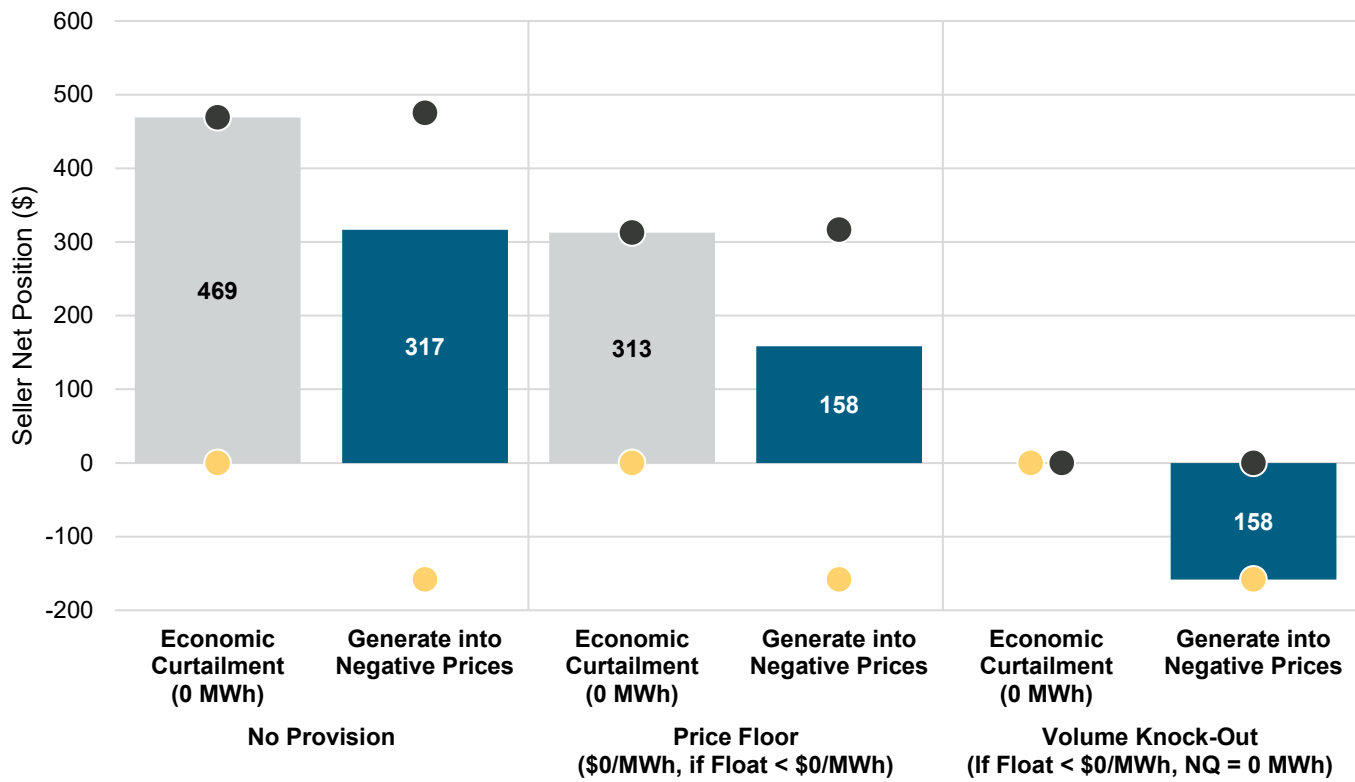
Merchant revenues



Settlement Amount, paid to Seller

RRPPA: Illustrative Settlement Example 3

Fixed Price: \$100/MWh	Plant Capacity: 100 MW	Contract Capacity: 100 MW	Calculation Period: 5 minutes (1 TI)	Floating Price: -\$50/MWh	Reference Production Index: 38%
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- Key Takeaways:**
- 1. No provision is most beneficial for Sellers, whilst the volume knock-out is most beneficial for Buyers. The Price Floor provides some potential benefits for Buyers at prices below the negative of the Fixed Price.
 - 2. Across all three options, the Seller is incentivised to minimise volumes during negative price trading intervals.

