Request for Expressions of Interest

RERT Panel (August 2019)

DETAILS

Services	Short Notice and/or Medium Notice RERT
Contact details:	rert@aemo.com.au
Closing Date:	29 August 2019
Validity Period:	Until 1 July 2020

Australian Energy Market Operator Limited
Level 22, 530 Collins Street
MELBOURNE VIC 3000
TEL: 03 9609 8000
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TABLE OF CONTENTS

A. REQUEST FOR EXPRESSIONS OF INTEREST

A.1 Background

As the national energy market operator and planner, AEMO plays an important role in supporting the industry to deliver a more integrated, secure, and cost effective national energy supply. AEMO operates Australia's largest gas and electricity markets and power systems, including the:

- National Electricity Market (NEM), the interconnected power system in Australia's eastern and south-eastern seaboard.
- Wholesale Electricity Market (WEM) and power system in Western Australia

AEMO also operates the:

- Victorian declared wholesale gas market (DWGM) and the Victorian gas transmission system.
- Wholesale gas short term trading market hubs in Adelaide, Sydney and Brisbane.
- Wallumbilla gas supply hub in Queensland.
- National gas market Bulletin Board.
- Western Australia gas Bulletin Board.

With its broad national focus on the future, AEMO's objectives are to promote efficient investment in and operation of Australia's electricity and gas services for the long-term interests of consumers with respect to price, quality, safety, reliability and security of energy supply.

A.2 Reserve

One of AEMO*'s* functions under the National Electricity Rules (Rules) is to monitor the reliability of *supply* in the *NEM* and to take all reasonable actions to ensure reliability. Where practicable, AEMO must maintain *power system security* by negotiating and entering into *reserve contracts*. In doing so, AEMO must comply with the Rules, *RERT principles* and *RERT guidelines*.

A.3 The Need for a RERT Panel

In order to provide AEMO with an expedited process for the procurement of *reserve* for situations where AEMO might have less than 10 weeks' notice of a projected shortfall in *reserve*, AEMO is empowered by the *RERT guidelines*[1] to create a panel of entities (**RERT Panel**) that may be called upon to tender for and enter into *reserve contracts* where:

- AEMO has between 10 weeks' and 7 days' notice of a projected shortfall of *reserves* (**Medium Notice Situations**); and
- AEMO has between 3 hours' and 7 days' notice of such a shortfall (**Short Notice Situations**).

[1] See https://www.aemc.gov.au/regulation/electricity-guidelines-and-standards

The procedure AEMO will follow is detailed in the Procedure for the Exercise of the RERT.[2]

A.4 Eligible Reserve

In seeking to become members of the RERT Panel, Recipients need to be aware of the types of *reserve* that AEMO would be prepared to purchase.

Load reduction

This usually involves the interruption of, or reduction in, the consumption of electricity by a *load*. The *load* to be interrupted or reduced need not be located in the same *region* as the *region* in respect of which *reserve* is sought by AEMO, but must usually take its *supply* from the *region* experiencing the *reserve* shortfall.

It is also possible that the reduced *load* is available because *generation* that is not *connected* to the *national grid* is used to supply electricity to the *load*.

If registered as a Scheduled *load*, Recipients should indicate this in their EOI.

Load reduction specifications sought by AEMO are as follows:

1. Available weekday (excluding public holidays) with:
    - 10 minute notification; or
    - 1 hour notification
2. Available 24 hours a day, 7 days a week with:
    - 10 minute notification; or
    - 1 hour notification

Reserve minimum is 5MW.

AEMO will consider responses with the above reserve specifications more favourably than those that do not meet these specifications but reserves the right to accept them or otherwise at its discretion.

Generation increase

This usually involves the *generation* of electricity from a *generating unit*. Generating units need not be located in the same regions as the region for which reserve is sought by AEMO, but must have a connection point located in the region for which reserve is sought.

Subject to the eligibility criteria below, it may involve the *generation* of electricity by a *scheduled generating unit* or *non-scheduled generating unit*.

Recipients should indicate whether the *generating unit* offered is a *scheduled generating unit* or a *non-scheduled generating unit* in their EOI.

AEMO's preferred *reserve* specifications are as follows:

1. available 7am to 11pm weekdays (excluding public holidays); or
2. available 24 hours a day, 7 days a week

but AEMO reserves the right to accept otherwise at its discretion

Reserve minimum is 5MW.

[2] This procedure is available at http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Emergency-Management.

AEMO will consider responses with the above *reserve* specifications more favourably than those that do not meet these specifications but AEMO reserves the right to accept them or otherwise at its discretion.

A.5 Ineligible Reserve

The following are ineligible for consideration as *reserve*:

- *Reserve* that is being provided by *scheduled generating units* or *scheduled loads* for which *dispatch offers* or *dispatch bids* have been submitted or are considered by AEMO to be likely to be submitted or be otherwise available for *dispatch* in the *trading intervals* during which the *reserve* is required.[3]
- *Reserve* that is required or might be required or available to be provided under any other agreement or arrangement, including any electricity supply agreement or arrangement, any demand side management agreement or arrangement or any other similar agreement or arrangement in the *trading intervals* during which the *reserve* is required.[4]

A.6 Ownership of Assets used to provide Reserve

It is not necessary for the Recipient to be the owner of a facility used to supply *reserve.* Where a Recipient does not own the relevant facility being used to offer *reserve*, they will need to demonstrate the existence of a contractual relationship with the owner whereby the owner has permitted the use of the facility in this manner.

A.7 Request for Expressions of Interest

Expressions of interest are requested from suitably qualified persons who wish to become members of the RERT Panel.

[3] See Rule 3.20.3(h).
[4] See Rule 3.20.3(j).

B. INFORMATION FOR RECIPIENTS

B.1 Glossary

In this Request for Expressions of Interest:

(a) A capitalised word or phrase has the meaning set out opposite that word or phrase below or in the Details;

(b) A word or phrase in italics has the same meaning given to that term in the Rules; and

(c) A reference to a "Rule" followed by a number refers to a provision of the Rules.

Addendum	Any document issued after the date of this Request for Expressions of Interest and labelled as an "Addendum" to this Request for Expressions of Interest; collectively known as "Addenda".
AEMO	Australian Energy Market Operator Limited, ABN 94 072 010 327, and references to AEMO include, where the context requires it, references to AEMO*'s* employees, officers, contractors, consultants, advisers and other persons authorised to act for AEMO.
Billing Period	A period of 7 days commencing with the *trading interval* ending at 00:30 hours *EST* on Sunday.
Expression of Interest or EOI	The offer submitted by a Recipient to become a member of the RERT Panel.
EOI Form	The document contained in **Section D**.
Medium Notice Situations	Situations where AEMO has between 7 days' and 10 weeks' notice of a projected shortfall in *reserves*.
Procedure for the Exercise of RERT	A procedure published by AEMO called: Procedure for the Exercise of Reliability and Emergency Reserve Trader (RERT). This procedure is available at http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Emergency-Management.
Recipient	Any person in receipt of this Request for Expressions of Interest.
Reliability Standard	The standard set out in clause 3.9.3C of the Rules
Request for Expressions of Interest	Is the collection of documents incorporating: Section A: Request for EOI Section B: Information for Recipients Section C: Request for Expressions of Interest Conditions Section D: EOI Form and all schedules, attachments and appendices to those documents.
RERT Panel	A panel of entities recruited by AEMO that might be called upon to tender for and enter into a *reserve contract* in Medium Notice Situations and Short Notice Situations.

Reserve	The reserve that a Recipient might be in a position to provide to AEMO in response to an invitation to tender.
Short Notice Situations	Situations where AEMO has between 3 hours' and 7 days' notice of a projected shortfall in *reserves*.
Statement of Compliance	The document contained in Schedule 1 of the EOI Form.

B.2 Recipients Must Inform Themselves

Prior to submitting an Expression of Interest (**EOI**), Recipients must have informed themselves fully concerning the nature, extent and requirements of this Request for Expressions of Interest, and made all examinations, investigations, interpretations, deductions and conclusions as to the costs, procedure and any difficulties in doing so.

B.3 Queries

Recipients must address any queries to the AEMO RERT Manager in writing.

B.4 Conditions of Submitting an EOI

Recipients must comply with **Section C**.

B.5 Nature of Request for Expressions of Interest

This Request for Expressions of Interest is an invitation to treat and is not intended to have any contractual effect. No contract will be entered into until a contract based on the proposed RERT Panel Agreement is entered into as contemplated by **Section C18**.

C. REQUEST FOR EXPRESSIONS OF INTEREST CONDITIONS

C.1 Submiting an EOI

Lodgement Requirements

A Recipient must submit an EOI that meets the following requirements:

- The EOI must be completed (that is, Section D: EOI Form and all relevant schedules are completed) and signed, and all pages of the EOI initialled, by a duly authorised officer of the Recipient.
- A Recipient must lodge a separate EOI Form for each Reserve offered.
- Two electronic copies of all EOIs from the one Recipient must be submitted. One must be in pdf format and be a copy of a hard copy completed, signed and initialled as required above; the second must be in Microsoft Word format (any spreadsheets must be in Microsoft Excel format) and must be submitted to the following email address by 4:00 pm *EST* on the Closing Date:

  rert@aemo.com.au

- The EOI must remain open for acceptance by AEMO for at least the Validity Period.

Additional information may be submitted with their EOI if, in the Recipients' opinion, it is necessary for a proper understanding of their EOI.

Statement of Compliance

The EOI Form and schedules have been developed to enable AEMO to evaluate EOIs in accordance with the evaluation criteria detailed in Section C.10.

