Electricity contract co-design

Workshop 2 discussion materials

24 June 2026

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Acknowledgement of Country

We acknowledge the Traditional Owners of Country throughout Australia, and recognise their continuing connection to land, waters and culture. We pay our respects to their Elders past and present

Source: *Gadigal Country – Here and Now* by Dunghutti and Biripi Artist, Wanita Lowe, commissioned by L.E.K. as part of our Reflect RAP

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Competition and Consumer law obligations and information sharing

The Competition and Consumer Acts prohibits anti-competitive conduct, including:

Cartel conduct	Concerted practices
Contracts, arrangements or understandings between competitors to fix prices, restrict supply or acquisition of goods/services, allocate customers, suppliers, territories or rig bids	Other cooperation between competitors with the purpose, effect or likely effect of substantially lessening competition

Substantially lessening competition

Any other contracts, arrangements or understandings which have the purpose, effect or likely effect of substantially lessening competition	Any conduct by a company with market power which has the purpose, effect or likely effect of substantially lessening competition

Under no circumstances may Working Group members share competitively sensitive information with one another. As a general rule, if a Working Group member considers information to be sensitive from a commercial perspective and the information is not publicly available, it should not be discussed during Working Group meetings

Source: ASL – Contract Co-design Working Group – Meeting Communication Protocols

Principles for how we will work together as a team

Public Purpose Mindset

- Bring your experience and perspectives, but also step outside of them to consider the effect across the market and the grid
- Act in line with the National Electricity Objectives

Ownership

- The Working Group, not the Convening Group, owns the recommendations
- We're looking for this group to lean in and help drive the process
- Decisions should aim to reach consensus and represent all sides of the market

Constructive Participation

- A workable, imperfect, but standardised product beats many bespoke ones
- Constructive compromise is key
- Disagreement should always be clear and civil
- **Opinions without sufficient data to support them will not be treated as equal to evidence-backed perspectives**

Openness

- Chatham house rules apply – you can share externally but do not attribute. Where possible we will agree common talking points for what is shared across the industry
- We plan to invite participation of other industry representatives when their input would be valued

Source: NEM review contracts co-design group pilot – Workshop 1

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Workshop 2 will focus on an exploring contract features and risks

1 Workshop 1: Foundations

- Establish how we are going to work as a team
- Ensure Working Group participants have a strong foundational understanding of potential contract models
- Define required analysis to drive choices

2 Workshop 2: Contract features

- Workshop contract options and assess against evaluation criteria
- Identify and articulate pros / cons of different alternatives
- Determine any further analysis required

This Workshop

3 Workshop 3: Contract selection

- Re-visit evaluation of contract options with any additional evidence
- Determine 'short list' of preferred contract options

4 Workshop 4: Implementation planning

- Workshop and align on preferred implementation approach
- Align on a high-level implementation roadmap

5 Workshop 5: Recommendations & final report

- Align on final report recommendations
- Issue final report

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Objectives for Workshop 2

Workshop 2 aims to make substantive progress towards aligning the Working Group on a preferred set of ESEM contract designs. This will be achieved by:

1. Beginning to consider how contracts work as portfolios, including from the perspective of how contract buyers build hedge positions
2. Explicitly focusing the range of contracts under consideration, based on Workshop 1 discussion and Working Group feedback
3. Discussing risks and risk allocations attached to each contract – including the availability of options to manage residuals
4. Explicitly assessing contracts against the agreed criteria
5. Defining gaps in the analytical base

Workshop 2 agenda

Start time	Duration	Agenda item
8:45-9:00am	15 mins	Arrival and set up
9:00-9:45am	45 mins	Introduction and recap of industry engagement and feedback
9:45-10:30am	45 mins	Demand-side hedging
10:30-10:40am	10 mins	*Morning break*
10:40am-12:00pm	80 mins	Bulk supply contracts – risks, risk allocations and managing residuals
12:00-12:40pm	40 mins	*Lunch*
12:40-2:00 pm	80 mins	Shaping contracts – risks, risk allocations and managing residuals
2:00-3:00pm	60 mins	Firming (cap) contracts – risks, risk allocations and how the contract would be used
3:00-3:20pm	20 mins	Contract evaluation survey
3:20-3:30pm	10 mins	*Afternoon break*
3:30-4:10 pm	40 mins	Contract evaluation session
4:10-5:00 pm	50 mins	Actions and required analysis, next steps and wrap-up

