Invitation to Tender

Services:	Long Notice RERT
Contact:	rert@aemo.com.au
Closing Date:	13 September 2019
Validity Period:	139 days from the Closing Date

Australian Energy Market Operator Limited
ABN 94 072 010 327
Level 22, 530 Collins Street
MELBOURNE VIC 3000
TEL: 03 9609 8000

Contents

SECTION A INVITATION TO TENDER

A.1 Background

AEMO is a company limited by guarantee. It has statutory functions under the National Electricity Law, National Gas Law and Rules made under those Laws, including:

- Market and system operator and national transmission planner for the National Electricity Market
- Market and system operator of the Victorian wholesale gas market
- Market operator of gas short term trading markets, gas trading exchanges and retail gas markets in eastern and southern Australia.

With its broad national focus for 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 Invitation to Tender

Under the National Electricity Rules (NER) AEMO must take all reasonable actions to ensure reliability of supply, and where practicable, AEMO must maintain power system security by negotiating and entering into reserve contracts. In doing so, AEMO must comply with the RERT principles and RERT guidelines.

(a) The Need for Long Notice RERT

AEMO may procure reserve through the creation of a panel of entities that may be called upon to tender for and enter into reserve contracts under certain circumstances where notice of projected shortfall is relatively short.

Alternatively, AEMO may also procure reserve through invitations to tender to ensure that reliability of supply in a region meets the reliability standard. The procedure AEMO will follow is detailed in the Procedure for the Exercise of the RERT.

The duration of the reserve period is expected to be between 1 November 2019 to 31 March 2020. This is indicative only and is not a fixed or final period and is for the purposes of determining what may be available (including by way of RERT). Closer to summer, before contracting for reserve, AEMO will re-run its forecasting models to determine what *reserve* is reasonably needed to meet the reliability standard and when. Accordingly, this period will be under continuous revision during the Long Notice RERT tender process up to the date of entering into agreements.

(b) Eligible Reserve

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 tender.

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 10MW.

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. If the proposed *generating unit* does not have a connection point in the region being sought, please contact us to discuss whether it could be suitable to provide *reserve*.

Subject to the elegibility 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.

Reserve specifications sought by AEMO are as follows:

1. available weekday (excluding public holidays) or
2. available 24 hours a day, 7 days a week

Reserve minimum is 10MW.

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.

(c) 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 to which the reserve contract relates.[1]
- *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 for trading intervals to which the reserve contract with AEMO relates.[2]

TENDERS ARE INVITED for the provision of the Reserve in the nature of additional generation or load reduction to support electricity reliability in Victoria. More particulars of AEMO's requirements are contained in **Section D**.

A.3 Glossary

In this document, capitalised words or phrases have the meanings set out below.

A word or phrase defined in the NER has the same meaning when used in this document.

[1] See Rule 3.20.3(h)
[2] See Rule 3.20.3(j)

Addendum	Any document issued after the date of this ITT and labelled as an “Addendum” to this ITT; collectively known as “Addenda”.
AEMO	Australian Energy Market Operator Limited ABN 94 072 010 327. References to AEMO include, where the context requires, AEMO’s employees, officers, contractors, consultants, advisers and other persons authorised to act for AEMO.
AEMO Project Manager	The person specified on the cover of this ITT.
Closing Date	The date specified on the cover of this ITT.
Invitation to Tender or ITT	This document, including its schedules, attachments and appendices.
NER	National Electricity Rules.
Reserve	The services and deliverables described in **Section D1**.
Statement of Compliance	The schedule in **Section E** by that title.
Tender	The offer submitted by a Tenderer to provide the Reserve.
Tenderer	A person responding to this ITT.
Tender Form	The document contained in **Section E**.
Tender Period	The time commencing between AEMO’s placement of this ITT on its website and the closing date and time for receipt of Tenders by AEMO.
Validity Period	The period specified on the cover of this ITT.
weekday	A day that is not a Saturday or Sunday or observed as a public holiday in the *region* in which the *reserve* is located.

SECTION B ABOUT THIS ITT

B.1 Legal Status

This Invitation to Tender is an invitation to treat and does not create any contractual or promissory rights.

AEMO is not obliged to accept any Tender or complete the process outlined in this ITT, or to acquire all or any Reserve.

AEMO may change the process or the description of the Reserve at any time by issuing an Addendum to Tenderers.

B.2 Confidentiality

This ITT may contain or be accompanied by confidential information about AEMO or its operations and markets, which is provided solely to enable Tenderers to submit Tenders. Tenderers must not use or disclose information in this document for any other purpose without AEMO's written consent. Tenderers must take all reasonable steps (both physically and electronically) to protect the confidentiality of this document and all communications relating to it.

B.3 Intellectual Property

Unless otherwise indicated, AEMO owns any intellectual property rights in this ITT. Tenderers are permitted to use and copy this document for the sole purpose of preparing and submitting a Tender.

B.4 No Warranty

Except to the extent required by law:

- AEMO makes no warranties or representations on the accuracy, adequacy or completeness of the ITT or any other information provided to a Tenderer; and
- AEMO is not liable in any way for any loss or damage of whatever kind (whether foreseeable or not) however arising (including by reason of negligence), incurred by any person in connection with this ITT or any other information provided to a Tenderer.