If a Recipient cannot comply with any element of the EOI Form or schedules, the Recipient must specify in the Statement of Compliance the nature of, and reasons for, the non-compliance.

Recipients should note that a failure to comply with any of the other lodgement requirements may lead to rejection of their EOI.

C.2 Information Provided by AEMO

Upon submission of their EOI, Recipients are taken to have:

- carefully examined and satisfied themselves of the requirements of this Request for Expressions of Interest;
- examined all information relevant to the risks, contingencies and other circumstances relevant to becoming a member of the RERT Panel as may be available by making reasonable enquiries, including having read and understood the Rules[5], *RERT guidelines*[6] and Procedure for the Exercise of RERT[7];

[5] See https://www.aemc.gov.au/regulation/energy-rules/national-electricity-rules/current. Note that as from 26 March 2020, new rules will apply.

[6] See https://www.aemc.gov.au/sites/default/files/2018-07/RERT%20guidelines%202018.pdf. Note that as from 26 March 2020, new guidelines apply.

[7] This procedure is available at http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Emergency-Management. Note that by 26 March 2020, AEMO will have developed new RERT procedures to apply from that date.

- satisfied themselves as to the correctness and sufficiency of their EOI; and
- informed themselves of all matters and things necessary for the proper performance of any resulting contract to the extent that no charge in excess of, or in addition to, the prices submitted will be claimed from AEMO.

C.3 Prices for Reserve

The prices payable for any Reserve that might be procured by AEMO using the invitation to tender process under the proposed RERT Panel Agreements are as follows:

Availability Charge

No availability charge is payable for Reserve procured in Short Notice Situations.

For Medium Notice Situations, an availability charge may apply where significant overheads are incurred in making the Reserve available It must be priced as a rate in dollars per day or weekday (as the case may be). It will be payable when the Reserve is available to AEMO, regardless of whether AEMO has *dispatched* or *activated* it.

Where an Availability Payment is payable, the amount and the payment of the Availability Charge can be affected in 3 ways:

Testing

The provider must complete a test of the reserve, at the providers cost, by the date notified by AEMO to confirm that the tendered amount of reserve can be provided. If the initial test result indicates that the tendered amount of reserve cannot be provided, the provider can request a retest by the date notified by AEMO, at the provider's cost. If the highest performing test undertaken yields an outcome where the available capacity of the reserve is less than the initial contracted reserve, AEMO may reduce the contracted reserve amount to the amount tested and on a pro rata basis, reduce the Availability Charge.

For example, where the reserve initially contracted is 10MW, but the highest performing test result yields a reserve of 8MW, the contracted reserve amount will be 8MW and the Availability Charge will be 80% of the tendered lump sum amount.

Advice that reserve is unavailable

During the reserve period, the provider will be required to advise AEMO on the availability of the reserve on an ongoing basis using the AEMO web portal.

If the provider advises AEMO that the contracted reserve is not available, the reserve will be considered unavailable.

Non-delivery of reserve

If AEMO has not been advised of unavailiability and AEMO issues an instruction to activate or dispatch the reserve for a day or weekday (as the case may be) and the amount of reserve activated or dispatched is 80% or less than 80% of the amount instructed, the reserve will be considered to have been unavailable for a period determined by the panel agreement.

Pre-Activation Charge

No pre-activation charge is payable for Reserve comprised of *scheduled reserve*.

A pre-activation charge applies where significant additional operating costs are incurred in making Reserve comprised of *unscheduled reserve* available for activation. It will apply to *unscheduled reserve* that can be *activated* quickly if pre-activated. It must be priced as a rate in dollars per "pre-activation instruction". It will be paid only if AEMO issues a "pre-activation instruction" in accordance with the proposed *reserve contract* to alert a provider to

be ready to respond to a possible *activation* instruction, regardless of whether the *unscheduled reserve* is *activated*.

A re-issue of the "pre-activation instruction" to revise an earlier advice shall not incur an additional charge.

The pre-activation charge is not payable in the event of non-delivery of the Reserve.

Usage Charge

The usage charge applies to Reserve where significant operating costs are incurred by a provider when the Reserve is delivered in response to a *dispatch* or *activation* instruction. It must be priced as a rate in dollars per MWh of *energy:*

- for *generation*, this is calculated as the increase in *energy* provided; and
- for *load reduction*, this is calculated as the reduction in *energy* usage by the relevant *load*.

A provider will only be paid for the Reserve delivered up to the limit of the amount of Reserve sought in the *dispatch* or *activation* instruction and only between the times specified in the relevant *dispatch* or *activation* instruction.

For load reduction, the Usage Charge will be calculated against baselines and baseline adjustments in paragraph 5 below. It is possible that the relevant load might be off-line and seemingly not available as Reserve. In this case, if that load was notified to AEMO to return on-line and that return was anticipated to exacerbate any reliability problems if it were to return on-line, the provider would, at AEMO's discretion, be paid the appropriate usage charge to keep the load off-line. Tenderers should state in their offer whether their load is "flat" or "variable" and if variable, should provide information indicating the nature and extent of the variability.

The Usage Charge is only payable if an activation or dispatch instruction is issued to the provider.

Early Termination Charge

The early termination charge applies only to reserve procured in Medium Notice Situations where AEMO opts to terminate a *reserve contract* prematurely. One termination price will apply for each *reserve contract*.

Baselines for Demand Response

In the case of demand response, baseline calculations will be used to determine the quantity of reserve activated.

When a demand response event occurs the response calculated for the usage payment is the difference between the metered quantity of the resource and the baseline energy for the resource, where the baseline energy is an estimate of what demand would have been had there been no demand response.

The baseline methodology draws on approaches developed under AEMO's Demand Response Mechanism (**DRM**) proposals in 2013[8], which was based on methods used internationally and assessed for application within a NEM context.

In order to ensure that the baseline is appropriate when measured against actual consumption, AEMO may compare the providers' baseline under the baseline formulation

[8] AEMO, July 2013. Demand Response Mechanism and Ancillary Services Unbundling - High Level Market Design. Available at: https://www.aemo.com.au/-/media/Files/PDF/DRM_High_Level_Market_Design_Final.pdf

[set out in Schedule 5 against the last 60 non-event days metered history and if they vary from each other by a value greater than or equal to 20% Relative Root Mean Squared Error (RRMSE), AEMO may adjust the variables used to determine the baselines applicable to ones that AEMO reasonably determines better reflect the provider's typical demand.

An explanation of the baseline calculations is included in Schedule 5.

C.4 Prices to be Submitted

Prices must be submitted by Recipients who are in a position to offer *reserve* during Short Notice Situations only. These prices will be fixed for the term of any resulting RERT Panel Agreement.

All prices must be submitted exclusive of GST and must be fixed for the period of the proposed *reserve contract*. Successful Recipients will be aware that, as part of AEMO*'s settlements* process, charges will be grossed up for GST in accordance with Rule 3.15.10A.

Recipients must structure the price payable for the Reserve as follows:

Pre-Activation price

Recipients of Reserve comprised of *unscheduled reserve* must nominate in Schedule 3 of the EOI Form the pre-activation charge on a dollar per "pre-activation instruction".

Usage price

Recipients must nominate in Schedule 3 of the EOI Form the usage charge on a dollar per MWh basis.

C.5 Disclaimer

Except to the extent required by law, AEMO does not accept any responsibility to Recipients or third parties under the law of contract, tort (including negligence) or otherwise, for any loss or damage whatsoever that may arise from any information provided by AEMO.

AEMO accepts no responsibility for any interpretation that may be placed on this Request for Expressions of Interest.

The information contained in this Request for Expressions of Interest is furnished for the convenience of Recipients. Any information provided by AEMO is not guaranteed and EOIs must be based on Recipients' own investigations and determinations. AEMO makes no warranties or representations on the contents, or adequacy, of any information provided to Recipients.

C.6 No Liability

Except where it would be illegal to do so, AEMO is not liable in any way for the accuracy or completeness of this Request for Expressions of Interest, or for any loss or damage of whatever kind (whether foreseeable or not) however arising, suffered or incurred by any person in connection with this Request for Expressions of Interest (including by reason of any negligence, default or lack of care).

C.7 Queries, Discrepancies or Errors

If Recipients find any discrepancy, error, or have any doubt as to the meaning or completeness of this Request for Expressions of Interest and they wish to clarify the discrepancy, error or doubt, they should notify the AEMO RERT Manager in writing at least 14 days before the Closing Date, whereupon AEMO may issue an Addendum clarifying the discrepancy, error, or query (as the case may be) in accordance with **Section C.8**.

C.8 Addenda

AEMO may issue an Addendum clarifying any matter contained in this Request for Expressions of Interest at any time not less than 5 business days prior to the Closing Date. AEMO will issue formally numbered Addenda on its website.

No representation or explanation to Recipients as to the meaning of this Request for Expressions of Interest, or as to anything to be done or not be done by the successful Recipient will be taken to be included in this Request for Expressions of Interest unless it is contained in an Addendum.

C.9 Confidentiality

AEMO declares that EOIs are *confidential information*[9] and will not be disclosed outside AEMO unless it is:

(a) to persons nominated by participating jurisdictions for the purpose of AEMO consulting with participating jurisdictions and agreeing cost-sharing arrangements between regions (if applicable) as required under the National Electricity Rules (Note that AEMO is only required to consult with jurisdictions when deciding whether to enter into reserve contract, not Panel Agreements, however AEMO will need to also disclose EOIs for Panel Agreements to jurisdictions to ensure all relevant information is considered as part of the jurisdictional consultation);

(b) disclosed to a *Network Service Provider* for the purpose of assessing the feasibility of any proposed *reserve;*

(c) required by law (including the Rules or RERT guidelines), or in the course of legal proceedings, or proceedings under Rule 8.2;

(d) requested by any regulatory or other government authority having jurisdiction over AEMO or its activities; and

(e) to AEMO*'s* external advisers, consultants or insurers,

in which case the Recipient is deemed to have consented to this disclosure by providing the EOI, or in accordance with the Rules.

