TECHNICAL WORKING GROUP

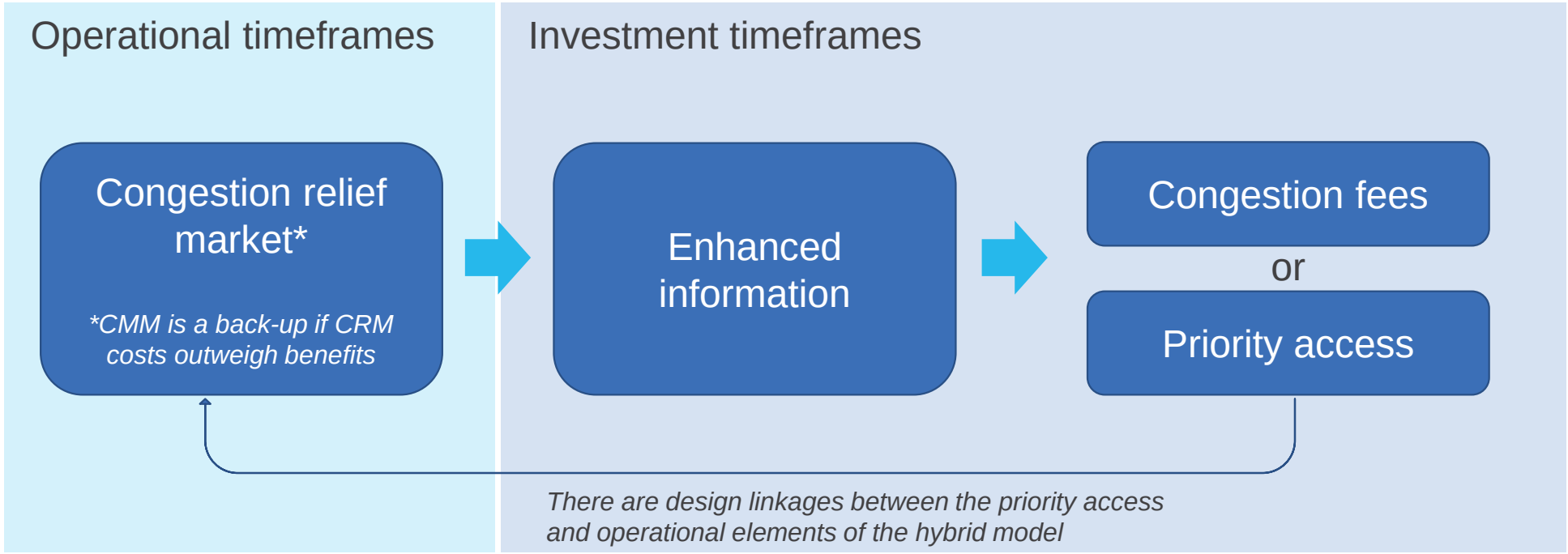
ENERGY SECURITY BOARD

13 OCTOBER 2022

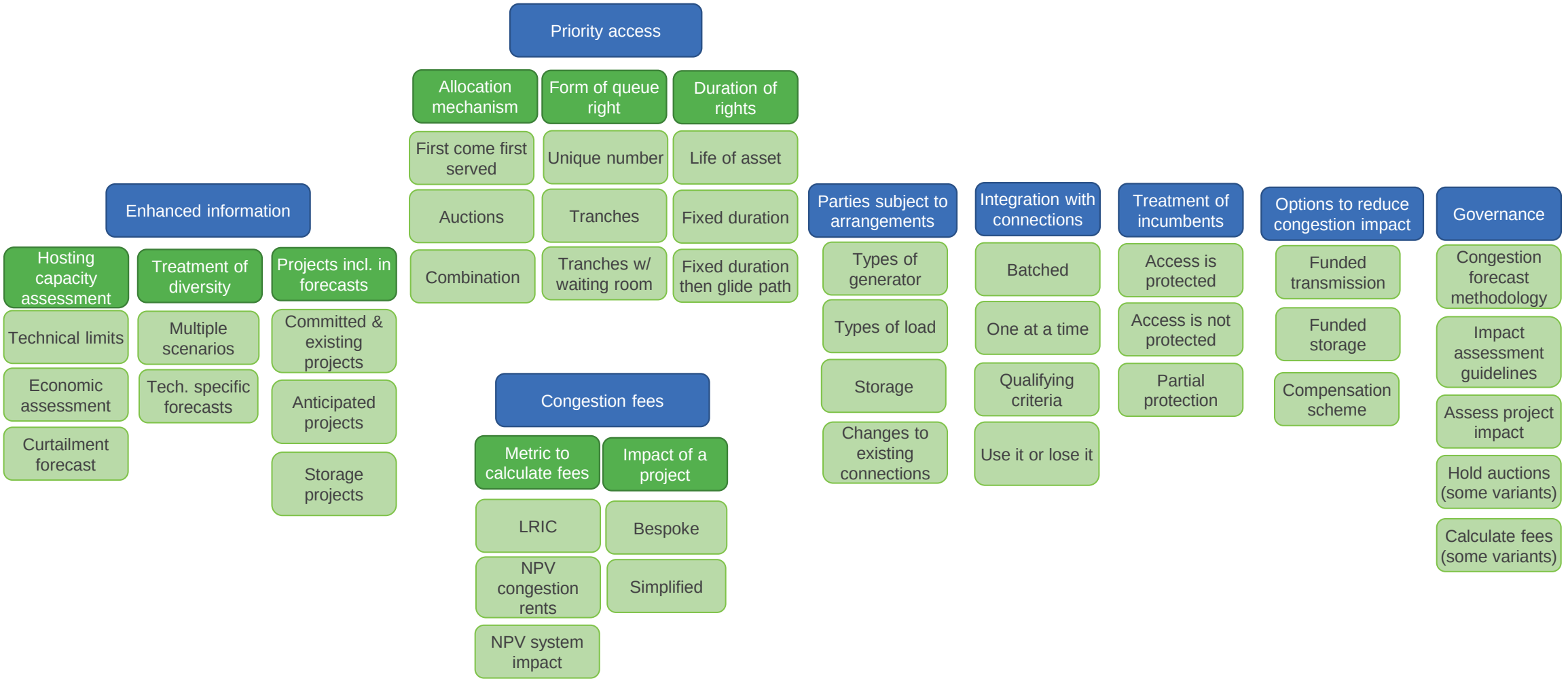
AGENDA

Topic	
Welcome, objectives and agenda	
Approach to Directions Paper – working paper for discussion	
Calibrating the scheme to balance the interests of new entrants and incumbents	*Mural exercises*
Options to reduce congestion impact of projects	
Interactions with the connections process	
Treatment of out-of-merit generators and scheduled load	
Next steps	

CORE ELEMENTS OF HYBRID MODEL



DESIGN CHOICES – INVESTMENT TIMEFRAMES



DESIGN CHOICES – OPERATIONAL TIMEFRAMES

Access allocation

Allocation of congestion risk

Congestion risk is allocated according to the generators' contribution factor to that constraint. It can lead to higher revenue volatility and investment uncertainty.

- Do nothing
- Introduce the TQM
- Round contribution factors in the energy market

Treatment of out-of-merit generators and loads

Wealth transfers to out of merit generators and scheduled load. Access to in-merit generators is diluted compared to status quo.

- Do nothing
- Bidding guidelines
- Automatically exclude based on logic rules
  - Exclude comparing CRM bid vs RRP
  - Exclude comparing estimated costs vs RRP
  - Exclude comparing nominated cost vs RRP
  - Exclude from access to RRP (scheduled load only)

Variant: Apply energy constraints for energy limited plant

Variant 3.ii: Nominate a strike price for energy limited plant

Calculation of RRP

Choice of RRP

RRP based on access dispatch can be distorted by bidding to the market price floor and creates a new basis risk.

- RRP based on access dispatch
- RRP based on final physical dispatch including CRM deviations

Interconnectors access

It is proposed that interconnectors get analogous rights under CRM to status quo i.e. Interconnectors get sole access on pure inter-regional constraint, junior access on hybrid constraints and clamping avoids interconnector access having negative value

- Pay$ = IC access dispatch x inter-regional price difference
- Apply clamping rules to access dispatch
- No clamping applied to physical dispatch

For 'interconnectors access', these are internally consistent design choices rather than alternative model options.