B.5 Queries and Communications with AEMO

If Tenderers find any discrepancy, error, or have any doubt as to the meaning or completeness of this ITT, or require clarification on any aspect of it, they should notify the AEMO Project Manager in writing, not less than 14 days before the Closing Date. AEMO may issue an Addendum to all Tenderers clarifying the discrepancy, error, doubt, or query (as the case may be) and may extend the Closing Date if AEMO considers it appropriate in all the circumstances.

No representation or explanation to Tenderers in relation to this ITT is taken to be included in the ITT unless it is contained in an Addendum.

All communications by Tenderers to AEMO about matters connected with this ITT must be made to the AEMO Project Manager unless otherwise authorised by the AEMO Project Manager.

B.6 Acceptance of Tender

No Tender shall be taken to have been accepted by AEMO until AEMO has notified the successful Tenderer of its acceptance in writing and a contract of the type contemplated by Section C.11 has been entered into.

B.7 Conditions of Submitting a Tender

Tenderers wishing to submit a Tender must comply with Section C. Tenderers must ensure that their employees, contractors, agents and consultants involved in the

preparation or submission of a Tender are aware of, and comply with, all requirements applicable to Tenderers.

SECTION C TENDER REQUIREMENTS AND EVALUATION

C.1 Submitting a Tender

A Tender constitutes an offer by the Tenderer to provide the Reserve that is capable of acceptance by AEMO. Tenders must meet the following requirements:

- All applicable sections of the Tender Form must be completed, including all relevant schedules.
- The Tender must be dated and signed (in the case of a body corporate, by a duly authorised officer).
- All supporting documentation evidencing the matters specified in Schedule 4 to the Tender Form must be included with the Tender.
- If a Tenderer cannot comply with any element of the Tender Form or schedules, the Tenderer must specify in the Statement of Compliance the nature of, and reasons for, the non-compliance.
- Three electronic copies of each Tender 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

- Additional documentation may be submitted with a Tender if, in the Tenderer's opinion, it is necessary for a proper understanding of its Tender.

AEMO may decide to accept late or non-conforming Tenders, but is not obliged to do so under any circumstances.

C.2 Tenderers to Perform own Due Diligence

By submitting a Tender, a Tenderer is taken to have:

- satisfied itself of the requirements of this ITT;
- made all reasonable enquiries, investigation and assessment of available information relevant to the risks, contingencies and other circumstances relating to the Reserve; and
- satisfied itself as to the correctness and sufficiency of its Tender.

C.3 Tenders Commercial-in-Confidence

Tenders will be treated as confidential and will not be disclosed outside AEMO except:

- as reasonably required for the purpose of assessing the proposed Reserve;
- required by law, or in the course of legal proceedings;
- to persons nominated by participating jurisdictions for the purpose of AEMO consulting with participating jurisidistions and agreeing cost-sharing arrangements between regions (if applicable) as required under the National Electricity Rules;
- requested by any regulatory or other government authority having jurisdiction over AEMO, or its activities; or
- to AEMO's external advisers, consultants or insurers,

in which case the Tenderer is deemed to have consented to this disclosure by providing the Tender.

C.4 No Anti-Competitive Conduct

Tenderers must not:

- discuss this ITT with any other person they know has received this ITT or might reasonably be expected to have received it; or
- engage in any conduct that is designed to, or might have the effect of, lessening competition in the supply to AEMO of the Reserve.

Tenderers who wish to engage in legitimate teaming or sub-contracting discussions with persons who might deliver the Reserve must obtain AEMO's prior approval to do so.

C.5 No Improper Assistance or Inducements

Tenderers must not seek or accept the assistance of employees, contractors or consultants of AEMO in the preparation of their Tenders and must not make any offers or engage in any activities that are likely to be perceived as, or may have the effect of, influencing the outcomes of the ITT process. Tenderers must at all times comply with all applicable laws in relation to the offering of unlawful inducements in connection with their Tenders.

C.6 No Reimbursement for Costs of Tender

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

C.7 No Publicity

Tenderers must not make any public or media announcement about this ITT or the outcome of this ITT without AEMO's prior written permission except where the tenderer who is an aggregator makes an announcement to genuinely attempt to sign up end-customers to provide an aggregated demand response reserve. In such cases the following formulation must be used:

"[Name of Tenderer] seeks to respond to an Invitation to Tender issued by the Australian Energy Market Operator to source electricity demand reduction (inclusive of embedded generation) from electricity customers for the upcoming summer season. As an aggregator of electricity demand response, we are looking for electricity consumers who are willing to reduce or shift their electricity consumption during the upcoming summer months so that we can bid for AEMO's tender. Please note that there is no exclusive arrangement between us and AEMO and there may be other aggregators and retailers who may wish to bid for the tender on the basis of your electricity demand reduction."

C.8 Disqualification

AEMO may, in its absolute discretion, immediately disqualify a Tenderer from further participation in the tendering process if AEMO believes that Tenderer has contravened a requirement of Section B or Section C.