Recipients acknowledge that details of EOIs will need to be provided to AEMO operational staff for the purpose of updating procedures and training staff in preparation for the procurement of *reserve* and administering any resultant *reserve contracts*.

C.10 EOI Evaluation

Without prejudice to AEMO*'s* right to reject non-conforming EOIs, during the EOI evaluation process, AEMO may seek clarification from Recipients of matters raised and rectification or resolution of errors or omissions in EOIs. Recipients may be required to attend meetings with AEMO at a time and place to be notified by the AEMO RERT Manager to review and discuss any such matters.

AEMO will evaluate the EOIs taking into account the following criteria:

- the nature and location of the Reserve;

[9] The obligation as to confidentiality extends to all subsequent communications between Recipients and AEMO about the EOIs.

- the expected reliability and availability of the offered *reserve*, including the completion of any tests required by AEMO to demonstrate reliability and availability;
- the impact of any requested changes to the proposed RERT Panel Agreement;
- compliance with the Procedure for the Exercise of RERT, the *RERT Principles*, *RERT Guidelines* and the Rules; and
- any other factors AEMO considers to be relevant.

AEMO may, in its absolute discretion, evaluate and accept EOIs that do not meet the lodgement requirements in **Section C.1**, but AEMO is not obliged to do so.

Subject to **Sections C.11** and **C.12**, AEMO will advise Recipients of the outcome of this Request for Expressions of Interest within 5 weeks of the Closing Date.

C.11 AEMO not Bound to Proceed

AEMO is under no obligation to proceed with, or accept any EOI, to complete the process outlined in this Request for Expressions of Interest or ultimately purchase any goods or services that comprise any part of the Reserve.

C.12 No Obligation to Debrief

AEMO is under no obligation to debrief any Recipient as to AEMO*'s* evaluation of EOIs, or give any reason for the acceptance of or non-acceptance of any EOI.

C.13 No Reimbursement for Costs of Preparing and Submitting an EOI

No Recipient is entitled to be reimbursed for any expense or loss incurred in the preparation and submission of its EOI or for any costs incurred in attending meetings with AEMO during the EOI evaluation process.

C.14 Ownership of EOIs

AEMO will retain and own all EOIs submitted as a result of this Request for Expressions of Interest. Apart from AEMO*'s* right to copy EOIs for the purposes of evaluation, Recipients' intellectual property rights in their EOIs are not affected by AEMO*'s* rights under this **Section C14**.

C.15 Acceptance Of EOI

No EOI shall be taken to have been accepted by AEMO until notification of acceptance has been given in writing by AEMO to the successful Recipient.

C.16 No Publicity

Recipients must not make any public or media announcement about this Request for Expressions of Interest or the outcome of this Request for Expressions of Interest without AEMO*'s* prior permission.

C.17 No Collusion or Dealings with Competitors

Recipients must ensure that they (and their principals, employees, agents and contractors) do not:

(a) discuss this Request for Expressions of Interest with any provider or potential provider of *reserve*; or

(b) engage in any conduct that is designed to, or might have the effect of, lessening competition in the supply to AEMO of *reserve*.

Recipients who wish to engage in legitimate teaming or sub-contracting discussions with persons who might be in a position to offer Reserve must gain AEMO*'s* prior approval to do so.

C.18 Proposed RERT Panel Agreement

RERT Panel membership will be governed by the terms of the proposed RERT Panel Agreement contained in Schedule 6 to the EOI Form.

Recipients must not include their own standard or general conditions of contract with their EOIs. Recipients who wish to propose any change to the proposed contract should include their comments in the Statement of Compliance and provide a copy of the document showing the exact change proposed by using the "Track Changes" function in Microsoft Word.

Recipients will be taken to have accepted the proposed RERT Panel Agreement without variation if they do not provide a copy marked in this way.

D. EOI FORM

RERT Panel

To: Australian Energy Market Operator Ltd
Level 22, 530 Collins Street
MELBOURNE VIC 3000

Expression of Interest

From:

Recipient:		
ABN:		
Address:		
Contact Person:	Name:	
	Title:	
	Telephone No:	
	Facsimile No:	
	E-mail:	

D.1. Expression of Interest

The Recipient hereby submits an Expression of Interest in becoming a member of the RERT Panel in accordance with the requirements of the Request for Expressions of Interest, subject to the Statement of Compliance in **Schedule 1**.

D.2. Agency/Joint Submission

The Recipient is/is not[10] acting as agent or trustee for another person, or lodging an EOI jointly with other persons.

(If the Recipient is acting as an agent or trustee, full details must be provided in this section.)

D.3. Ability to Offer Reserve

The Recipient is in a position to respond to any invitation to tender to provide *reserve* in the circumstances referred to in Schedule 2 and the prices referred to in Schedule 3.

D.4. Validity Period

This EOI and the offer it contains will remain open for acceptance by AEMO for the Validity Period.

D.5. Reserve Availability

The Reserve that is likely to be offered by the Recipient must not have been offered to anyone else for provision in the National Electricity Market and must not be so offered, except on terms

[10] Delete as appropriate.

to be agreed with AEMO. The Recipient provides the consent specified in Schedule 4 to assist AEMO in making its inquiries in respect of the availability of the Reserve should the Recipient be offering Reserve at any time during the proposed RERT Panel Agreement.

D.6. RERT Panel Agreement

The Recipient provides in Schedule 6 a copy of the proposed RERT Panel Agreement with the Recipient's proposed changes in "track changes" mode.

OR

The Recipient accepts the proposed RERT Panel Agreement as provided.[11]

D.7. Addenda to Request for Expressions of Interest (only if Addenda received)

In the preparation of its EOI, the Recipient acknowledges having received the following Addenda, if any, to the Request for Expressions of Interest:

Addendum No.	1	Dated
Addendum No.	2	Dated
Addendum No.	3	Dated

NOTE: Capitalised terms in this EOI Form and Schedules are defined in the Request for Expressions of Interest; italicised terms are defined in the National Electricity Rules.

Dated this day of

EXECUTED by ***[NAME OF RECIPIENT]*** by its duly appointed representative in the presence of:)
)
)

.....	.....
Witness	Authorised Officer
.....	.....
Name of Witness (print)	Name of Authorised Officer (print)
	.....
	Title of Authorised Officer (print)

[11] Delete as appropriate.

SCHEDULE 1 STATEMENT OF COMPLIANCE

I *[Recipient]* confirm that this EOI conforms in every respect with the Request for Expressions of Interest.

OR

I *[Recipient]* confirm that this EOI does not conform with the Request for Expressions of Interest in the following ways:

Recipient's Name _____

Recipient's Signature _____

Date _____

SCHEDULE 2 THE RESERVE

1 Reserve

The Recipient is in a position to offer to AEMO the following Reserve:

Region	Reserve (MW)	Period during which reserve might be available between 1 November 2019 and 31 March 2020		Can the Reserve be Offered in Medium Notice Situations? (Tick if yes)	Can the Reserve be Offered in Short Notice Situations? (Tick if yes)	Is the Reserve *scheduled reserve?*		Is the Reserve *unscheduled reserve?*	
		Date(s)	Time(s)			*Generation* increase? (Tick if yes)	*Load* Reduction? (Tick if yes)	*Generation* Increase? (Tick if yes)	*Load* Reduction? (Tick if yes)
Queensland									
New South Wales									
Tasmania									
Victoria									
South Australia									

2 Estimate of Likelihood of Availability of Offer

For each of the Reserves the Recipient is in a position to offer, the Recipient must indicate the likelihood that it will be available if the Recipient were in receipt of an invitation to tender for its provision during a Medium Notice Situation or Short Notice Situation (as the case might be) as follows:

2.1 For Medium Notice Situations

Region	Reserve (MW)	Availability if Recipient given …				
		7 days' notice (Tick if yes)	2 weeks' notice (Tick if yes)	5 weeks' notice (Tick if yes)	10 weeks' notice (Tick if yes)	Other (specify)
Queensland						
New South Wales						
Tasmania						
Victoria						
South Australia						

2.2 For Short Notice Situations

Region	Reserve (MW)	Availability if Recipient given …					
		3 hours' notice (Tick if yes)	8 hours' notice (Tick if yes)	24 hours' notice (Tick if yes)	3 days' notice (Tick if yes)	7 days' notice (Tick if yes)	Other (specify)
Queensland							
New South Wales							
Tasmania							
Victoria							
South Australia							

3 Type of Reserve

For each of the Reserves the Recipient is in a position to offer, if it is:

- *Scheduled reserve – generation* increase, complete **item 4**;
- *Scheduled reserve – load* reduction, complete **item 5**;
- *Unscheduled reserve – generation* increase, complete **item 6**;
- *Unscheduled reserve – load* reduction, complete **item 7**.

4 Scheduled Reserve – Generation Increase

For each of the Reserves the Recipient is in a position to offer, if it is to be provided by a *scheduled generating unit*, the following information must be supplied:

4.1 Details of Scheduled Generating Unit

Copy and paste this table as many times as necessary for each *scheduled generating unit*.