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Workshop 2 is framed around considering a target set of 10 contracts

Type	Contract	How it works
Bulk supply	Reference ex-post revenue swap	Swap a fixed revenue ($/MW) for a floating revenue ($/MW) of a generic 'reference' plant(s), determined ex-post
	Reference ex-post DWA swap	Swap a fixed strike price ($/MWh) for a floating dispatch weighted price ($/MWh) of a generic 'reference' plant(s), determined ex-post
	Time-of-day (ToD) block price swap	Swap a fixed strike price ($/MWh) for a floating market price ($/MWh) during a given hourly block, over a set of blocks spanning the day
Shaping	Time of day block spread (nominated blocks)	Time of day block spread, with nominated time blocks (e.g., year ahead)
	Evening peak block	Time of day block swap for a fixed evening period (spread vs $0 floor)
	High-low contiguous spread	High-low spread based on the highest contiguous time block
Firming	Cap, $200 strike	Seller pays the buyer the amount by which the spot price exceeds the strike price in each interval, in return for an upfront premium A higher strike price aligns with a lower upfront premium price as the product is called less often and the margin to the spot price is smaller
	Cap, $300 strike	
	Cap, $600 strike	
	Cap, $1500 strike	

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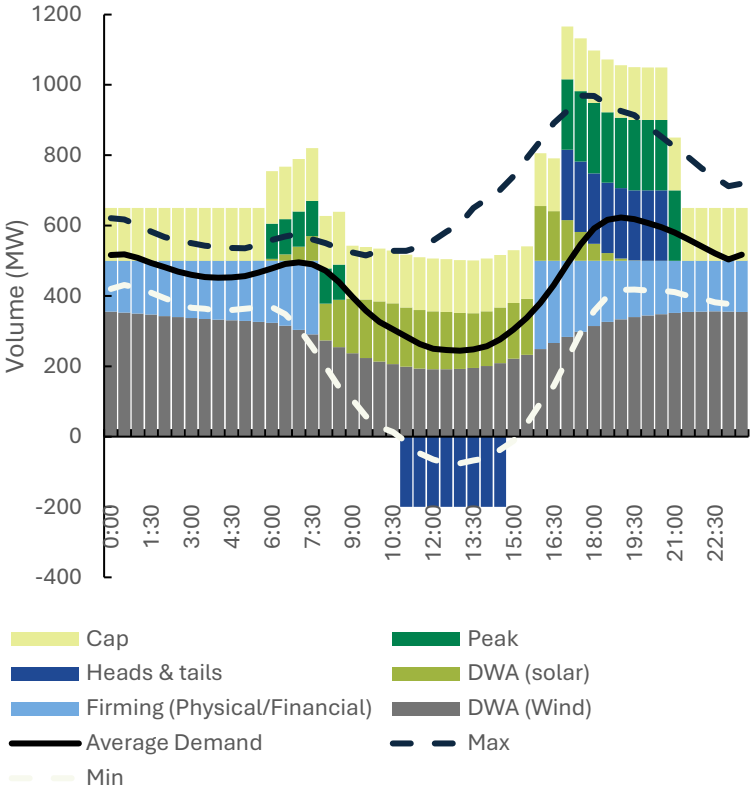
Some groupings of contracts form complementary ‘sets’

	Existing products	Time-of-day blocks	Ex-post
Features	Intermediaries sign long-term developer contracts of choice (e.g. PPAs, virtual tolls), which can be restructured into baseload swaps/super peak/cap contracts	Swaps for standardised blocks of contiguous hours (e.g. mornings, day, evening, night) spanning all 24hrs in a day. Capped versions for bulk energy selling to the ESEM Other building blocks may evolve as needed (e.g. block spreads, time-limited caps or floors)	Tech-specific DWA swaps for wind and solar. Heads and tails spreads to cover the lowest/highest price hours of the day. Caps, or TWA/DWA spreads, to firm variable renewables Intermediaries combine these products into load-weighted or baseload swaps for buyers
Key contracts	**Baseload (TWA) swap** **Morning and evening peaks** **Caps**	**ToD swaps (capped / uncapped)**	**Ex-post DWA or Revenue swaps** **High-low spreads** **Caps & DWA/TWA spreads**