C.9 Tender Evaluation Process and Timing

All Tenders will be assessed against the criteria detailed in Table 1 (the order of the criteria does not reflect order of importance or relevance):

Table 1: Tender Evaluation Criteria

Financial Position	Tenderer's corporate credentials, financial stability and ability to fund the construction of any new plant or equipment that will be used to provide the Reserve.
Technical Capability	Tenderer's capability to operate any existing or new plant or equipment that will be used to provide the Reserve in an efficient, safe, secure and reliable manner.

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 to which the reserve contract relates. • 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 to which the reserve contract relates.
Departures from the Contract Conditions and Service Specifications	The number and materiality of departures from the conditions in the proposed contract referred to in **Section C.11** and the number and materiality of the departures from AEMO's requirements detailed in **Section D**.
Past performance	The performance of the Tenderer (or related or associated parties) under current or past RERT contracts.
Value for Money	Attractiveness of the Tender with respect to value for money over the term of the proposed contract referred to in **Section C.11** considering the total cost and benefits.

AEMO may, in its absolute discretion, accept none, any, or any combination of offers contained in Tenders.

AEMO may, in its absolute discretion, consider non-conforming Tenders provided that any departure from the requirements of this ITT is identified and fully described in the Statement of Compliance.

AEMO's indicative timing for the remainder of the ITT process is set out below. AEMO may change these times or steps, or stop or suspend the ITT process at any time.

Description	**Indicative dates**
Closing Date	13 September 2019
Tender evaluation completed	4 October 2019
Finalise Long Notice Agreements	1 November 2019

AEMO is targeting execution prior to 5 November 2019 for readiness for the summer period. Should AEMO determine not to select any particular Tender by this date, we may nevertheless contact the Tenderer at a later date to conclude negotiations (with agreed variations) at a later date being no later than 31 March 2020.

C.10 Clarification

If AEMO considers that a Tender is unclear, it may seek clarification or further information from Tenderers at any time during the evaluation process. Tenderers may be required to attend meetings with AEMO at a time and place to be notified by the AEMO Project Manager to review and discuss any such matters. Failure to supply clarification to AEMO's satisfaction may result in the disqualification of a Tender.

AEMO has no obligation to seek clarification of any Tender, and may disregard any information that it considers to be unclear.

C.11 Contract Execution

AEMO's proposed form of contract for the Reserve is set out in the Attachment.

Tenderers should not include their own standard or general conditions of contract with their Tenders. Tenderers who wish to seek changes to the proposed form of contract should provide a copy of the document showing the exact form of the requested change, tracked in Microsoft Word.

Tenderers will be taken to have accepted the contract in its current form unless they include a tracked copy of the contract marked in this way.

AEMO requires the terms of the contract to be concluded and the document signed by the successful Tenderer within the Validity Period. AEMO may reconsider rejected Tenders if the contract is not finalised within the Validity Period.

C.12 No Obligation to Debrief

AEMO is under no obligation to debrief any Tenderer as to AEMO's evaluation of Tenders, or give any reason for the acceptance of or non-acceptance of any Tender.

SECTION D REQUIREMENTS FOR RESERVE

D.1 Description of the Reserve

The Reserve can be provided in three ways:

- Through the availability of additional generation (either by using existing plant, or by installing new plant);
- Through load reduction; or
- A combination of additional generation and load reduction.

AEMO has prepared this ITT and the proposed contract referred to in Section C.11 in anticipation that the Service will be provided during weekdays. However, if a Tenderer is capable of providing the Service during weekends and public holidays, please note that in your offer and we can discuss the details with you further including the manner that this will be reflected in payment calculations and other terms of any resulting agreement.

The technical characteristics of the Reserve are detailed in **SCHEDULE 2**.

D.2 Regulatory Issues

Tenderers are expected to be familiar with the details of the electricity regulatory framework and the operations of the National Electricity Market. AEMO wishes to draw Tenderers' attention to the following issues:

- Depending on the solution offered, Tenderers might need to hold, or be in the process of acquiring, a generation or retail licence from the relevant jurisdiction (eg the Essential Services Commission (ESC)).
- Tenderers may also need to become registered participants under the NER.
- If Tenderers are proposing to install additional plant as part of their offer, they will need to consult with appropriate network service providers to arrange connection of their plant to the network. Further details of the network connection process are available in Chapter 5 of the NER and AEMO's website.

D.3 Approvals

AEMO expects Tenderers to be familiar with any planning and environmental approvals required, especially if they are proposing to install new plant to provide the Reserve and are fully responsible to address any such issues.

D.4 Payment Structure

Tenderers are expected to separately price each type of Reserve offered. AEMO contemplates paying an Availability Charge over the term of the proposed contract referred to in Section C.11, which will be subject to adjustment for unavailability and non-delivery.

(a) Availability Charge

An Availability Charge applies where significant overheads are incurred in making the Reserve available. It must be priced as a lump sum amount ($) for the duration of the agreement. However, it will be payable on a weekly basis in arrears for each day when the Reserve is available to AEMO, regardless of whether AEMO has dispatched or activated it. When evaluating, AEMO may treat responses with a relatively lesser proportion of costs allocated to the Availability Charge more favourably, all else being equal.