MURAL EXERCISE

Calibrating the scheme to balance the interests of new entrants and incumbents

Previous TWG discussions indicated that a significant portion of the group supported grandfathering, however, when we proposed a model that included grandfathering, it received little support.

Would the following measures change TWG members perspectives?

1. Queue positions are limited in duration – eg 10 years.
2. Incumbents are allocated queue positions for less than their full capacity
3. Incumbents do not receive free queue positions, instead they must purchase them.
4. Queue positions expire in accordance with the generators notice of closure
5. The amount of congestion faced by priority queue position holders gradually increases over time, in line with the efficient level of congestion in the power system.

MURAL EXERCISE

Options to reduce the congestion impact of a project

1. Should the ESB introduce measures to recognise generator-funded shared transmission within the access regime?
2. Should the ESB introduce measures to recognise generator-funded storage within the access regime?
3. Should generators have the option to accept reduced access in return for a reduced congestion fee?

MURAL EXERCISE

Interactions with the connections process

1. What criteria should a connection applicant be required to meet in order to qualify to receive an offer for a connection fee/queue position?
2. How should we manage multiple simultaneous connections?
3. Should use it or lose it provisions apply? How long should the right apply for before it expires?

MURAL EXERCISE

Previous TWG sessions have analysed the potential wealth transfers arising in the energy market as a result of the introduction of the CRM, which would not be incentivised in today's market. Out-of-merit issues relate to…

… generators (including storage as a generator)

Contribution factor	Merit position	Bidding incentives $/MWh		
		Today's energy market	Future energy market	Future CRM
Positive causing congestion	In-merit	-$1000	-$1000	at cost
	Out of merit	at cost	-$1000	at cost

- the generator's costs are greater than the RRP for a particular dispatch interval (RRP < cost)
- the generator has a positive contribution factor (LMP < RRP)

An "out-of-merit" generator can secure financial gain through its access to the RRP in the energy market, despite not wanting to physically dispatch.

… scheduled load (including storage acting as load)

Contribution factor	Merit position	Bidding incentives $/MWh		
		Today's energy market	Future energy market	Future CRM
Negative causing congestion	In-merit	$15,000	$15,000	at cost
	Out of merit	at cost	$15,500	at cost

- the load's willingness to pay (WTP) is *less* than the RRP for a particular dispatch interval (*WTP < RRP)*
- the load has a negative contribution factor (RRP < LMP)