Key:

0%

38%

Seller Net Position, by scenario

● Merchant revenues

● Settlement Amount, paid to Seller

Notes:

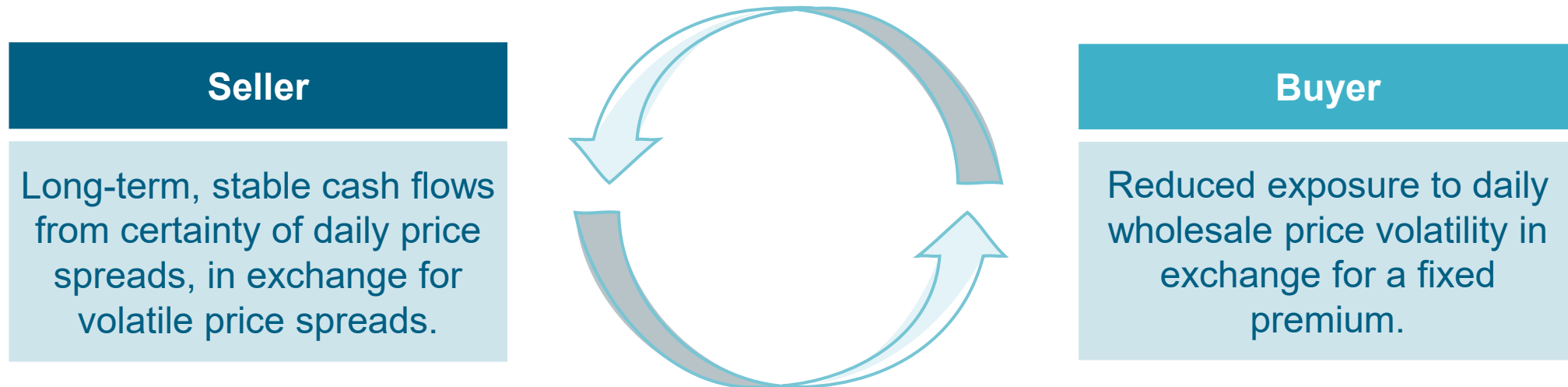
(1) As the Seller project is included in the Reference Fleet, the raw Reference Production Index will follow the project capacity factor. This explains the slight deviation in Settlement Amounts between scenarios as shown above.

(2) LGC / REGO revenue is not included in this illustrative example.



Dynamic ToD Spread Swap: Overview

The Dynamic ToD Spread Swap contracts the difference between the price in daily charge and discharge periods (the spread), which are nominated a day-ahead using residual demand forecasts¹.



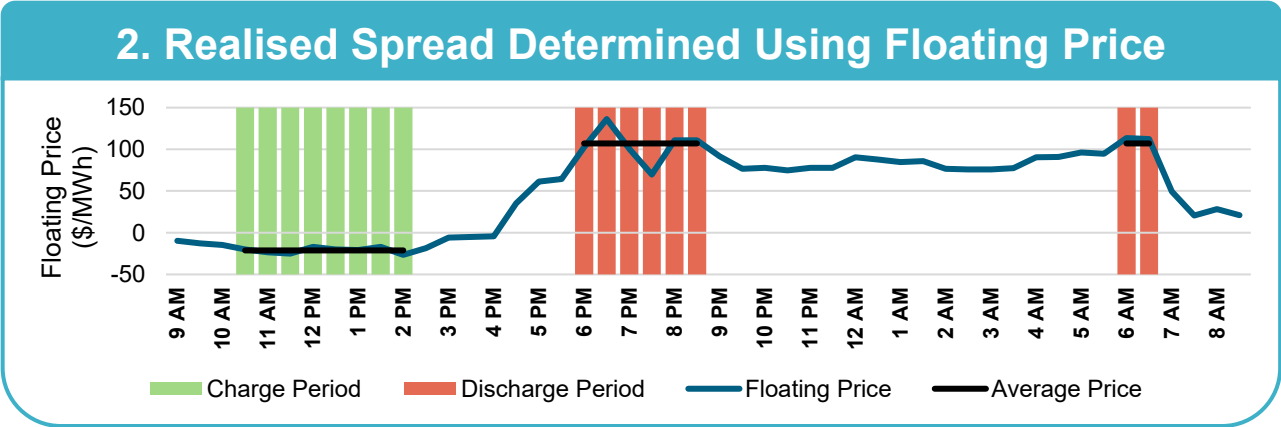
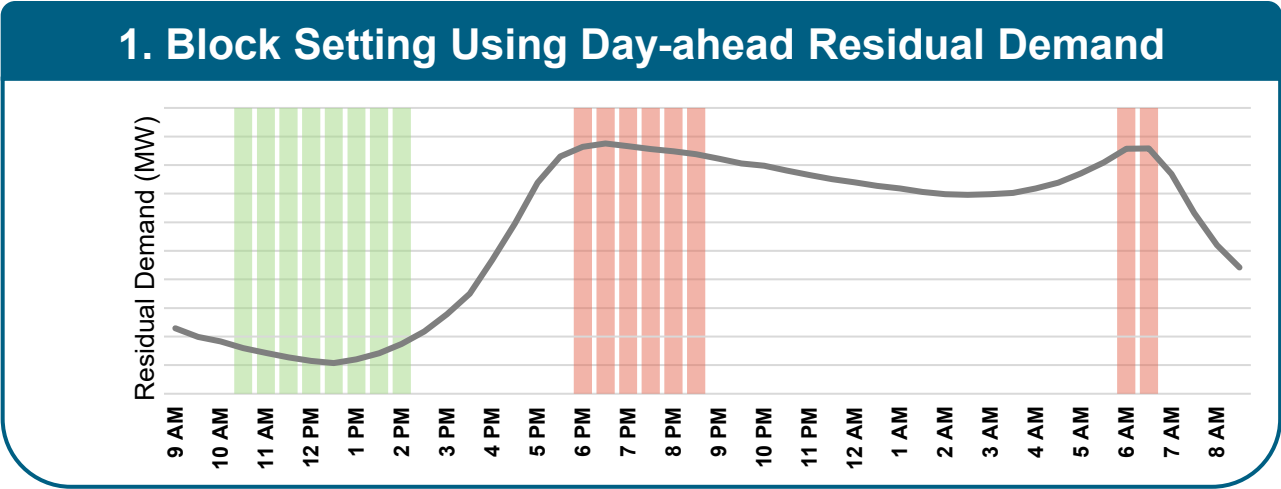
¹ *Forecast Residual Demand = Forecast Operational Demand – Forecast Solar Generation – Forecast Wind Generation*