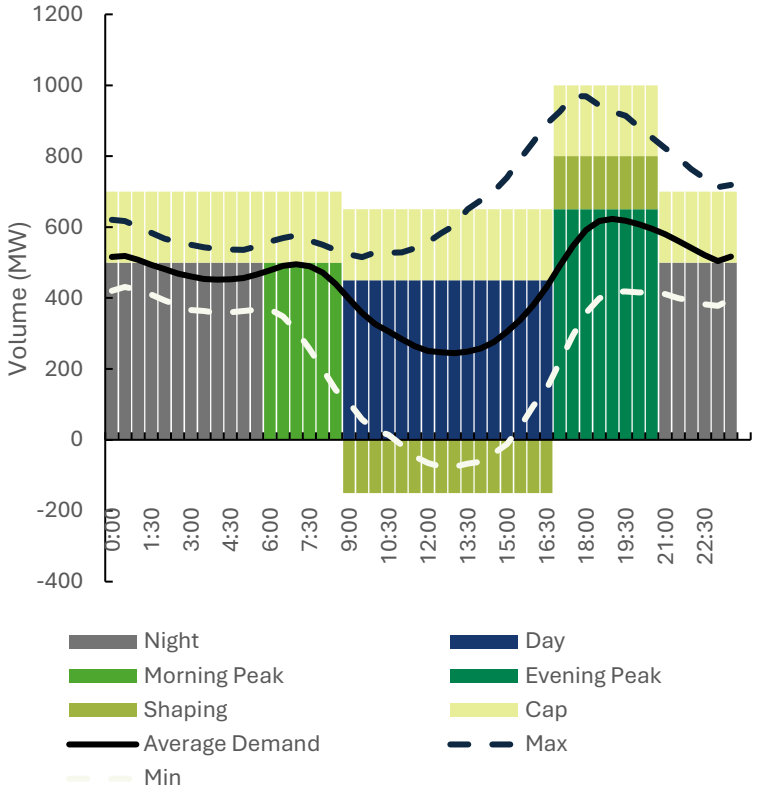
Source: NEM review contracts co-design group pilot – Workshop 3 Pre-read materials

Different sets can provide coverage of a retail book or large energy load

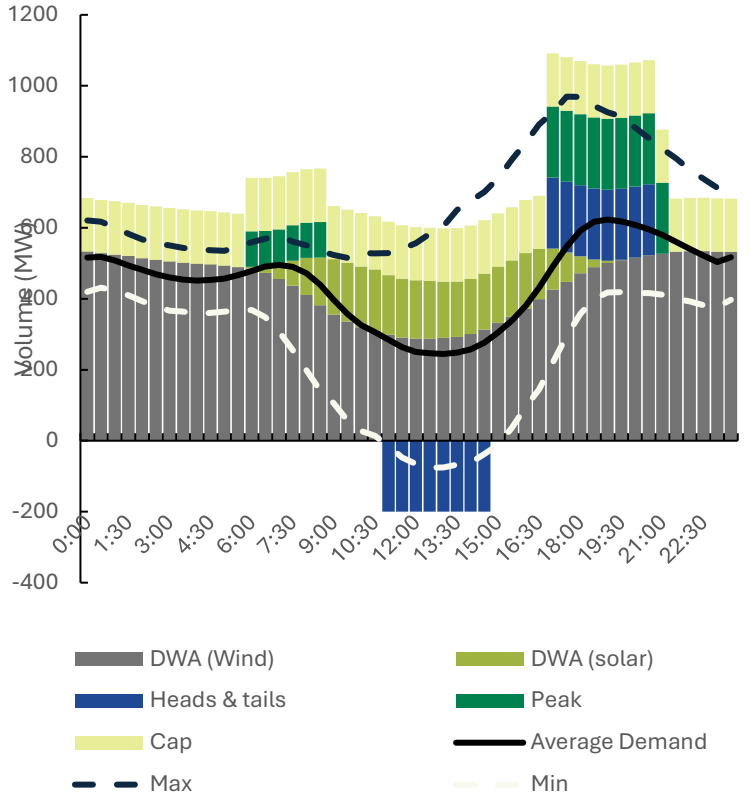
Existing products



Time-of-day blocks



Ex-post (DWA)



Source: NEM review contracts co-design group pilot – Workshop 2 Pre-read materials

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Workshop 2 is framed around considering a set of three bulk energy contracts