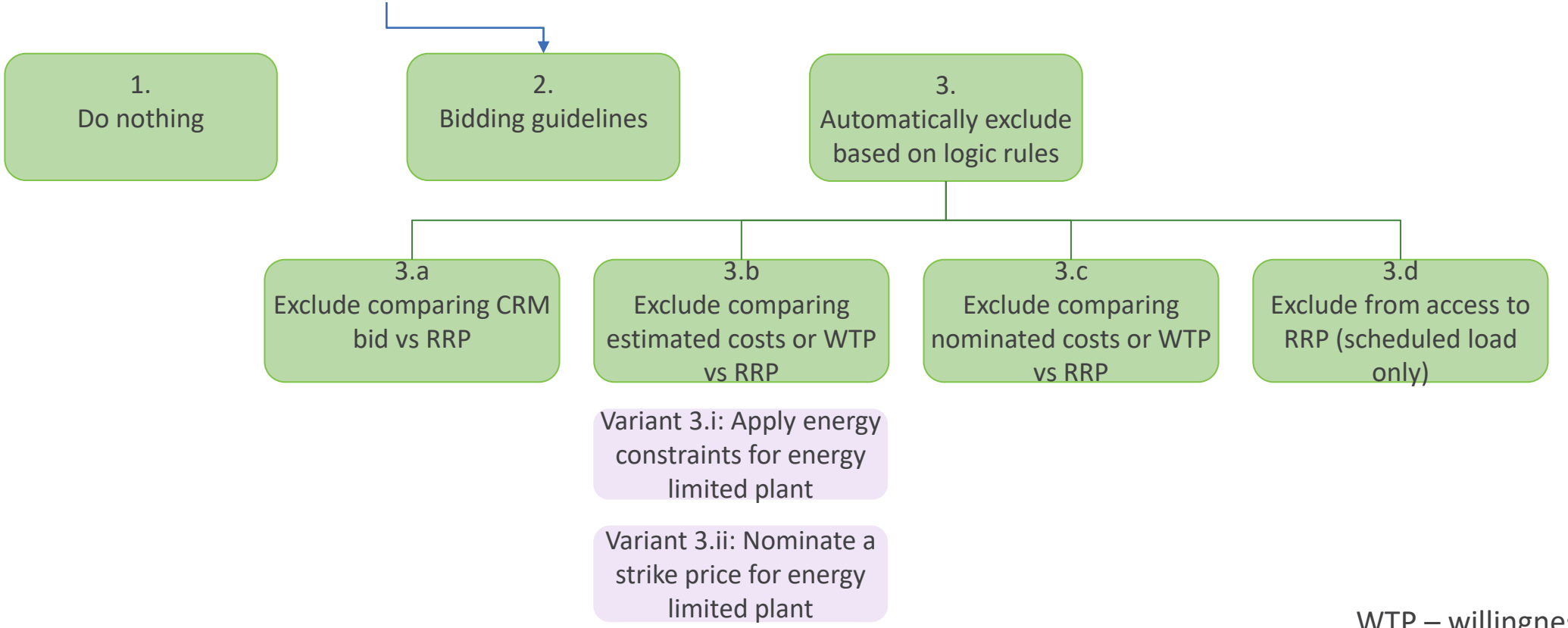
An "out-of-merit" load can secure financial gain through its access to the RRP in the energy market, despite not wanting to physically consume.

MURAL EXERCISE

Modify the bidding guidelines to prohibit out-of-merit bidding to gain access.

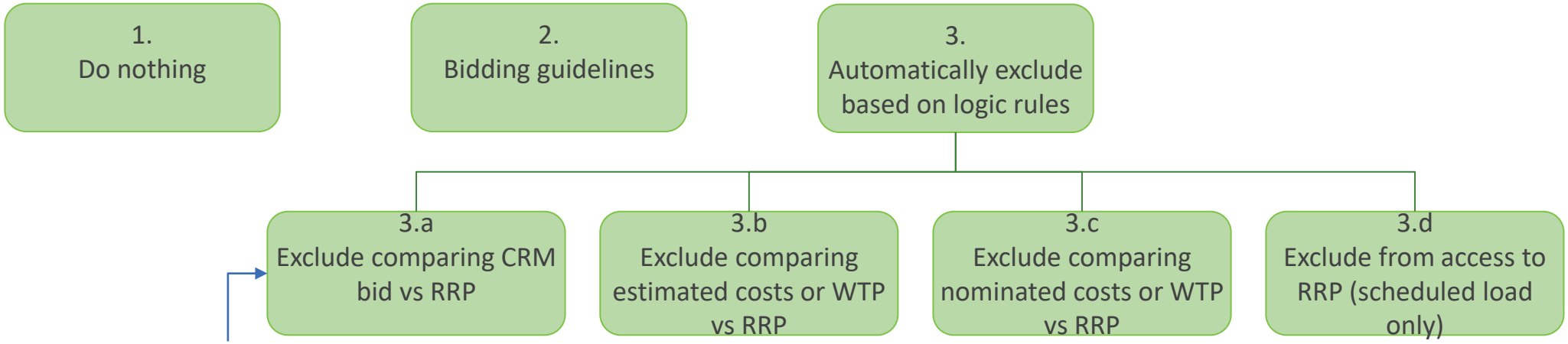
Bidding behaviour could be identified with reference to a combination of data points e.g. historical bidding record, comparison of bids into the energy market and CRM, inferred costs or inferred willingness to pay.

The AER would be responsible for monitoring bidding to identify anomalies.