Description of ***scheduled generating unit***	**Name or identification number:** Insert details in Excel spredsheet	
	Power Station: Insert details in Excel spredsheet	
Classification of ***scheduled generating unit***		□ *Market generating unit* □ *Non-market generating unit* Insert details in Excel spredsheet
Connection Point		
Local Network Service Provider		
Is the Recipient the ***Registered Participant*** in respect of the ***scheduled generating unit***?		□ Yes □ No
Does the Recipient own the ***scheduled generating unit***?		□ Yes □ No
If not, on what basis is the *scheduled generating unit* being made available to the Recipient for offer to AEMO as Reserve? Provide relevant evidence,[12] including a copy of any contract by which the *scheduled generating unit* is being made available for the provision of Reserve.		
Firm Capacity, i.e. the *generating* capacity available from the *scheduled generating unit*.		Insert details in Excel spredsheet
Market Capacity, i.e. the *generating* capacity available from the *scheduled generating unit* subject to: • *dispatch offers;* or • any power sales agreement or arrangement.		Insert details in Excel spredsheet
Reserve, i.e. the Firm Capacity minus Market Capacity Provide details of the method by which the *scheduled generating unit* will be utilised for the delivery of *reserve*.[12]		Insert details in Excel spredsheet
Minimum Operating Level, i.e. the minimum *loading level* at which the *scheduled generating unit* can operate continuously.		Insert details in Excel spredsheet

[12] Please label any attachment clearly with the item number to which it refers.

Enablement Lead Time, i.e. the maximum period required by the *scheduled generating unit* to *synchronise* and increase *generation* until the level of *generation* becomes equal to the greater of the Minimum Operating Level for Slow Start Plant (see below), the *scheduled generating unit* can be in a position to *synchronise* and increase *generation* for Fast Start Plant, or be in a position to increase output above the Market Capacity		Insert details in Excel spredsheet
Disablement Lead Time, i.e. the maximum period required to reduce the *generation* output of the *scheduled generating unit* to the Market Capacity or *desynchronise* it.		Insert details in Excel spredsheet
Type of Scheduled Generating Unit, i.e. "Fast Start Plant", which means that the *scheduled generating unit* can *synchronise* and increase its *loading level* to the *firm capacity* within 30 minutes, or "Slow Start Plant", which is any other *scheduled generating unit*.		□ Fast Start Plant □ Slow Start Plant Insert details in Excel spredsheet
Power Output Range		MW
Method of Control, i.e. can the *scheduled generating unit* be switched to operate on *AGC* or under manual control?		□ *AGC* □ *Manual Control* Insert details in Excel spredsheet
Minimum rate of change of power output	While operating on *AGC*:	Insert details in Excel spredsheet
	While operating on manual control:	Insert details in Excel spredsheet
Maximum rate of change of power output	While operating on *AGC*:	Insert details in Excel spredsheet
	While on operating manual control:	Insert details in Excel spredsheet
Minimum run-time, i.e. the minimum period the *scheduled generating unit* must *generate.*		Insert details in Excel spredsheet
Minimum off-time, i.e. the minimum period between the last time the *scheduled generating unit* was *generating* and the time at which the *scheduled generating unit* can re-commence *generating.*		Insert details in Excel spredsheet
Maximum run time, i.e. the maximum period the *scheduled generating unit* can *generate*.		Insert details in Excel spredsheet

4.2 Constraints

Is the ***dispatch*** of the Reserve dependent on any third party, or the ***dispatch*** or ***activation*** of any other ***reserve***? If so, identify that third party and provide details of the type of constraint.[13]	□ Yes □ No
Is the Recipient required to receive any approval from any Local, State or Federal Government body or Authority (e.g. Essential Services	□ Yes □ No

[13] Please label any attachment clearly with the item number to which it refers.

Commission, Environment Protection Authority, etc.) in order to make the Reserve available? If so, please provide details.[13]	
Is there any potential environmental, health, or safety risk (e.g. community risk/cost) to any party as a result of ***dispatching*** the Reserve? If so, please provide details.[14]	□ Yes □ No
Are there any other known or potential constraints on the ***dispatch*** of the Reserve? If so, please provide details.[14]	□ Yes □ No
Indicate which constraints might be interrelated.[14]	

4.3 Minimum Technical Requirements

Can the Reserve be ***dispatched*** by instructions to a single point of contact with operational responsibility? If not, please provide details of how the Reserve *dispatch* instructions need to be delivered by AEMO.[14]	□ Yes □ No
Can the Reserve be ***dispatched*** as a block of not less than 5MW? If not, please detail the minimum size of the blocks in which it can be *dispatched*.[14]	□ Yes □ No
Can the Reserve be ***dispatched*** continuously for at least one hour? If not, please explain why and detail the minimum time during which the Reserve can be *dispatched* continuously.[14]	□ Yes □ No

4.4 24-hour Contacts for the purpose of responding to an Invitation to Tender:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

4.5 Contacts for operational communications:

	Proposed	**Backup**

[14] Please label any attachment clearly with the item number to which it refers.

Name:		
Telephone No:		
Fax No:		
Email:		

4.6 Performance Criteria

Copy and paste this table as many times as necessary for each *scheduled generating unit*.

Can the ***scheduled generating unit synchronise*** and increase ***generation*** until the level of ***generation*** becomes equal to the Minimum Operating Level for Slow Start Plant[15], be in a position to ***synchronise*** and increase ***generation*** for Fast Start Plant[15] or be in a position to increase output above the Market Capacity within the proposed Enablement Lead Time[15] at all times? If not, when will it be unable to do so and why?[16]	□ Yes □ No
Can the ***scheduled generating unit*** reduce its ***generation*** output to the Market Capacity or ***desynchronise*** it within the proposed Disablement Lead Time[15] at all times? If not, when will it be unable to do so and why?[16]	□ Yes □ No
Upon receiving an instruction to ***dispatch***, can the ***scheduled generating unit generate*** at the required rate of change, which is to be not less than the relevant rate of change of power output?[15] If not, when will it be unable to do so and why?[16]	□ Yes □ No

4.7 Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[16]	□ Yes □ No
Is the Reserve available at all times between 1 November 2019 to 31 March 2020? If not, please identify when it is, or might, not be available and why.[16]	□ Yes □ No

[15] As specified in the table in item 4.1.
[16] Please label any attachment clearly with the item number to which it refers.

4.8 Reserve Reliability

Copy and paste this table as many times as necessary for each *scheduled generating unit*.

Has the ***scheduled generating unit*** undergone the following test in the last 3 months? Operation of the *scheduled generating unit* at the Firm Capacity[17] for not less than 1 hour, where: • The *scheduled generating unit* operated in a constant and stable manner; • The *scheduled generating unit* increased *generation* until the level of *generation* became equal to the greater of the Minimum Operating Level[17] and the Market Capacity[17] within the proposed Enablement Lead Time[17]; • The *scheduled generating unit* reduced its *generation* output to the Market Capacity[17] or *desynchronised* it within the proposed Disablement Lead Time[17]; and • All automatic *control systems*, for example, the *excitation control system* and *governor system*, operated in their automatic regulating mode. Time-stamped trend display printouts of the performance of the *scheduled generating unit* must be provided to AEMO as evidence of the completion of this test.[18]	□ Yes □ No
Can the Recipient provide any other evidence of the proven reliability of the Reserve?[18]	□ Yes □ No

4.9 Measurement of Reserve

Copy and paste this table as many times as necessary for each *scheduled generating unit*.

Provide details of the ***metering*** equipment the Recipient proposes to use to measure the offered Reserve***.***[18]	
Where is the ***metering*** equipment installed? If not installed yet, provide: • the date by which the *metering* equipment will be functional; and • the proposed location of the *metering* equipment.	
Is the ***metering*** equipment a type 1, 2, 3 or 4 ***metering installation***[19]	□ Type 1 □ Type 2 □ Type 3 □ Type 4

[17] As specified in the table in item 4.1.
[18] Please label any attachment clearly with the item number to which it refers.
[19] See Schedule 7.2 of Chapter 7 of the NER

Does the ***meter*** cover the entire range of the ***scheduled generating unit's*** capacity? If not, give details as to the calculation procedure or methodology (with examples) to be used to calculate the quantity of Reserve *dispatched* for each *trading interval* that the Reserve is to be *dispatched*.[18]	□ Yes □ No

5 Scheduled Reserve – Load Reduction

For each of the Reserves the Recipient is in a position to offer, if it is to be provided by a reduction in *load*, the following information must be supplied:

5.1 Activation by Blocks[20]

AEMO requires that the Reserve that is made up of a number of reductions in *load,* which might be across one or more locations, be offered as a "Block" of at least 5MW. The *load* that makes up each Block must be situated in the same *region*.

The size of the Block being offered is:	……..MW

Copy and paste all of the following items and complete for each Block.

5.2 Common Characteristics of Block

The Block must contain the following common characteristics:

Enablement Lead Time, i.e., the time required for the Block to be prepared for *dispatch*	Insert details in Excel spreadsheet
Disablement Lead Time, i.e. the time required for the Block cease providing Reserve and to recommence taking supply of electricity from the *network*.	Insert details in Excel spreadsheet
Maximum continuous operation, i.e. the maximum time the Block can be *dispatched* continuously	Insert details in Excel spreadsheet
Minimum continuous operation, i.e. the minimum time the Block can be *dispatched* continuously	Insert details in Excel spreadsheet
Minimum time between ***dispatches***	Insert details in Excel spreadsheet
Which hours of the day is the Block available for ***dispatch***?	Insert details in Excel spreadsheet
Which days of the week is the Block available for ***dispatch***?	Insert details in Excel spreadsheet
Maximum number of consecutive days in a week that the Block is available for ***dispatch***	Insert details in Excel spreadsheet
Maximum number of days per week that the Block is available for ***dispatch***	Insert details in Excel spreadsheet
Maximum number of ***dispatches*** over the period 1 November 2019 to 31 March 2020	Insert details in Excel spreadsheet

5.3 Details of Load Reduction

(Insert details in Excel spredsheet)

The Tenderer must provide details of all the NMIs which, as at the commencement date or at any time during the term, are related to equipment, plant or processes owned, contracted or controlled by the Reserve Provider including NMI's which are not related to the provision of reserve.