	Reference ex-post revenue swap	Reference ex-post DWA swap	Time-of-day (ToD) block price swap
Description	Swap a fixed revenue ($/MW) for a floating revenue ($/MW) of a generic "reference" plant(s), determined ex-post	Swap a fixed strike price ($/MWh) for a floating dispatch weighted price ($/MWh) of a generic "reference" plant(s), determined ex-post	Swap a fixed strike price ($/MWh) for a floating market price ($/MWh) during a given hourly block, over a set of blocks spanning the day
Risk	Hedge against systematic risk for wind/solar **shape** and **volume.** Limited hedge against idiosyncratic risk	Hedge against systematic risk for wind/solar **shape** but **not volume** Limited hedge against idiosyncratic risk	Limited hedge against systematic or idiosyncratic risk, subject to effective hedging profile set ex-ante
Seller incentives	Match or beat the **revenue** ($/MW) of the generic reference plant on a $/MW basis	Match or beat the **dispatch weighted price** ($/MWh) of the generic "reference" plant, while **meeting contract volume**	Match or beat **contracted volume** (MWh) during periods **where prices are above $0/MWh**

Source: NEM review contracts co-design group pilot – Workshop 2 Pre-read materials

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Bulk energy contract options provide different levels of hedge precision, and face different liquidity challenges

Hedge precision and liquidity are a central trade-off for all the bulk energy contract types – the more closely a product tracks a plant's revenue, the narrower and less liquid it becomes

Every structure leaves residual risks with the seller, and mitigation levers differ in reach and effectiveness

- Ex-post products concentrate residual risk in idiosyncratic plant performance and in reference-set design; residuals can be layered off via other derivatives, at added cost and complexity
- Capped time-of-day products limit exposure to extreme market conditions and Dunkelflaute, but provide a weaker hedge at times systemic stress is greatest

Measured effectiveness varies by technology, region and product, and rests on modelling choices that warrant further testing

Source: NEM review contracts co-design group pilot – Workshop 3 Pre-read materials

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We will break out into two groups for this exercise

Key questions on bulk energy contract risks:

1. For this contract, what are the key risks to the electricity supplier? For the buyer? For others? Are there any of these risks that would be better to be carried by a different party (please circle)?
2. Are there existing approaches that could be used to mitigate these risks (e.g., through derivatives, contract recycling or other hedging products)? What are the most material residual risks?
3. What analysis or other evidence would help you to better understand or evaluate these risks?
4. How do risks impact the suitability of each contract structure for the ESEM bulk energy contract?

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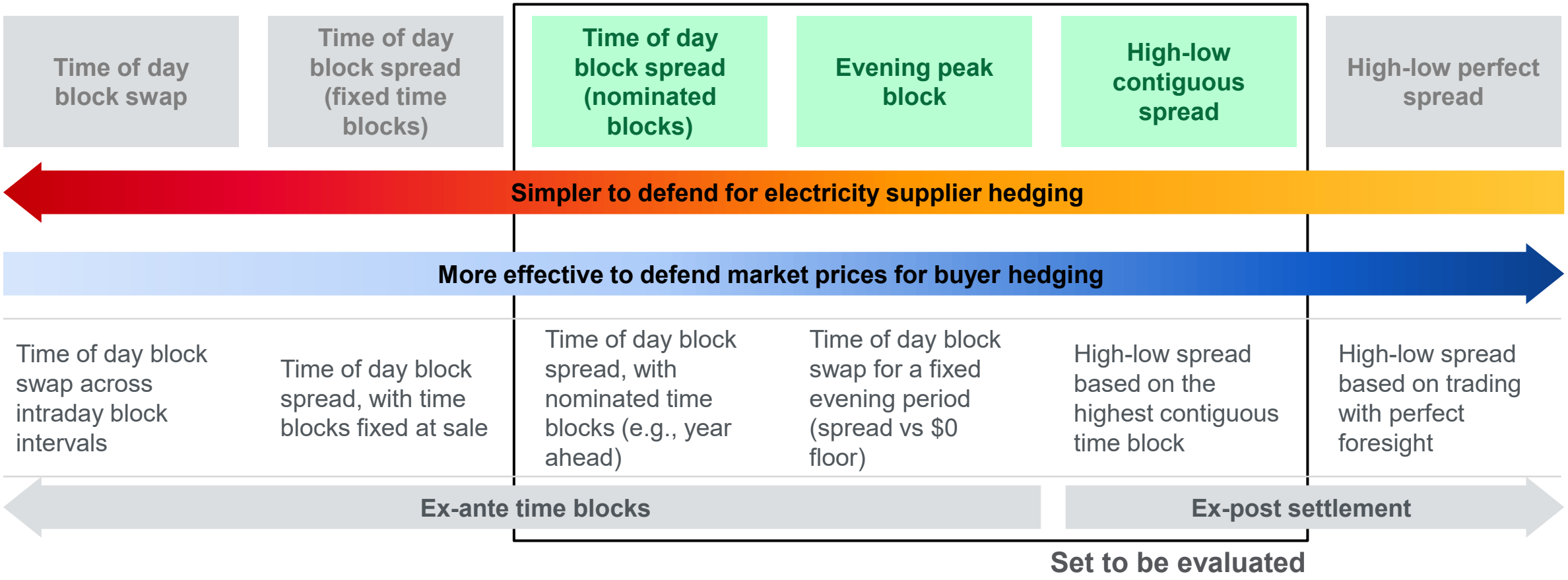
Shaping will focus on three contracts that balance buyer and seller risks