WTP – willingness to pay

MURAL EXERCISE



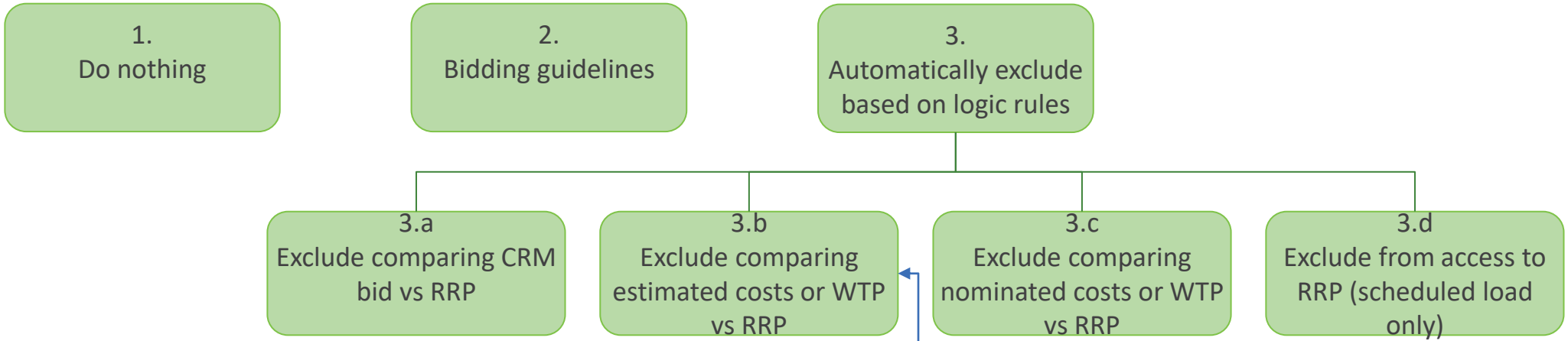
For generators, this refers to *CRM bid > RRP*. For load, this refers to *CRM bid < RRP*.

It is implicitly assumed that generators and load bid at or close to cost in the CRM i.e. the CRM bid is a proxy for cost or the willingness to pay.

Variant 3.i: Apply energy constraints for energy limited plant

Variant 3.ii: Nominate a strike price for energy limited plant

MURAL EXERCISE



e.g. a 100 MW, 2 hour battery can secure access to the RRP at its full output for 2 hours. Once exhausted, it can restore its access level by charging as a load.

e.g. a 'strike price' is nominated, say $300/MWh, similar to an OTC cap contract. The plant has access to RRP whenever the RRP is greater than the strike price.

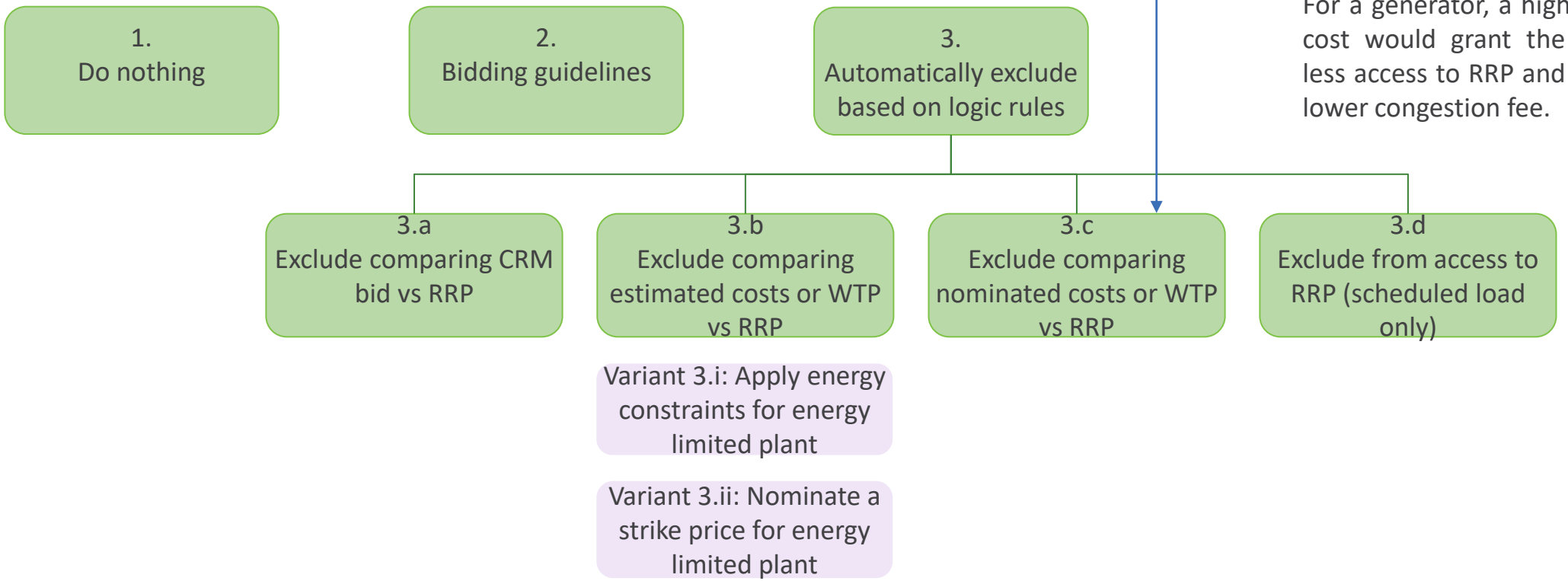
Variant 3.i: Apply energy constraints for energy limited plant