[20] Copy this schedule as many times as is necessary so that each schedule contains the data related to one block only.

The Tenderer must also provide details of any battery supporting the reserve.

5.4 Ownership

For each load reduction, please identify the load by the number used in the table in item 5.2 above including NMI, and confirm whether the Recipient owns the facility being used to provide the Reserve. Where the Recipient does not own the relevant facility, provide evidence, including a copy of any contract by which the Reserve is being made available for provision to AEMO as Reserve. Please label any attachment clearly with the item number to which it refers.

5.5 Constraints

Is the ***dispatch*** of the Reserve dependent on any third party? If so, who that third party is and provide details of the type of constraint.[21]	□ Yes □ No
Is the Recipient required to receive any approval from any Local, State or Federal Government body or Authority (e.g. Essential Services Commission, Environment Protection Authority, etc.) in order to make the Reserve available? If so, please provide details.[21]	□ Yes □ No
Is there any potential environmental, health, or safety risk (e.g. community risk/cost) to any party as a result of ***activating*** the Reserve? If so, please provide details.[21]	□ Yes □ No
Are there any other known or potential constraints on the ***dispatch*** of the Reserve? If so, please provide details.[21]	□ Yes □ No

5.6 Minimum Technical Requirements

Can the Reserve be ***dispatched*** by instructions to a single point of contact with operational responsibility? If not, please provide details of how the Reserve *dispatch* instructions need to be delivered by AEMO.[21]	□ Yes □ No
Can the Reserve be ***dispatched*** as a block of not less than 5 MW? If not, please detail the minimum size of the blocks in which it can be *dispatched*.[21]	□ Yes □ No
Can the Reserve be ***dispatched*** continuously for at least one hour? If not, please explain why and detail the minimum time during which the Reserve can be *dispatched* continuously.[21]	□ Yes □ No

[21] Please label any attachment clearly with the item number to which it refers.

Is there any maximum dispatch duration If so, why?	□ Yes □ No

5.7 24-hour Contacts for the purpose of responding to an Invitation to Tender:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

5.8 Contacts for operational communications:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

5.9 Performance Criteria

Can the Block be prepared for ***dispatch*** within the proposed Enablement Lead Time[22] at all times? If not, when will it be unable to be so prepared and why?[23]	□ Yes □ No
Can the Block cease providing Reserve and to recommence taking supply of electricity from the ***network*** within the proposed Disablement Lead Time[22] at all times? If not, when will it be unable to do so and why?[23]	□ Yes □ No

[22] As specified in the table in item 5.2.
[23] Please label any attachment clearly with the item number to which it refers.

Will ***dispatch*** of the Reserve lead to any consequent increase in the rate at which electricity is taken from the ***network*** by any other equipment or process owned by a consumer whose ***load*** is included in the Block? If yes, has this effect been deducted from the offered Reserve? Please provide evidence if it has.[23]	□ Yes □ No

5.10 Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?	□ Yes □ No
Is the Reserve available at all times between 1 November 2019 to 31 March 2020? If not, please identify when it is, or might, not be available and why.[24]	□ Yes □ No

5.11 Reserve Reliability

Are there any written procedures that will be used to govern the process by which the Reserve will be provided to **AEMO**? If yes, do they align with the terms of the proposed *reserve contract*? If the written procedures do not align with the terms of the proposed *reserve contract*, how does the Recipient intend to satisfy those terms? If there are no written procedures to be used to govern the process by which the Reserve will be provided to AEMO, how does the Recipient intend to satisfy the terms of the proposed *reserve contract*?	□ Yes □ No □ Yes □ No
Can the Recipient provide any evidence of the proven reliability of the Reserve? (The evidence must not be more than 3 months old)[24] Testing might be required as a condition of contract but if the facility which will provide the Reserve has recently been satisfactorily tested, AEMO may allow those results to be used in full or partial discharge of the tests obligations. If no evidence of testing is able to be provided, clearly state that this is the case and the reason why	

[24] Please label any attachment clearly with the item number to which it refers.

5.12 Measurement of Reserve

Provide details of the ***metering*** equipment the Recipient proposes to use to measure the Reserve.[24]	
Where is the ***metering*** equipment installed? If not installed yet, provide: • the date by which the *metering* equipment will be functional; and • the proposed location of the *metering* equipment.	
Is any of the ***metering*** equipment to be used a type 1, 2 3 or 4 ***metering installation***? If yes, please specify the *load* reduction to which the *metering installation* applies.[24]	□ Type 1 □ Type 2 □ Type 3 □ Type 4 □ Vic AMI meter
Provide details of any Supervisory Control and Data Acquisition (SCADA) capability. If no SCADA equipment exists, please specify whether such equipment will be installed if contracted. Or if it is not feasible to install SCADA please provide detail of other remote monitoring capability.	
For each piece of ***metering*** equipment intended to be used in the measurement of Reserve, provide the following: [25] • a list of the equipment the Recipient proposes be used in the determination of the quantity of Reserve *dispatched* on a *trading interval* basis; • the performance and characteristics of the equipment the Recipient proposes be used to determine the quantity of Reserve *dispatched;* • evidence as to the accuracy of each piece of *metering* equipment intended to be used in the measurement of Reserve; • details of the methodology the Recipient proposes to use to calculate on a *trading interval* basis the *dispatched* Reserve (with examples); • details of the method of validation for a claim for payment for Reserve provided, and the documentation the Recipient will provide to verify claims for payment; and • the *load* profile and any other relevant characteristics of each *load* reduction.	

7.13 Testing

The Recipient must complete a test of the enablement, dispatch and disablement of the reserve under instruction from AEMO to AEMO's reasonable satisfaction by 1 December 2019.	

[25] Please label any attachment clearly with the item number to which it refers.

This test requires the Reserve Provider to perform the following actions in sequence (failure to perform these actions in sequence will constitute a failure to complete this test satisfactorily): • enable the reserve within the enablement lead time; • provide load reduction at a level in accordance with dispatch instructions issued by AEMO; and • disable under instructions from AEMO within the disablement lead time.	
Is the Recipient able to submit the scheduled generating unit to testing by 1 December 2019? If not, why not?	□ Yes □ No

6 Unscheduled Reserve – Generation Increase

For each of the Reserves the Recipient is in a position to offer, if it is to be provided by a *non-scheduled generating unit*, the following information must be supplied:

6.1 Details of Non-scheduled Generating Unit

Copy and paste this table as many times as necessary for each *non-scheduled generating unit*.

Description of ***non-scheduled generating unit***	**Name or identification number:** Insert details in Excel spreadsheet	
	Power Station: Insert details in Excel spreadsheet	
Classification of ***non-scheduled generating unit***		□ *Market generating unit* □ *Non-market generating unit* Insert details in Excel spreadsheet
Connection Point		Insert details in Excel spreadsheet
Local Network Service Provider		
Is the Recipient the ***Registered Participant*** in respect of the ***non-scheduled generating unit***?		□ Yes □ No
Does the Recipient own the ***non-scheduled generating unit***?		□ Yes □ No
If not, on what basis is the *non-scheduled generating unit* being made available to the Recipient for offer to AEMO as Reserve? Provide relevant evidence, including a copy of any contract by which the *non-scheduled generating unit* is being made available for the provision of Reserve.[26]		
Firm Capacity, i.e. the *generating* capacity available from the *non-scheduled generating unit*.		Insert details in Excel spredsheet
Market Capacity, i.e. the *generating* capacity available from the *non-scheduled generating unit* subject to any power sales or similar agreement or arrangement, or in any other way likely to be available to the market? If yes, please provide details. [26]		□ Yes (if Yes, insert details in Excel spreadsheet) □ No
Reserve, i.e. Firm Capacity minus Market Capacity Provide details of the method by which the additional capacity is being obtained for delivery as *reserve*.		Insert details in Excel spreadsheet

[26] Please label any attachment clearly with the item number to which it refers.

Pre-Activation Lead Time, i.e. the maximum period required by the *non-scheduled generating unit* to be prepared for *activation.*	Insert details in Excel spreadsheet
Activation Lead Time, i.e. the maximum period required by the *non-scheduled generating unit* to *activate* in response to an *activation* instruction. This will involve *synchronising* the *non-scheduled generating unit* where required, and increasing its output to its Firm Capacity.	Insert details in Excel spreadsheet
De-Activation Lead Time, i.e. the maximum period required to reduce the *generation* output of the *non-scheduled generating unit* to the Market Capacity or *desynchronise* it.	Insert details in Excel spreadsheet
Power Output Range	***MW***
Method of Control, i.e. can the *non-scheduled generating unit* be switched to operate on *AGC* or under manual control?	□ *AGC* □ *Manual Control* Insert details in Excel spreadsheet
Minimum run-time, i.e. the minimum period of time the *non-scheduled generating unit* must *generate*	Insert details in Excel spreadsheet
Minimum off-time, i.e. the minimum period of time between the last time the *non-scheduled generating unit* was *generating* and the time at which the *non-scheduled generating unit* can re-commence *generating*	Insert details in Excel spreadsheet
Maximum run time, i.e. the maximum period the *non-scheduled generating unit* can *generate*.	Insert details in Excel spreadsheet

6.2 Constraints

Is the ***activation*** of the Reserve dependent on any third party, or the ***activation*** of any other ***reserve***? If so, identify that third party and provide details of the type of constraint.[27]	□ Yes □ No
Is the Recipient required to receive any approval from any Local, State or Federal Government body or Authority (e.g. Essential Services Commission, Environment Protection Authority, etc.) in order to make the Reserve available? If so, please provide details.[27]	□ Yes □ No
Is there any potential environmental, health, or safety risk (e.g. community risk/cost) to any party as a result of ***activating*** the Reserve? If so, please provide details.[27]	□ Yes □ No
Are there any other known or potential constraints on the ***activation*** of the Reserve? If so, please provide details.[27]	□ Yes □ No
Indicate which constraints might be interrelated.	