The selection of these three contracts reflects the view that contracts will need to avoid the edge cases in this spectrum of choices to ensure the contracts are able to meet the needs of both suppliers and the demand-side



Shaping products do not suit both sides equally – the shortlist trades supplier defend-ability against how closely buyers can track market prices

The three shortlisted products sit mid-spectrum – simple-to-defend block structures for suppliers at one end, price-tracking ex-post products for buyers at the other, with the pure block swap and perfect spread edges excluded

The core trade-off is between simplicity and predictability vs price-tracking

- Reflecting actual prices: high-low products best track the decade-long growth in spreads
- Stability over time: the evening peak has been very consistent, but the cheapest hours have migrated from overnight to midday
- Liquidity and simplicity: finer block granularity sharpens the hedge but thins liquidity; block products have traded thinly to date

Residual risk can be managed, but levers differ for sellers and buyers

Source: NEM review contracts co-design group pilot – Workshop 3 Pre-read materials

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We will break out into two groups for this exercise

Key questions on shaping contract risks:

1. For this contract, what are the key risks to the electricity supplier? For the buyer? For others? Are there any of these risks that would be better to be carried by a different party (please circle)?
2. Are there existing approaches that could be used to mitigate these risks (e.g., through derivatives, contract recycling or other hedging products)? What are the most material residual risks?
3. What analysis or other evidence would help you to better understand or evaluate these risks?
4. How do risks impact the suitability of each contract structure for the ESEM shaping contract?

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Firming (cap) discussion will focus on contracts with different strike prices

	$200 strike	$300 strike	$600 strike	$1,500 strike	$5,000 strike
Price rationale	Reduced cap price to cover under-cap stress	Established cap price strike convention	Current APC once CPT is reached	Aligns with ave. spot price to trigger CPT in mid-2030s	High price, with 'rare' trigger assumption
Premium	Highest; approaches a swap	Very high; approaches a swap as prices (and CPT) increase	High; captures 'normal' scarcity events	Low; with material discount due to CPT events	Very low, with low residual tail risk after accounting for CPT
Skew due to CPT	Lowest	Low	Moderate	High	Very high
Seller risk	Highest; expect frequent, large payouts and outage risk, but high premiums	High; expect frequent, large payouts, high outage risks and margin calls	Moderate; no obligation during administered pricing	Low; tail risk but CPT removes some events	Lowest; rare, isolated spikes with significant protection via CPT
Buyer risk	Top premium for near-certain cover, uncapped loads, counterparty credit risk	High premium, uncapped load, counterparty credit risk	Moderate premium, strike aligned with APC	Wrong-way knock-out – major events likely to negate cover via CPT	False security, covers isolates spikes only

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The choice of the cap strike price relates to the type of generation to be supported, acceptable levels for premium, and interoperability with the CPT

- **The cumulative price threshold (CPT) tallies the rolling sum of 5-min spot prices over the trailing 7 days. If the threshold value is breached, AEMO pins spot at the administered price cap (APC) of $600/MWh**
  - The APC remains in place until prices eased
  - The CPT is sized in terms of hours at the market price cap – currently 7.5 hours but moving to 8.5 hours by 2027
- **A cap is a strip of call options, written relative to the electricity market spot price**
  - Each option pays the excess of the spot over the strike price in each interval
- **Once the CPT is breached it neutralizes the option**
  - Spot falls to $600/MWh, capping payouts above the APC and flooring those below
- **Higher strikes pay only in the severe scarcity, which Is likely to trip the CPT**
  - The option is likely to 'knock out' just as it gains value