Variant 3.ii: Nominate a strike price for energy limited plant

Costs could be:

- estimated for generation operational/ production costs and/or
- inferred based on a generator's or loads historic RRPs/LMPs/bids.

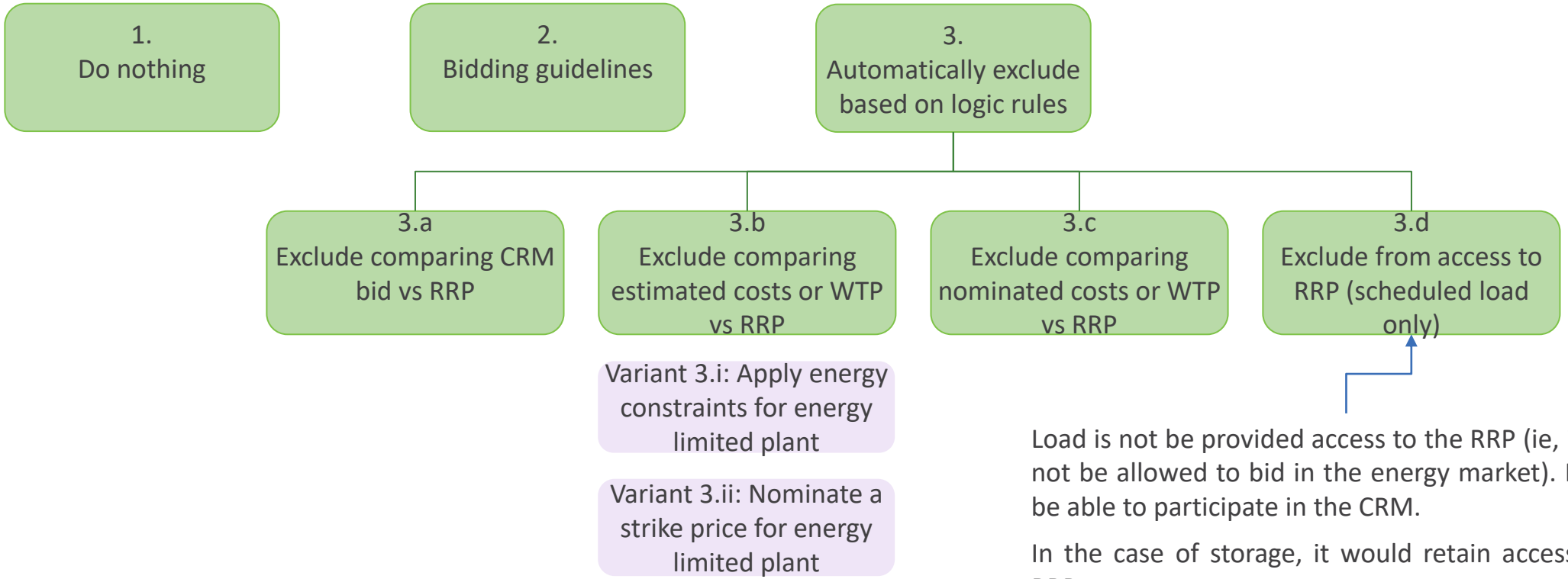
MURAL EXERCISE



This solution is premised on the introduction of congestion fees. Costs (prices) would be nominated by the generator (load) during their congestion fee discussions.