[27] Please label any attachment clearly with the item number to which it refers.

6.3 Minimum Technical Requirements

Can the Reserve be ***activated*** by instructions to a single point of contact with operational responsibility? If not, please provide details of how the Reserve *activation* instructions need to be delivered by AEMO.[27]	□ Yes □ No
Can the Reserve be ***activated*** as a block of not less than 5MW? If not, please detail the minimum size of the blocks in which it can be *activated*.[28]	□ Yes □ No
Can the Reserve be ***activated*** continuously for at least one hour? If not, please explain why and detail the minimum time during which the Reserve can be *activated* continuously.[28]	□ Yes □ No

6.4 24-hour Contacts for the purpose of responding to an Invitation to Tender:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

6.5 Contacts for operational communications:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

[28] Please label any attachment clearly with the item number to which it refers.

6.6 Performance Criteria

Copy and paste this table as many times as necessary for each non-scheduled generating unit.

Can the ***non-scheduled generating unit*** be prepared for activation within the proposed Pre-Activation Lead Time[29] at all times? If not, when will it be unable to do so and why?[28]	□ Yes □ No
Can the ***non-scheduled generating unit*** be ***activated*** within the Activation Lead Time[29] at all times? If not, when will it be unable to do so and why?[30]	□ Yes □ No
Can the ***non-scheduled generating unit*** reduce its ***generation*** output to the Market Capacity or ***desynchronise*** it within the proposed De-Activation Lead Time[31]? If not, when will it be unable to do so and why?[30]	□ Yes □ No

6.7 Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[30]	□ Yes □ No
Is the Reserve available at all times between 1 November 2019 to 31 March 2020? If not, please identify when it is, or might, not be available and why.[30]	□ Yes □ No

6.8 Reserve Reliability

Copy and paste this table as many times as necessary for each *non-scheduled generating unit*.

Has the ***non-scheduled generating unit*** undergone the following test in the last 3 months?	
Operation of the *non-scheduled generating unit* at the Firm Capacity[31] for not less than 1 hour, where: • The *non-scheduled generating unit* operated in a constant and stable manner; • The *non-scheduled generating unit* was prepared for *activation* within the proposed Pre-Activation Lead Time[31]; • The *non-scheduled generating unit synchronised* where required and increased its output to the Firm Capacity[31] within the Activation Lead Time[31]; • The *non-scheduled generating unit* reduced its *generation* output to the Market Capacity[31] or *desynchronise* it within the proposed De-Activation Lead Time[31]; and	□ Yes □ No

[29] As specified in the table in item 6.1.
[30] Please label any attachment clearly with the item number to which it refers.
[31] As specified in the table in item 6.1.

• All automatic *control systems*, for example, the *excitation control system* and *governor system*, operated in their automatic regulating mode. Time-stamped trend display printouts of the performance of the *non-scheduled generating unit* must be provided to AEMO as evidence of the completion of this test. [31]	
Can the Recipient provide any other evidence of the proven reliability of the Reserve?**[30]**	□ Yes □ No

6.9 Measurement of Reserve

Copy and paste this table as many times as necessary for each *non-scheduled generating unit*.

Provide details of the ***metering*** equipment the Recipient proposes to use to measure the offered Reserve**.**[32]	
Where is the ***metering*** equipment installed? If not installed yet, provide: • the date by which the *metering* equipment will be functional; and • the proposed location of the *metering* equipment.	
Is the *metering* equipment a type 1, 2 3 or 4 *metering installation*?	□ Type 1 □ Type 2 □ Type 3 □ Type 4 □ Vic AMI meter
Does the ***meter*** cover the entire range of the ***non-scheduled generating unit's*** capacity? If not, give details as to the calculation procedure or methodology (with examples) to be used to calculate the quantity of Reserve *activated* for each *trading interval* that the Reserve is to be *activated*.[32]	□ Yes □ No

[32] Please label any attachment clearly with the item number to which it refers.

7 Unscheduled Reserve – Load Reduction

For each of the Reserves the Recipient is in a position to offer, if it is to be provided by a reduction in *load*, the following information must be supplied:

7.1 Activation by Blocks[33]

AEMO requires that the Reserve that is made up of a number of reductions in *load,* which might be across one or more locations, be offered as a "Block" of at least 5MW. The *load* that makes up each Block must be situated in the same *region*.

The size of the Block being offered is:	……..MW

Copy and paste all of the following items and complete for each Block.

7.2 Common Characteristics of Block

The Block must contain the following common characteristics:

Pre-activation lead time, i.e., the time to prepare the Block for *activation*	Insert details in Excel spreadsheet
Activation lead time, i.e., the period between the issue of an *activation* instruction and the time at which the Block commences *activation*	Insert details in Excel spreadsheet
De-activation lead time, i.e., the period between the issue of an *activation* instruction and the time at which the Block ceases to be *activated* and commences to take supply of electricity	Insert details in Excel spreadsheet
Maximum continuous operation, i.e. the maximum time the Block can be *activated* continuously	Insert details in Excel spreadsheet
Minimum continuous operation, i.e. the minimum time the Block can be *activated* continuously	Insert details in Excel spreadsheet
Minimum time between ***activations***	Insert details in Excel spreadsheet
Which hours of the day is the Block available for ***activation***?	Insert details in Excel spreadsheet
Which days of the week is the Block available for ***activation***?	Insert details in Excel spreadsheet
Maximum number of consecutive days in a week that the Block is available for ***activation***	Insert details in Excel spreadsheet
Maximum number of days per week that the Block is available for ***activation***	Insert details in Excel spreadsheet
Maximum number of activations over the period 1 November 2019 to 31 March 2020 that the Block is available for ***activation***	

7.3 Details of Load Reduction

(Insert details in Excel spreadsheet)

The *Tenderer* must provide details of all the *NMI*s which, as at the *commencement date* or at any time during the *term,* are related to equipment, plant or processes owned, contracted or

[33] Copy this schedule as many times as is necessary so that each schedule contains the data related to one block only.

controlled by the *Reserve Provider* including *NMI*'s which are not related to the provision of *reserve*.

The *Tenderer* must also provide details of any battery supporting the *reserve*.

7.4 Ownership

For each *load* reduction, please identify the *load* by the number used in the table in **item 7.3** including NMI, and confirm whether the Recipient owns the facility being used to provide the Reserve. Where the Recipient does not own the relevant facility, provide evidence, including a copy of any contract by which the Reserve is being made available for provision to AEMO as Reserve. Please label any attachment clearly with the item number to which it refers.

7.5 Constraints

Is the ***activation*** of the Reserve dependent on any third party? If so, who that third party is and provide details of the type of constraint.[34]	□ Yes □ No
Is the Recipient required to receive any approval from any Local, State or Federal Government body or Authority (e.g. Essential Services Commission, Environment Protection Authority, etc.) in order to make the Reserve available? If so, please provide details.[34]	□ Yes □ No
Is there any potential environmental, health, or safety risk (e.g. community risk/cost) to any party as a result of ***activating*** the Reserve? If so, please provide details.[34]	□ Yes □ No
Are there any other known or potential constraints on the ***activation*** of the Reserve? If so, please provide details.[34]	□ Yes □ No

7.6 Minimum Technical Requirements

Can the Reserve be ***activated*** by instructions to a single point of contact with operational responsibility? If not, please provide details of how the Reserve *activation* instructions need to be delivered by AEMO.[34]	□ Yes □ No
Can the Reserve be ***activated*** as a block of not less than 5MW? If not, please detail the minimum size of the blocks in which it can be *activated*?[34]	□ Yes □ No
Can the Reserve be ***activated*** continuously for at least one hour? If not, please explain why and detail the minimum time during which the Reserve can be *activated* continuously.[34]	□ Yes □ No
Is there any maximum dispatch duration and if so, why?	

[34] Please label any attachment clearly with the item number to which it refers.

7.7 24-hour Contacts for the purpose of responding to an Invitation to Tender:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

7.8 Contacts for operational communications:

	Proposed	**Backup**
Name:		
Telephone No:		
Fax No:		
Email:		

7.9 Performance Criteria

Can the Block be prepared for ***activation*** within the proposed Pre-Activation Lead Time[35] at all times? If not, when will it be unable to be so prepared and why?[36]	□ Yes □ No
Can the Block be ***activated*** within the proposed Activation Lead Time[35] at all times? If not, when will it be unable to do so and why?[36]	□ Yes □ No
Can the Block cease providing Reserve and to recommence taking supply of electricity from the ***network*** within the proposed De-Activation Lead Time[35] at all times? If not, when will it be unable to do so and why?[36]	□ Yes □ No

[35] As specified in the table in item 7.2.
[36] Please label any attachment clearly with the item number to which it refers.