The amount and the payment of the Availability Charge can be affected in 3 ways:

1. Testing

The provider must complete a test of the reserve, at the providers cost, by 1 December 2019 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, at the provider's cost. The retest must be completed by 15 December 2019. 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 100MW, but the highest performing test result yields a reserve of 90MW, the contracted reserve amount will be 90MW and the Availability Charge will be 90% of the tendered lump sum amount.

2. Advice that reserve is unavailable

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 amount advised by the provider is less than 100% of the contracted amount the reserve will be considered unavailable and the Availability Charge will not be payable for each day until the provider notifies AEMO that the full contracted reserve is available.

3. Non-delivery of reserve

If AEMO issues an instruction to activate or dispatch the reserve for a weekday and the reserve provider has not notified AEMO that the reserve is unavailable and the amount of reserve activated or dispatched is 80% or less of the amount instructed, the reserve will be considered unavailable for a period pursuant to Item 5 of the relevant schedule to the pro-forma Long Notice agreement.

For this period, the Availability Charge will not be payable and where paid, may be required to be repaid under Item 8 of the relevant schedule. A bank guarantee may be required to cover this repayment amount.

If the provider fails to activate or dispatch the reserve to more than 80% of the amount instructed on any weekday, AEMO may immediately terminate the reserve contract without charge.

(b) Pre-Activation Charge

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 be regarded as a new "instruction" under the proposed reserve contract (and, therefore, will not incur an additional charge).

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

(c) 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 (e) 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.

(d) Early Termination Charge

The early termination charge applies only where AEMO unilaterally opts to terminate a reserve contract prematurely for convenience and will decline *pro-rata* as the term of the agreement progresses towards its end. One termination price will apply for each reserve contract.

(e) 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[3], 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 herein 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 6.

D.5 Security

AEMO may require a bank guarantee to be provided to secure AEMO's right to be repaid Availability Charges and preactivation charges.

[3] 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

where the reserve was not available or is deemed to have not been available.

SECTION E TENDER FORM

Tender for Long Notice RERT

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

From:

Tenderer (full company name):		
ABN:		
Address:		
Website:		
Contact Person:	Name:	
	Title:	
	Telephone No:	
	E-mail:	

1. Offer

The Tenderer offers to provide to AEMO the Reserve described in Schedule 2:

- in accordance with the requirements of the ITT, subject only to any variations specified in the Statement of Compliance in **Schedule 1**; and
- at the price or prices specified or determined in accordance with **Schedule 3**.

2. Agency/Joint Tender

The Tenderer is/is not[4] acting as agent or trustee for another person, or lodging a Tender jointly with other persons.

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

3. Supporting Information

The Tenderer provides in Schedule 4 details of its capability to provide the Reserve, as required by AEMO to support this Tender.

4. Validity Period

This Tender constitutes an offer to provide the Reserve that remains open for acceptance by AEMO for the Validity Period.

5. Contract (optional)

The Tenderer provides in Schedule 5 a copy of AEMO's proposed contract with the Tenderer's requested changes tracked in the document.

[4] Delete as appropriate.

6. Addenda to ITT (include only if Addenda received)

In the preparation of its Tender, the Tenderer acknowledges having received the following Addenda to the ITT:

Addendum No. Dated

Addendum No. Dated

Addendum No. Dated

NOTE: Capitalised terms in this Tender Form and Schedules are defined in the ITT.

Dated this day of 201

EXECUTED by **[NAME OF TENDERER]** 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)

SCHEDULE 1 STATEMENT OF COMPLIANCE

[Delete whichever is not applicable]

[Name of Tenderer] confirms that this Tender conforms in every respect with the Invitation to Tender.

OR

[Name of Tenderer] confirms that this Tender conforms in every respect with the Invitation to Tender **other than** in the following respects:

-
-

SCHEDULE 2 DESCRIPTION OF RESERVE

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

- *Scheduled reserve – generation* increase, complete S2.1;
- *Scheduled reserve – load* reduction, complete S2.2;
- *Unscheduled reserve – generation* increase, complete S2.3;
- *Unscheduled reserve – load* reduction, complete S2.4.

S2.1 Scheduled Reserve

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:

(a) Details of Scheduled Generating Unit

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

<table>
<tr><td rowspan="2">Description of scheduled generating unit</td><td colspan="2">Name or identification number: Insert details in Excel spredsheet</td></tr>
<tr><td colspan="2">Power Station: Insert details in Excel spredsheet</td></tr>
<tr><td colspan="2">Classification of scheduled generating unit</td><td>□ Market generating unit
□ Non-market generating unit
Insert details in Excel spredsheet</td></tr>
<tr><td colspan="2">Connection Point</td><td></td></tr>
<tr><td colspan="2">Local Network Service Provider</td><td></td></tr>
<tr><td colspan="2">Is the Recipient the Registered Participant in respect of the scheduled generating unit?</td><td>□ Yes
□ No</td></tr>
<tr><td colspan="2">Does the Recipient own the scheduled generating unit?