Dynamic ToD Spread Swap: Key Terms

	Key Term	Description
Overview	Fixed Spread (\$/MWh)	The Fixed Spread is the agreed difference between the average Floating Price in the nominated Charge Period(s) and Discharge Period(s)
	Floating Price (\$/MWh)	The Spot Price set by AEMO for a Trading Interval at the Regional Reference Node.
	Contract Capacity (MW)	XX MW of capacity.
	Shaping Duration	The duration of the Charge and Discharge Periods, e.g. XX hours means both Charge and Discharge Periods are XX hours.
Settlement	Charge and Discharge Periods	The ESEM Administrator will determine Charge and Discharge Periods based on forecast Residual Demand, where: $Residual\ Demand_{TI} = Operational\ Demand_{TI} - (Forecast\ Solar\ PV\ Output_{TI} + Forecast\ Wind\ Output_{TI})$ • Charge Periods are the forecast periods of lowest residual demand in the Daily Shaping Period. • Discharge Periods are the forecast periods of highest residual demand in the Daily Shaping Period.
	Realised Spread_n (\$/MWh)	$Realised\ Spread_n = Discharge\ Price_n - Charge\ Price_n$, where: • n is a Daily Shaping Period; • $Discharge\ Price_n$ is the average Floating Price (\$/MWh) during the defined Discharge Period(s) for Daily Shaping Period n; and • $Charge\ Price_n$ is the average Floating Price (\$/MWh) during the defined Charge Period(s) for Daily Shaping Period n.
	Notional Quantity_{CP} (MWh)	$Notional\ Quantity_{CP} = Contract\ Capacity \times Shaping\ Duration \times Calculation\ Period$, where: • $Calculation\ Period$ (days) is aligned to the AEMO NEM settlement calendar and occurs weekly.
	Settlement Amount_{CP} (\$)	$Settlement\ Amount_{CP} = Notional\ Quantity_{CP} \times \sum_1^n (Realised\ Spread_n - Fixed\ Spread)$, where: • n is the number of Daily Shaping Periods in the Calculation Period CP.