Will ***activation*** of the Reserve lead to any consequent increase in the rate at which electricity is taken from the ***network*** by any other equipment or process owned by a consumer whose ***load*** is included in the Block? If yes, has this effect been deducted from the offered Reserve? Please provide evidence if it has.[37]	□ Yes □ No

7.10 Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[37]	□ Yes □ No
Is the Reserve available at all times between 1 November 2019 to 31 March 2020? If not, please identify when it is, or might, not be available and why.[37]	□ Yes □ No

7.11 Reserve Reliability

Are there any written procedures that will be used to govern the process by which the Reserve will be provided to **AEMO**? If yes, do they align with the terms of the proposed contract? If the written procedures do not align with the terms of the proposed *reserve contract*, how does the Recipient intend to satisfy the terms of the proposed contract?[37] If there are no written procedures to be used to govern the process by which the Reserve will be provided to AEMO, how does the Recipient intend to satisfy the terms of the proposed contract?[37]	□ Yes □ No □ Yes □ No
Does the provision of Reserve rely on standby generation? ***If yes, provide test certificates or other evidence of satisfactory starts of each standby* generating unit*, indicating that the prime mover and energisation of the alternator of each standby* generating unit *were started recently without fail and the standby* generating unit generated *electricity for at least 1 hour.*** The evidence to be provided must indicate that each standby generating unit was tested within 30 days of the date of provision of the evidence.[37]	□ Yes □ No
Can the Recipient provide any other evidence of the proven reliability of the Reserve? (The evidence must not be more than 3 months old)[37]	

[37] Please label any attachment clearly with the item number to which it refers.

7.12 Measurement of Reserve

Provide details of the *metering* equipment the Recipient proposes to use to measure the Reserve.[37]	
Where is the ***metering*** equipment installed? If not installed yet, provide: • the date by which the *metering* equipment will be functional; and • the proposed location of the *metering* equipment.	
Is any of the ***metering*** equipment to be used a type 1, 2 3 or 4 ***metering installation***[38] or Vic AMI meter? If yes, please specify the load reduction to which the *metering installation* applies. "Vic AMI meter" means a smart meter installed in Victoria as part of the Victorian Government's Advanced Metering Infrastructure (AMI) Program	□ Type 1 □ Type 2 □ Type 3 □ Type 4 □ Vic AMI meter
For each piece of *metering* equipment intended to be used in the measurement of Reserve, provide the following:[39] • a list of the equipment the Recipient proposes be used in the determination of the quantity of Reserve *activated* on a *trading interval* basis; • the performance and characteristics of the equipment the Recipient proposes be used to determine the quantity of Reserve *activated;* • evidence as to the accuracy of each piece of *metering* equipment intended to be used in the measurement of Reserve; • details of the methodology the Recipient proposes to use to calculate on a *trading interval* basis the *activated* Reserve (with examples); • details of the method of validation for a claim for payment for Reserve provided, and the documentation the Recipient will provide to verify claims for payment; and • the *load* profile and any other relevant characteristics of each *load* reduction.	

7.13 Testing

The Recipient must complete a test of the pre-activation, activation and de-activation of the reserve under instruction from AEMO to AEMO's reasonable satisfaction by 1 December 2019. This test requires the Reserve Provider to perform the following actions in sequence (failure to perform these actions in sequence will constitute a failure to complete this test satisfactorily): • re-activate the reserve within the pre-activation lead time; • provide load reduction at a level in accordance with activation instructions issued by AEMO; and • de-activate under instructions from AEMO within the de-activation lead time.	

[38] See Schedule 7.2 of Chapter 7 of the NER

[39] Please label any attachment clearly with the item number to which it refers.

Is the Recipient able to submit the scheduled generating unit to testing by 1 December 2019? If not, why not?	□ Yes □ No

Recipient's Name _____

Recipient's Signature _____

Date _____

SCHEDULE 3 PRICES

Prices are required from Recipients who are submitting an EOI in respect of Short Notice Situations only.

1. Scheduled Reserve[40]

The Recipient offers the Reserve for the following charges:

Usage Charge (per MWh)	Insert details in Excel spreadsheet

2. Unscheduled Reserve[40]

The Recipient offers the Reserve for the following charges:

Pre-Activation Charge (per MW of *unscheduled reserve* per pre-activation instruction)[40]	Insert details in Excel spreadsheet
Usage Charge (per MWh)	Insert details in Excel spreadsheet

Recipient's Name _____

Recipient's Signature _____

Date _____

[40] Complete whichever is applicable.

SCHEDULE 4 CONSENT

[PLEASE PROVIDE THIS CONSENT ON YOUR LETTERHEAD]

To: [*Insert name and address and relevant contact person]*[41]

Re | Consent to Disclosure of Agreements and Arrangements

I, *[insert name of Recipient]*, HEREBY CONSENT to the disclosure to AEMO of any information you have relating to electricity supply and demand side management agreements or arrangements or any network support agreements or arrangements affecting the reserve that I may be offering to AEMO from time to time.

Please provide me with a copy of any correspondence sent to AEMO.

I, *[insert name and title]*, confirm that I am duly authorised to sign this consent on behalf of *[insert name of Recipient].*

_____ _____

(signed) (date)

[41] Copy this schedule as many times as is necessary so that AEMO is provided with the necessary consents to be able to contact all relevant persons.

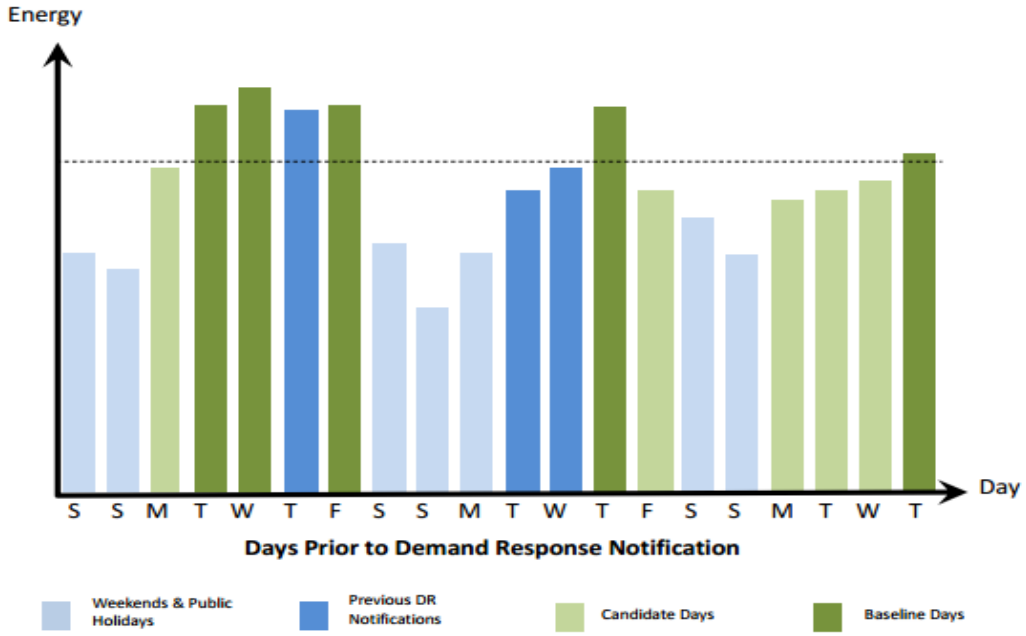
SCHEDULE 5 BASELINE CALCULATIONS

Baseline and delivered Demand Response

When a demand response event occurs the response calculated for payment of the usage charge is the difference between the metered quantity of the resource and the baseline energy for the resource, where the baseline energy is an estimate of what demand would have been had there been no demand response.

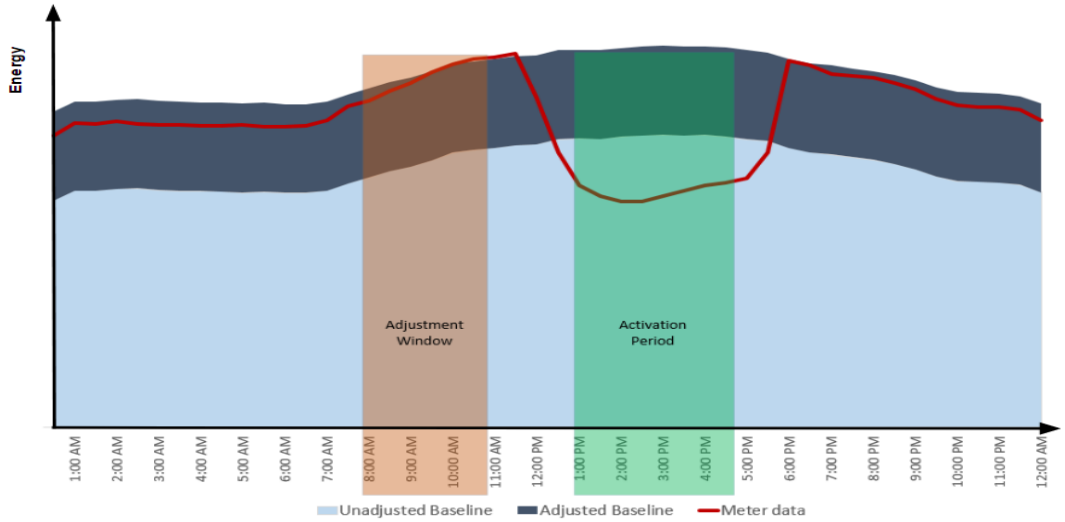
The following diagrams illustrate the core concepts and items used to generate a dynamic profile baseline. Please note that these diagrams are for illustration purposes only and do not accurately reflect the baseline for this activity. Key items include:

- Candidate and selected baseline days used to drive the unadjusted baseline
- Excluded days i.e. business days and not previous activation days



The following diagram further illustrates concepts used. Key items include:

- Activation period
- Adjustment window
- Unadjusted and Adjusted baseline



For the activation of demand response on a day, an unadjusted baseline energy is derived from meter data for a set number of prior qualifying days, collectively called the selected days. A qualifying day must satisfy requirements like not having Demand Response Activated on that day, or not being a weekend or holiday. The set of qualifying days is taken from the baseline window period.