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,[5] including a copy of any contract by which the scheduled generating unit is being made available for the provision of Reserve.</td><td>□ Yes
□ No</td></tr>
<tr><td colspan="2">Firm Capacity, ie the generating capacity available from the scheduled generating unit.</td><td>Insert details in Excel spredsheet</td></tr>
</table>

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

Market Capacity, ie the *generating* capacity available from the *scheduled generating unit* subject to: • *dispatch offers;* or • any other agreement or arrangements where *generating* capacity is made available, including any electricity supply agreement or arrangement or any other similar agreement or arrangement.		Insert details in Excel spredsheet
Reserve, ie 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*.[5]		Insert details in Excel spredsheet
Minimum Operating Level, ie the minimum *loading level* at which the *scheduled generating unit* can operate continuously.		Insert details in Excel spredsheet
Enablement Lead Time, ie 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, ie 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, ie "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, ie 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, ie the minimum period the *scheduled generating unit* must *generate.*	Insert details in Excel spredsheet
Minimum off-time, ie 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, ie the maximum period the *scheduled generating unit* can *generate*.	Insert details in Excel spredsheet

(b) 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.[6]	□ 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.[6]	□ Yes □ No
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.[7]	□ Yes □ No
Are there any other known or potential constraints on the *dispatch* of the Reserve? If so, please provide details.[7]	□ Yes □ No
Indicate which constraints might be interrelated.[7]	

(c) 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*.[7]	□ Yes □ No
Can the Reserve be *dispatched* as a block of not less than 10MW? If not, please detail the minimum size of the blocks in which it can be *dispatched*.[7]	□ Yes □ No
Can the Reserve be *dispatched* continuously for at least 1 hour?	□ Yes □ No

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

If not, please explain why and detail the minimum time during which the Reserve can be *dispatched* continuously.[7]	
Is there any maximum *dispatch* duration and if so, why?	

(d) 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[8], be in a position to *synchronise* and increase *generation* for Fast Start Plant[8] or be in a position to increase output above the Market Capacity within the proposed Enablement Lead Time[8] at all times? If not, when will it be unable to do so and why?[9]	□ Yes □ No
Can the *scheduled generating unit* reduce its *generation* output to the Market Capacity or *desynchronise* it within the proposed Disablement Lead Time[8] at all times? If not, when will it be unable to do so and why?[9]	□ 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?[8] If not, when will it be unable to do so and why?[9]	□ Yes □ No

(e) Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[9]	□ 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.[9]	□ Yes □ No

(f) Reserve Reliability

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

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

Has the *scheduled generating unit* undergone the following test in the last 3 months? Testing might be required as a condition of contract but if the *scheduled generating unit* 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. Operation of the *scheduled generating unit* at the Firm Capacity[10] 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[10] and the Market Capacity[10] within the proposed Enablement Lead Time[10]; • The *scheduled generating unit* reduced its *generation* output to the Market Capacity[10] or *desynchronised* it within the proposed Disablement Lead Time[10]; 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.[11]	□ Yes □ No
Can the Recipient provide any other evidence of the proven reliability of the Reserve?[11]	□ Yes □ No
Is the Recipient able to submit the *scheduled generating unit* to testing by 1 December 2019? **If not, why not?**	□ Yes □ No

(g) 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.[11]	
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.	

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

Is the *metering* equipment a type 1, 2, 3 or 4 *metering installation*[12] or Vic AMI meter? "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
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*.[11]	□ Yes □ No

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

S2.2 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:

(a) Activation by Blocks[13]

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 10MW are preferred but AEMO will consider smaller blocks at its discretion. 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.

(b) Common Characteristics of Block

The Block must contain the following common characteristics:

Enablement Lead Time, ie, the time required for the Block to be prepared for *dispatch*	Insert details in Excel spredsheet
Disablement Lead Time, ie the time required for the Block cease providing Reserve and to recommence taking supply of electricity from the *network*.	Insert details in Excel spredsheet
Maximum continuous operation, ie the maximum time the Block can be *dispatched* continuously	Insert details in Excel spredsheet
Minimum continuous operation, ie the minimum time the Block can be *dispatched* continuously	Insert details in Excel spredsheet
Minimum time between *dispatches*	Insert details in Excel spredsheet
Which hours of the day is the Block available for *dispatch*?	Insert details in Excel spredsheet
Which days of the week is the Block available for *dispatch*?	Insert details in Excel

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

	spredshee t
Maximum number of consecutive days in a week that the Block is available for *dispatch*	Insert details in Excel spredshee t
Maximum number of days per week that the Block is available for *dispatch*	Insert details in Excel spredshee t
Maximum number of *dispatches* over the period 01 November 2019 to 31 March 2020	

(c) Details of Load Reduction

(Insert details in Excel spredsheet)

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 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*.

(d) Ownership

For each *load* reduction, please identify the *load* by the number used in the table in **item (c)** above inlcuding NMI, and confirm whether the Recipient owns or controls the facility being used to provide the Reserve. Please label any attachment clearly with the item number to which it refers.

(e) 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.[14]	□ 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.[14]	□ 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.[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

(f) 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 10MW? 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 1 hour? If not, please explain why and detail the minimum time during which the Reserve can be *dispatched* continuously.[14]	□ Yes □ No
Is there any maximum *dispatch* duration and if so, why?	