Strike	How does the contract operate?	What type of suppliers might use it?
$200 or $300	• Broad price insurance which gets closer to a swap as the strike price decreases	• Reliable, flexible plant running during most elevated hours: CCGT, hydro, long-duration batteries
$600	• Hedges 'normal' scarcity up to the Administered Price Cap, then switches off if the CPT is reached	• Gas peakers (OCGT) with marginal cost near strike
$1,500	• Insures against acute, non-sustained scarcity only, with sustained events mitigated but the CPT	• High-cost peakers (liquids, diesel) • Demand response with high capacity for responsiveness

Low strikes provide the broadest, most reliable cover and the highest premium but the heaviest seller risk
High strikes are cheaper tail bets that the CPT largely neutralises for both sides

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The cap's strike price materially defines its role in hedging

The strike price defines the role of caps within the ESEM contract set

- Low strike prices (e.g., <$300/MWh) behave increasingly like a swap, providing near-certain cover for the highest premium. Sellers face risks from outages and margin calls
- $300/MWh is the established, exchange-listed and deeply liquid firming convention
- $600 aligns with the APC and carries no seller obligation during administered pricing, making it the live alternative
- High strike prices (e.g., >$1,000) are largely neutralised by the CPT; they are cheaper but the CPT neutralises the buyers' cover in major events

The choice of cap strike price may relate to the choice of shaping product

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We will break out into two groups for this exercise

Key questions on shaping contract risks:

1. For this contract, what are the key risks to the electricity supplier? For the buyer? For others? Are there any of these risks that would be better to be carried by a different party (please circle)?
2. Who would use this contract? What types of new supply would this contract support? Would this contract be useful for retailers and large users? Are there any other features this contract should include?
3. What analysis or other evidence would help you to better understand or evaluate these risks?
4. How do risks impact the suitability of each contract structure for the ESEM firming contract?
5. Are there other features this contact should include?

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In Workshop 1, we refreshed the set of criteria to use for evaluating contracts

Fungibility is not included in criteria because it is embedded as a requirement under the Contract Co-design Working Group Terms of Reference

Criteria	What it means
Efficient at allocating risks	• Assigns risks to buyers and sellers based on who is best placed to manage, and thus preserve incentives for optimal investment/operational decisions
Bankable	• Supports reasonable financing terms for new projects
Operationally achievable	• Can be readily implemented in a real-world setting • Performs a materially useful role in the market – not just the best choice or available options
Complementary within a set of ESEM contracts	• The contract works as part of a set of standard contracts being considered and sufficiently covers risks when used together in the set – “no gaps / no overlaps” • The contract set can sufficiently support portfolio risk management for a retailer or large user
Adaptable to the future market	• Will continue to perform as intended as market conditions change in future
Simple to value	• Sellers and buyers can confidently determine a price to ascribe to the contract • Contracts that require a point of view on a greater number of parameters, are more conditional or depend on variable that are hard to estimate can be more challenging to value accurately
Attractive for both sellers and buyers	• The contract will support the entry of new electricity services and be attractive to energy buyers’ seeking to manage portfolios