The adjustment window is a time period prior to the activation of the demand response, and differences between metered data on the day of activation and a corresponding derived value from the selected days is used to determine an additive adjustment (which may be negative). This is added to the unadjusted baseline energy to give the baseline energy. The demand response in a trading interval is the amount by which metered demand is less than the baseline energy, though not exceeding the amount activated by AEMO.

The baseline explanations and formulas contained in this EOI and Panel Agreement assume a the provision of reserve on a weekday (excluding public holidays) basis. If the reserve provided differs from this, the baseline calculations/formulations set out below may need to be adjusted in the Panel Agreement.

The following table describes these terms.

Term	Description
adjustment window	A period of time prior to activation of demand response from which meter data is used to adjust the baseline to reflect conditions on the day of activation.
average actual adjustment window energy	The simple average of the metered energy over the adjustment window.
average baseline adjustment window energy	The simple average of the unadjusted baseline energy over the adjustment window.
baseline consumption methodology	A methodology used to calculate baseline energy for a demand response trading interval.
baseline energy	The MWh energy derived from a baseline consumption methodology and associated with a NMI included in a demand response for settlement purposes for a demand response trading interval. baseline energy = unadjusted baseline energy + additive adjustment

baseline window	The period of days preceding a demand response trading interval from which qualifying days are selected for the purpose of calculating baseline energy for that demand response trading interval. In this instance it is 45 calendar days. This time range is long enough to allow for a significant number of qualifying days but not so long as to create serious distortions due to changing seasons.
qualifying days	Calendar days within the baseline window which are not public holidays (in that location) and on which demand response events have not been called for the NMI.
selected days	A subset of the qualifying days within the baseline window associated with a demand response trading interval from which meter data is used for the purpose of calculating baseline energy for that demand response trading interval. The most recent 10 qualifying days within the baseline window. If less than 10 qualifying days exist but 5 or more qualifying days exist then use the number of qualifying days available. If less than 5 qualifying days are available then select those event days with the greatest metered energy during the trading interval corresponding to the current day demand response trading interval to make up the number of selected days to 5. Thus if there were only 3 qualifying days available then 2 event days would be selected to produce 5 days. The days with the greatest metered energy are used as these are less likely to be days in which demand response occurred during that particular trading interval and are therefore less likely to lower the baseline energy.
symmetric additive adjustment	An adjustment applied in baseline calculation to increase or decrease the baseline energy based on the average difference between predicted and metered energy during an adjustment window prior to a demand response interval. This is calculated as the average actual adjustment window energy – average baseline adjustment window energy. This may be positive or negative. The adjustment will be subject to a cap of 20% of the Reserve amount in the positive direction only.
unadjusted baseline energy	For a trading interval, the average metered values for the corresponding trading interval on each of the selected days.

Calculations

The calculation of the demand response for a trading interval is described as follows.

Where a resource is Activated to provide demand response on that day then it is necessary to use meter data for prior days to determine an unadjusted baseline which reflects an average historic consumption over the period of the demand response based on a set of prior selected days.

Unadjusted baseline calculation

$$b_t = \frac{1}{S} \sum_{i=1,2,..,S} c_{ti}$$

Where:

b = unadjusted baseline MWh for a given time interval (*t*)

i = one of *S* selected days

S = the set of selected days in the 45 calendar days immediately preceding the weekday on which reserve was Activated and for which the calculation is being made (the **45 day period**). The days in the 45 day period selected for the set will be based on weekdays on which reserve was not Activated (**Non-Activated**) and weekdays on which Reserve was Activated (**Activated**) and determined as follows:

Step 1 - This set of selected days normally comprise the 10 Non-Activated Days immediately preceding the weekday on which reserve was Activated and for which the calculation is being made.

Step 2 - If, in the 45 day period, there are less than 10 Non-Activated Days but 5 or more Non-Activated Days, then S comprises those Non-Activated Days.

Step 3 - If, in the 45 day period, there are less than 5 Non-Activated Days, then S comprises the Non-Activated Days plus one or more of the Activated Days in the 45 days period will added to the number of Non-Activated Days so that the total number of days in the set equals 5. The Activated Days added to the Non-Activated Days will be determined based on the level of demand during the trading intervals during the period of activation on the Activated Days (with the Activated Day with the highest demand during any trading interval during the period of activation on that Activated Day ranked highest and added to the Non-Activated Days, with the next highest ranked Activated Day added and so on, until the total number of days in the set equals 5). If 2 or more Activated Days are ranked the same based on the highest demand during any trading interval during the period of activation, the Activated Day closest in time to the weekday on which reserve was Activated and for which the calculation is being made will be ranked higher.

t = trading interval

c = MWh electricity demand for a given trading interval (*t*) occurring on one of the selected days

Relative Root Mean Squared Error (RRMSE)

AEMO may measure the accuracy of the unadjusted baseline by determining the unadjusted baseline's relative root mean squared error (RRMSE) by comparing the Reserve Provider's unadjusted baseline against the 60 days not being Activated Days immediately preceding the weekday on which reserve was activated and for which the calculation is being made and if they vary from each other by a value greater than or equal to 20%, AEMO may adjust the variables which are used to determine the unadjusted baseline to ones which AEMO determines, acting reasonably, more accurately reflects the Reserve Provider's typical demand.

Adjustment factor calculation

$$a = \frac{\sum_{t=s-8}^{t=s-3}(c_t - b_t)}{6}$$

Where:

a = adjustment factor (this may be positive or negative)

s = the start of the trading interval (*t*) during which the reserve has been activated and for which the calculation is being made

c = MWh electricity demand for a given time interval (*t*) during the period of reserve activation for which the calculation is being made.

s - n = trading interval n 30-min intervals before activation start time

An adjusted baseline is then determined by adding the adjustment factor – which may be positive or negative – to each value in the unadjusted baseline.

If the adjustment factor is a positive amount, the adjustment factor is limited to an amount equivalent to 20% of the amount of the *reserve.*

Adjusted baseline calculation

$$B_t = b_t + a$$

B = adjusted baseline MWh for a given trading interval (*t*)

Delivered reserve

The delivered reserve provided by the demand response in a trading interval is based on the difference between the adjusted baseline, representing what would have happened without a demand response, and the actual metered consumption, which should reflect the demand response.

$$D_t = B_t - c_t$$

D = quantity of Reserve Activated for a given trading interval (*t*).

c = MWh electricity demand for a given trading interval (*t*) during the period of reserve activation for which the calculation is being made.

Where *D* is more than the level specified in the relevant activation instruction, *D* = the level specified in the relevant activation instruction. Where *D* is less than zero, then *D* = 0.

Example of baseline calculations

Example of a the CAISO "10 of 10" Unadjusted Baseline for Weekdays Excluding Public Holidays

Consider an Activity is providing demand response on Tuesday 29th of the month for the trading interval ending 1330 hours for a NMI. In order to calculate the baseline energy, the last 10 days that are not public holidays, weekend days or previous activation days are used. These are shown in the table below (shaded days are selected days).

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	1	2	3	4	5	6

7	8 Activated Day	9	10 Activated Day	11	12	13
14	15	16 Activated Day	17	18	19	20
21	22 Activated Day	23	24	25 Holiday	26	27
28	29 **Reserve Activated**	30	31			

For these days the half hour ending 1330 hours metered energy is collected with these averaged to form the unadjusted baseline energy, as shown in the table below.

Date	Type	1 PM Meter Value
9 Jan	Weekday	840
11 Jan	Weekday	910
14 Jan	Weekday	800
15 Jan	Weekday	780
17 Jan	Weekday	810
18 Jan	Weekday	860
21 Jan	Weekday	900
23 Jan	Weekday	890
24 Jan	Weekday	910
28 Jan	Weekday	800

Total:	**8,500**
Unadjusted Baseline Energy (Total / 10)	**850**

Example of Symmetric Additive Adjustment

A symmetric additive adjustment allows the unadjusted baseline to be increased or decreased by the adjustment. In the example in the Table below the adjustment window comprises the 6 trading intervals (1 to 6) ending three hours before the start of the demand response interval, which runs from trading intervals 9 to 16.

	Adjustment Window								Activation Period							
Trading Interval	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Meter Read	5	6	7	9	10	11	12	14	8	10	12	14	13	12	14	16
Unadjusted Baseline Energy	2	2	4	6	8	8	10	12	14	15	20	21	20	20	21	22
Additive Adjustment	Average meter read = 8 Average unadjusted baseline energy = 5 Additive adjustment = 3								3	3	3	3	3	3	3	3
Adjusted Baseline Energy									17	18	23	24	23	23	24	25
Delivered Reserve									9	8	11	10	10	11	10	9

In this scenario, usage during the adjustment window is higher than the unadjusted baseline energy and the use of the additive adjustment results in a positive (higher) adjustment to the baseline energy. This example does not show the impact of the additive adjustment cap.

SCHEDULE 6 PROPOSED RERT PANEL AGREEMENT