(g) Performance Criteria

Can the Block be prepared for *dispatch* within the proposed Enablement Lead Time[15] at all times? If not, when will it be unable to be so prepared and why?[16]	□ Yes □ No

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

Can the Block cease providing Reserve and to recommence taking supply of electricity from the *network* 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
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.[16]	□ Yes □ No

(h) 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.[17]	□ Yes □ No

(i) Reserve Reliability

Can the Recipient provide any evidence of the proven reliability of the Reserve? (The evidence must not be more than 3 months old).[18] 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.	

(j) Measurement of Reserve

Provide details of the *metering* equipment the Recipient proposes to use to measure the Reserve.[17]	
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.	

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

Is any of the *metering* equipment to be used a type 1, 2 3 or 4 *metering installation*[19] or Vic AMI meter? If yes, please specify the *load* reduction to which the *metering installation* applies.[17] "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
Provide details of any Supervisory Control and Data Acquistion (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: [20] • a list of the equipment the Recipient proposes be used in the determination of the quantity of Reserve *dispatched* on a *trading interval* basis; • average daily load (maximum demand (MW) and energy consumption (MWh) for each month during the period 1 November to 31 March in the preceding 3 years; • if the Recipient is in control of more than one metered load within the region (irrespective of whether it is being offered as Reserve), details of such loads including location, retailer/metering details, average daily load (maximum demand (MW) and energy consumption (MWh) for each month during the period 1 November to 31 March in the preceding 3 years; • 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.	

(k) 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. 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	

[19] See Schedule 7.2 of Chapter 7 of the NER.
[20] Please label any attachment clearly with the item number to which it refers.

• 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

S2.3 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:

(a) 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 spredsheet
	Power Station: Insert details in Excel spredsheet
Classification of *non-scheduled generating unit*	□ *Market generating unit* □ *Non-market generating unit* Insert details in Excel spredsheet
Connection Point	Insert details in Excel spredsheet
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*? 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.[21]	□ Yes □ No
Firm Capacity, ie the *generating* capacity available from the *non-scheduled generating unit*.	Insert details in Excel spredsheet
Market Capacity, ie 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 in the Excel spredsheet. [21]	□ Yes (if Yes, insert details in Excel spredsheet) □ No
Reserve, ie 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 spredsheet
Pre-Activation Lead Time, ie the maximum period required by the *non-scheduled generating unit* to be prepared for *activation.*	Insert details in Excel spredsheet

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

Activation Lead Time, ie 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 spredsheet
De-Activation Lead Time, ie 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 spredsheet
Power Output Range	***MW***
Method of Control, ie can the *non-scheduled generating unit* be switched to operate on *AGC* or under manual control?	□ *AGC* □ ***Manual Control*** Insert details in Excel spredsheet
Minimum run-time, ie the minimum period of time the *non-scheduled generating unit* must *generate*	Insert details in Excel spredsheet
Minimum off-time, ie 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 spredsheet
Maximum run time, ie the maximum period the *non-scheduled generating unit* can *generate*.	Insert details in Excel spredsheet

(b) 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.[22]	□ 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.[22]	□ 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.[22]	□ Yes □ No
Are there any other known or potential constraints on the *activation* of the Reserve? If so, please provide details.[22]	□ Yes □ No
Indicate which constraints might be interrelated.	

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

(c) 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*.[22]	□ Yes □ No
Can the Reserve be *activated* as a block of not less than 10MW? If not, please detail the minimum size of the blocks in which it can be *activated*.[23]	□ Yes □ No
Can the Reserve be *activated* continuously for at least 1 hour? If not, please explain why and detail the minimum time during which the Reserve can be *activated* continuously.[23]	□ Yes □ No

(d) 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[24] at all times? If not, when will it be unable to do so and why?[23]	□ Yes □ No
Can the *non-scheduled generating unit* be *activated* within the Activation Lead Time[24] at all times? If not, when will it be unable to do so and why?[25]	□ 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[26]? If not, when will it be unable to do so and why?[25]	□ Yes □ No

(e) Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[25]	□ 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.[25]	□ Yes □ No

(f) Reserve Reliability

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

[23] Please label any attachment clearly with the item number to which it refers.
[24] As specified in the table in item 6.1.
[25] Please label any attachment clearly with the item number to which it refers.
[26] As specified in the table in item 6.1.

Has the *non-scheduled generating unit* undergone the following test in the last 3 months? Testing might be required as a condition of contract but if the *non-scheduled generating unit* 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.	
Operation of the *non-scheduled generating unit* at the Firm Capacity[26] 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[26]; • The *non-scheduled generating unit synchronised* where required and increased its output to the Firm Capacity[26] within the Activation Lead Time[26]; • The *non-scheduled generating unit* reduced its *generation* output to the Market Capacity[26] or *desynchronise* it within the proposed De-Activation Lead Time[26]; 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 *non-scheduled generating unit* must be provided to *AEMO* as evidence of the completion of this test. [26]	□ Yes □ No
Can the Recipient provide any other evidence of the proven reliability of the Reserve?[25]	□ Yes □ No
Is the Recipient able to submit the scheduled generating unit to testing by 1 December 2019 **?** **If not, why not?**	□ Yes □ No

(g) 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.[27]	
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.	

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

Is the *metering* equipment a type 1, 2 3 or 4 *metering installation*[28] **or Vic AMI meter**? "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
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*.[27]	□ Yes □ No

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

S2.4 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:

(a) Activation by Blocks[29]

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 10MW are preferred but AEMO will consider smaller blocks at its discretion. 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.