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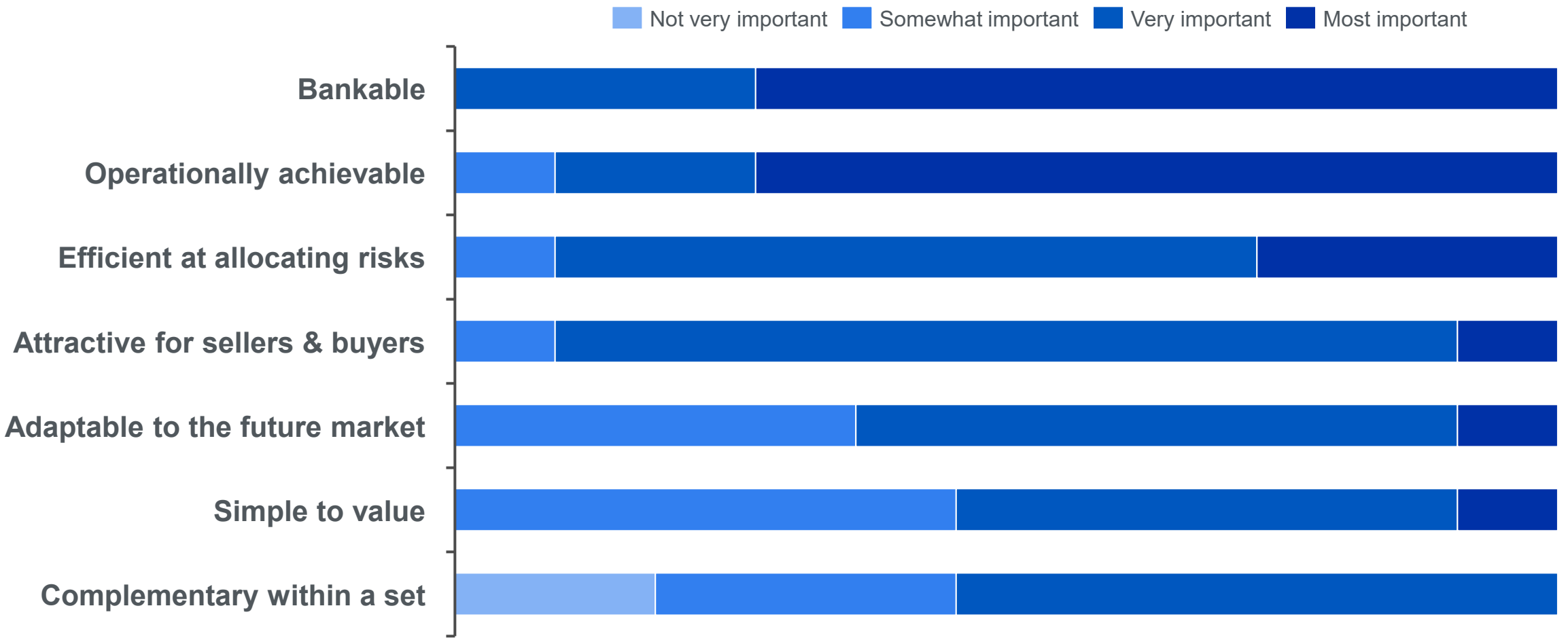
In a survey of the Working Group, all evaluation criteria were affirmed as important but bankability and being operationally achievable were the most important factors



Suggestions for additional analysis that may be helpful to inform Workshop 3

Bulk Energy	Shaping	Firming
• Cash flow analysis comparing contracts to run-of plant PPA • Bankability analysis • Construction of the reference index – options for how the index is constructed, trade-offs and issues	• Cash flow analysis • Bankability analysis • Gaming considerations - how to minimise the potential for price or market distortion? • Understanding secondary markets' role (e.g., ability to transform into a virtual toll)	• Cash flow analysis • Pricing analysis • Impact on technology types

- Develop a 'straw person' template for target contracts to see key features and identify gaps
- Clarify 'guardrails' for contract design and issues both within and outside the terms of reference for the contract co-design process

Appendix – Activity Worksheets

Name:

Bulk Energy

What are the most important risks for each contract type?

Bulk supply contracts, 10:40am

	Reference ex-post revenue swap	Reference ex-post DWA swap	Time-of-day block price swap
Electricity supplier			
Electricity buyer			
Other parties			

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Name:

Bulk Energy

What approaches are available to mitigate risks?

Bulk supply contracts, 10:40am

	Reference ex-post revenue swap	Reference ex-post DWA swap	Time-of-day block price swap
Approach to managing risk			
Residual risks			
Additional analysis or evidence?			

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Name:

What are the most important risks for each contract type?

Shaping ★

Shaping contracts, 12:40pm

	Time of day block spread (nominated blocks)	Evening peak block	High-low contiguous spread
Electricity supplier			
Electricity buyer			
Other parties			

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Name:

What approaches are available to mitigate risks?

Shaping ★

Shaping contracts, 12:40pm

	Time of day block spread (nominated blocks)	Evening peak block	High-low contiguous spread
Approach to managing risk			
Residual risks			
Additional analysis or evidence?			

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Name:

What are the most important risks for each contract type?

Firming ★

Firming contracts, 2:00pm

	$200 strike	$300 strike	$600 strike	$1,500 strike
Electricity supplier				
Electricity buyer				
Other parties				

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Name:

Who would use each contract type?

Firming 

Firming contracts, 2:00pm

	$200 strike	$300 strike	$600 strike	$1,500 strike
What new supply could it support?				
Does it support demand-side?				
Any other features it should have?				
Additional analysis or evidence?				

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