For a generator, a higher nominated cost would grant the new entrant less access to RRP and translate to a lower congestion fee.

MURAL EXERCISE



Load is not be provided access to the RRP (ie, it would not be allowed to bid in the energy market). It would be able to participate in the CRM.

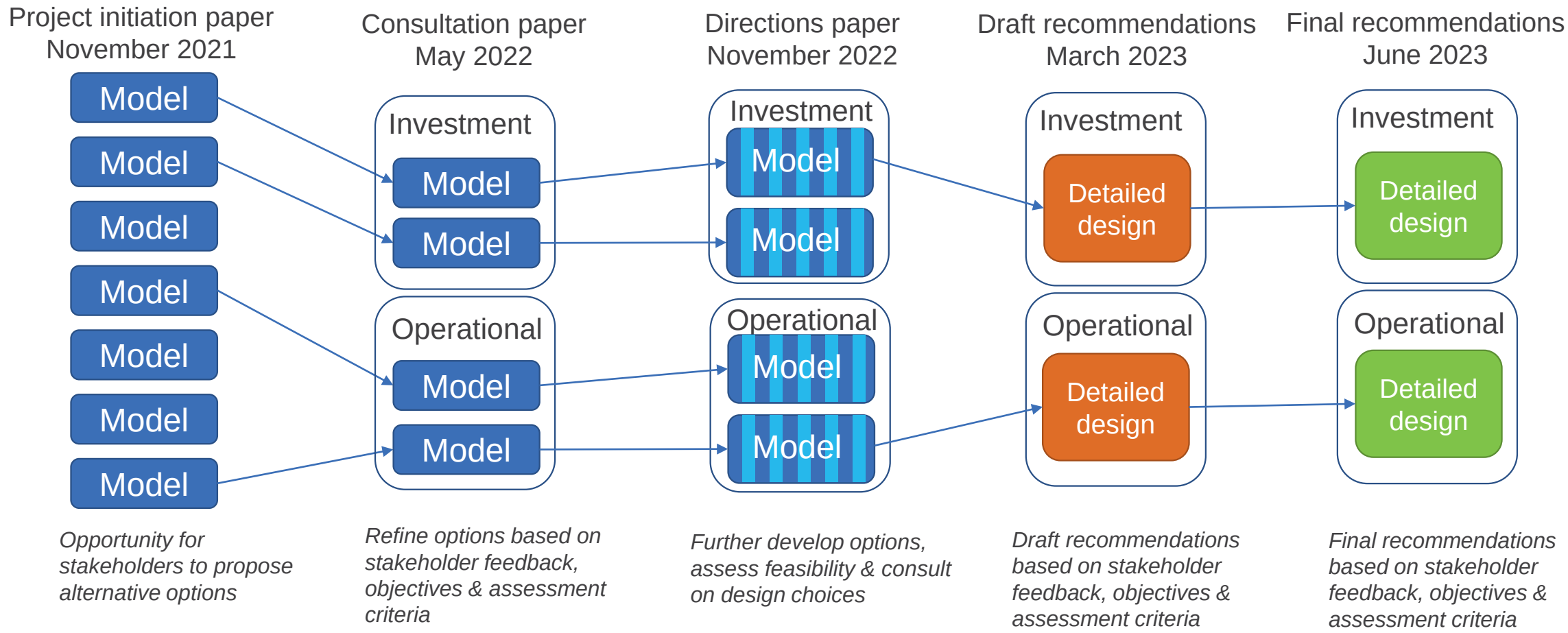
In the case of storage, it would retain access to the RRP as a generator.

MURAL EXERCISE

Options in response to the 'out of merit' issue for generation and scheduled load

1. Should similar solutions apply to both generators and scheduled load – and why?
2. What are the most preferable standalone or combination options to address this issue – and why?
3. What are the least preferred options – and why?

PROCESS FOR REFINING MODELS



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