(b) Common Characteristics of Block

The Block must contain the following common characteristics:

Pre-activation lead time, ie, the time to prepare the Block for *activation*	Insert details in Excel spredsheet
Activation lead time, ie, the period between the issue of an *activation* instruction and the time at which the Block commences *activation*	Insert details in Excel spredsheet
De-activation lead time, ie, 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 spredsheet
Maximum continuous operation, ie the maximum time the Block can be *activated* continuously	Insert details in Excel spredsheet
Minimum continuous operation, ie the minimum time the Block can be *activated* continuously	Insert details in Excel spredsheet
Minimum time between *activations*	Insert details in Excel spredsheet

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

Which hours of the day is the Block available for *activation*?	Insert details in Excel spredsheet
Which days of the week is the Block available for *activation*?	Insert details in Excel spredsheet
Maximum number of consecutive days in a week that the Block is available for *activation*	Insert details in Excel spredsheet
Maximum number of days per week that the Block is available for *activation*	Insert details in Excel spredsheet
Maximum number of activations over the period 1 November 2019 to 31 March 2020 that the Block is available for *activation*	

(c) Details of Load Reduction

(Insert details in Excel spredsheet)

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 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*.

(d) Ownership

For each *load* reduction, please identify the *load* by the number used in the table in **item (c)** above including NMI, and confirm whether the Recipient owns or controls 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.

(e) 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.[30]	□ 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.[30]	□ 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.[30]	□ Yes □ No
Are there any other known or potential constraints on the *activation* of the Reserve? If so, please provide details.[30]	□ Yes □ No

(f) 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*.[30]	□ Yes □ No
Can the Reserve be *activated* as a block of not less than 10MW? If not, please detail the minimum size of the blocks in which it can be *activated*?[30]	□ Yes □ No
Can the Reserve be *activated* continuously for at least 1 hour? If not, please explain why and detail the minimum time during which the Reserve can be *activated* continuously.[30]	□ Yes □ No
Is there any maximum *dispatch* duration and if so, why?	

(g) Performance Criteria

Can the Block be prepared for *activation* within the proposed Pre-Activation Lead Time[31] at all times?	□ Yes □ No

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

If not, when will it be unable to be so prepared and why?[32]	
Can the Block be *activated* within the proposed Activation Lead Time[31] at all times? If not, when will it be unable to do so and why?[32]	□ 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[31] at all times? If not, when will it be unable to do so and why?[32]	□ Yes □ No
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.[33]	□ Yes □ No

(h) Reserve Availability

Is the Reserve established and available now? If not when will it be established and available?[33]	□ 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.[33]	□ Yes □ No

(i) Reserve Reliability

Does the provision of Reserve rely on standby generation/battery? ***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 or in the case of a battery, that it was successfully discharged and the duration.*** Any evidence provided must indicate that each standby generating unit/battery was tested within 30 days of the date of provision of the evidence.[33] If there is no evidence of testing is able to be provided, clearly state that this is the case and the reason why.	□ 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).[33] Testing might be required as a condition of contract but if the facility that 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.	

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

(j) Measurement of Reserve

Provide details of the *metering* equipment the Recipient proposes to use to measure the Reserve.[33]	
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*[34] 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
Provide details of any Supervisory Control and Data Acquistion (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:[35] • a list of the equipment the Recipient proposes be used in the determination of the quantity of Reserve *activated* on a *trading interval* basis; • average daily load (maximum demand (MW) and energy consumption (MWh) for each month during the period 1 November to 31 March in the preceding 3 years; • if the Recipient is in control of more than one metered load within the region (irrespective of whether it is being offered as Reserve), details of such loads including location, retailer/metering details, average daily load (maximum demand (MW) and energy consumption (MWh) for each month during the period 1 November to 31 March in the preceding 3 years;; • 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.	

[34] See Schedule 7.2 of Chapter 7 of the NER
[35] Please label any attachment clearly with the item number to which it refers.

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

SCHEDULE 3 PRICING

S3.1 Charges

Insert details in Excel spredsheet for the following charges

- Availability Charges for each Reserve (Please provide as a lump sum for the period the reserve is available under the agreement and also a daily availability charge being the lump sum divided by the number of days the reserve will be available)
- Pre-activation Charges ($/pre-activation instruction)
- Usage Charges ($/MWh)
- Early Termination Charges (this only applies to the Availability Charge and should be scaled based upon the remaining duration of the reserve period after AEMO gives notice to terminate for convenience)

SCHEDULE 4 SUPPORTING INFORMATION

In support of its Tender, the Tenderer must provide the following information:

S4.1 General Corporate and Financial Background

The Tenderer provides details of general corporate background, including details of corporate structure, any related corporate bodies and other associate entities.

S4.2 Financial Stability

The Tenderer provides details of:

- Credit rating (or equivalent);
- Key features in the financial statements, such as current ratio, total equity size, last 1-2 year cash flow; and
- Any other information that could have a bearing on its financial position.

S4.3 Insurance

The Tenderer provides details of the insurance program proposed it is proposing in respect of the provision of the Reserve.