Dynamic ToD Swap: Illustrative Example

Fixed Spread: \$100/MWh	Plant Capacity: 120 MW	Contract Capacity: 100 MW	Shaping Duration: 4 hours	Calculation Period: 1 Day
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3. Contract Settlement over Calculation Period

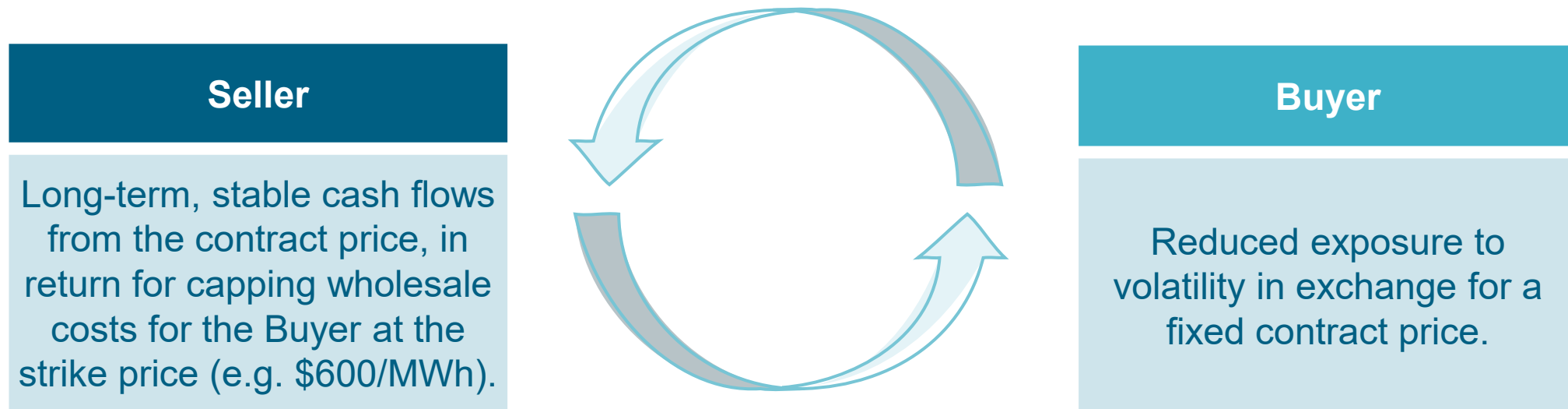
1	Realised Spread \$107/MWh – (-\$21/MWh)	\$128/MWh
2	Notional Quantity 100 MW × 4 Hours × 1 Day	400 MWh
3	Settlement Amount 400 MWh × (\$128/MWh - \$100/MWh)	\$11,200

4. Seller Net Position over Calculation Period

1	Merchant Revenue -(-\$21/MWh) × 480 MWh + \$107/MWh × 400 MWh	\$52,880
Note: Round-Trip Efficiency of ~83% assumed when charging		
2	Seller Net Position \$52,880 - \$11,200	\$41,680

\$600 Cap: Overview

The \$600 cap is hedging product that caps the amount buyers are exposed to via a swap that applies only when spot prices above the strike price (i.e. above \$600/MWh).



\$600 Cap: Key Terms

	Key Term	Description
Overview	Strike Price (\$/MWh)	The Strike Price is the Floating Price (\$/MWh) above which Cap Repayments occur.
	Floating Price (\$/MWh)	The Spot Price set by AEMO for a Trading Interval at the Regional Reference Node.
	Contract Capacity (MW)	XX MW of capacity.
	Contract Price (MW)	\$XX /MW. The agreed amount that the Seller will receive for the Notional Quantity.
Settlement	Calculation Period (hrs)	The Calculation Period (hrs) shall be aligned to the AEMO NEM settlement calendar and occur weekly.
	Notional Quantity (MWh)	The quantity of electricity (MWh) that applies for the Calculation Period. <i>Notional Quantity = Contract Capacity × Calculation Period</i>
	Contract Premium (\$)	<i>Contract Premium = Notional Quantity × Contract Price</i> The Buyer must pay the Seller the Contract Premium for each Calculation Period.
	Cap Repayment Amount_{CP} (\$)	<i>Cap Repayment Amount_{CP} = Notional Quantity × $\sum_1^n (\max(0, \text{Floating Price}_{TI} - \text{Strike Price}))$</i> , where: n is the number of Trading Intervals TI in the Calculation Period CP. The Seller must pay the Buyer the Cap Repayment Amount in each Calculation Period.
	Settlement Amount_{CP} (\$)	<i>Settlement Amount_{CP} = Contract Premium – Cap Repayment Amount_{CP}</i>



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