S4.4 Credibility and feasibility of Option

The Tenderer provides evidence that the Reserve it is proposing are credible and feasible, including:

- load flow studies or other applicable studies;
- if applicable, details of how the Tenderer proposes to overcome any contacting, connection application, planning and environmental and any other challenges by 1 December 2019; and
- any other relevant information that supports the tendered Reserve.

SCHEDULE 5 PROPOSED CONTRACT CHANGES

[Delete whichever is not applicable]

[Name of Tenderer] does not propose any changes to the form of contract proposed by AEMO with the Invitation to Tender.

OR

[Name of Tenderer] has included a Word version of AEMO's form of contract with the Tenderer's requested changes tracked.

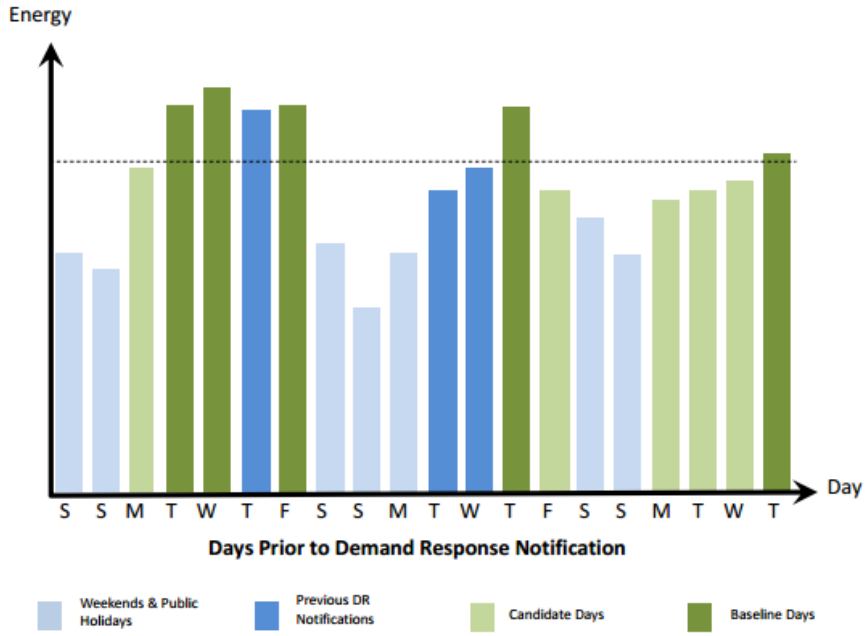
SCHEDULE 6 BASELINE CALCULATIONS

1. 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.

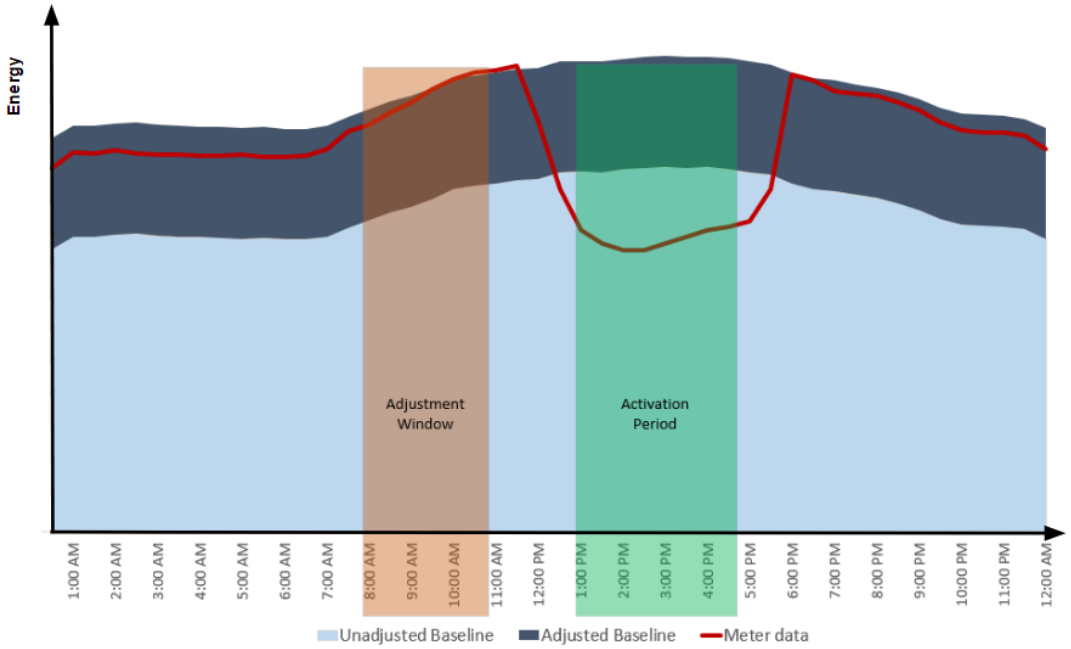
The following diagrams illustrate the core concepts and items used to generate a dynamic profile baseline. Please note that these diagrams are for illustration purposes only and do not accurately reflect the baseline for this activity. Key items include:

- 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 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 weekdays 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.

2. 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.

3. 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.

ATTACHMENT: CONTRACT TO BE EXECUTED