Invitation to Tender

Interim Reliability Reserves

Request Form

**DETAILS**

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| --- | --- |
| **Services:** | Interim Reliability Reserves for South Australia and Victoria |
|  |  |
| **ITT No:** | 310387 |
|  |  |
| **AEMO Interim Reliability Reserves Project Manager:** | Ben Macey  Specialist Operations  Contact: rert@aemo.com.au |
|  |  |
| **Closing Date:** | Tenders due by 5:00 pm Melbourne time on 30 September 2023.  Tenders to be emailed to rert@aemo.com.au.  Note: emailed submissions are subject to a per email size limit of 20MB (multiple emails each of 20MB can be accepted by AEMO). |
|  |  |
| **Validity Period:** | From the Closing Date until 11.59pm AEST on 1 March 2024 |
|  |  |

Australian Energy Market Operator Limited

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TEL: 03 9609 8000

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1. INVITATION TO TENDER
   1. Background

Australian Energy Market Operator Limited (AEMO) is an independent organisation responsible for operating eastern, south-eastern and western energy markets and systems in accordance with its statutory functions.

In Victoria, AEMO is also the transmission planner for the shared network, procures transmission network capability and provides shared transmission services to network users.

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.

In 2020 the National Electricity Rules were amended to include a transitional out of market capacity reserve mechanism (Interim Reliability Reserves) which could be triggered to keep unserved energy (USE) to no more than 0.0006% in any region in any year (interim reliability measure).

In the Electricity Statement of Opportunities (ESOO) published on 31 August 2023 AEMO has determined that the forecast reliability of supply in South Australia and Victoria exceeds the interim reliability measure as per the table below.

|  |  |  |
| --- | --- | --- |
| Region | Financial Year | Reliability gap (MW)[[1]](#footnote-2) |
| **South Australia** | 2023-24 | 118 |
| **Victoria** | 2023-24 | 120 |
| **Victoria** | 2024-25 | 55 |
| **Victoria** | 2025-26 | 13 |

Table 1 - Interim Reliability Exceedance

As such AEMO is seeking to procure reserve contracts for interim reliability reserves in accordance with clauses 3.20.3 and 11.128 of the National Electricity Rules. In doing so, AEMO must also comply with the RERT principles and RERT guidelines. For more information on these interim reliability exceedances please refer to the ESOO.

* 1. Invitation to Tender
     1. Interim reliability reserves requirements

The interim reliability reserves mechanism[[2]](#footnote-3) is intended to operate in a similar way to the long-notice RERT mechanism, but on a temporary basis. Reserve contracts for interim reliability reserves may include testing requirements, availability payments, pre-activation payments and activation payments.

AEMO may enter into interim reliability reserve contracts with a term greater than 12 months but no more than three years.

All offers for multiple year reserve contracts must also include offers for a single year reserve contract for the first year of that multi-year period.

AEMO is seeking interim reliability reserves to cover, at a minimum, the reliability gap exceedance for FY 23-24 identified in Table 1 – Interim Reliability Exceedance.

AEMO’s requirements for reserve contracts for Interim Reliability Reserves are explained in this section A.2, in section C and in the proposed Interim Reliability Reserve Agreement in Schedule 5.

* + 1. Eligible reserves

**Minimum reserves**

The aggregated minimum *reserve* sought by AEMO is either 10MW in Victoria or 10MW in South Australia that can be provided for durations of not less than 1 hour.

AEMO will consider offers of less than 10MW but reserves the right to accept them or otherwise, at its discretion.

Tenderers are asked to describe the timing and availability of *reserves* offered. Tenderers are encouraged to offer the shortest possible lead times to respond to an instruction, and requested to explain any lead times.

**Reserve Type**

Interim reliability reserves can be provided by either load reduction or generation increase.

* Load reduction usually involves the interruption of, or reduction in, the consumption of electricity by a load at a connection point measured at the NMI. This can be through switching on behind the meter generators or batteries that have the effect of load reduction.
* Generation increase usually involves the generation of electricity from a generating unit with its own connection point, e.g. it is not behind the meter of a load.

It is also possible to aggregate many smaller sites (measured at their site NMIs) to provide a larger overall reserve block; there is no limit to the number of sites aggregated so long as they each have their own NMI.

Reserves 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.

Reservescovered by a Short Notice RERT panel agreement must be withdrawn from Short Notice RERT for the period of the Interim Reliability Reserve agreement.

**Out of Market**

AEMO is seeking reserves that are out of market and have been out of market for 12 months prior to the provision of reserves.

* This means the reserves would not have otherwise been providing the offered load reduction or generation increase at any point during the Reliability Gap Period and would continue to remain out of market unless activated by AEMO under an Interim Reliability Reserve contract.

**Market Registration**

Tenders may be provided in respect of:

* unscheduled reserves,
* non-scheduled loads,
* non-scheduled generating units,
* semi-scheduled generating units,
* scheduled loads,
* scheduled generating units.

Tenderers are required to be, or intending to be, registered with AEMO as a registered participant under the National Electricity Rules.

* + 1. Ineligible reserves

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.[[3]](#footnote-4)
* *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.[[4]](#footnote-5)
* Wholesale demand response units.

**TENDERS ARE INVITED** for the provision of Interim Reliability Reserves in South Australia and Victoria.

**Award of any Interim Reliability Reserve contract maybe subject to satisfactory testing, refer to the indicative timetable below.**

* 1. Timetable

|  |  |
| --- | --- |
| Activity | Key dates |
| Issue of ITT | 1 September 2023 |
| Closing of tenders | 30 September 2023 |

The timetable below is provided to give Tenderers an indication of the anticipated timing for the procurement process. It is not binding and is subject to change, and any stage may take longer or shorter than anticipated.

|  |  |
| --- | --- |
| Activity | Indicative timing |
| Expected date for completion of tender evaluation | 2 November 2023 |
| Negotiation with preferred Tenderer(s) | November 2023 |
| Testing (if required) | December 2023 |
| Contract execution | 22 December 2023 |
| Service commencement | 1 January 2024 |

* 1. Glossary

In this document:

A capitalised word or phrase has the meaning set out opposite that word or phrase below.

A word or phrase *in italics* has the same meaning as given to that term in the NER.

Unless the context otherwise requires, this document will be interpreted in accordance with Schedule 2 of the *National Electricity Law*.

|  |  |
| --- | --- |
| **Addendum** | Any document issued after the date of this Invitation to Tender and labelled as an “Addendum” to this Invitation to Tender; 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 Contact** | The AEMO Interim Reliability Reserves Project Manager |
|  |  |
| **Business Days** | A day other than Saturday, Sunday and any other day not taken to be a public holiday. |
| **Closing Date** | The date specified on the cover of this Invitation to Tender. |
| **ESOO** | Electricity Statement of Opportunities |
| **ITT or Invitation to Tender** | This document, including its schedules, attachments and appendices, which are to be read and interpreted in conjunction with the IRR and RERT Tender Response Evaluation And Procurement Guideline |
| **ITT Process** | The process commencing on the issuing of this ITT and concluding when AEMO has notified each Tenderer that the process has concluded. |
| **ITT Rules** | The rules contained in Section B (ITT Rules) of this ITT. |
| **NEM** | National Electricity Market. |
| **NER** | National Electricity Rules. |
| **Operational Information Spreadsheet** | The Operational Information Spreadsheet is the excel spreadsheet containing the operational information including operational contacts, NMIs, MW, lead times and other operational information. |
| **Reliability Gap Period** | The period(s) in which AEMO has forecast in the ESOO that unserved energy will exceed the *interim reliability measure* as set out in Table 1 – Interim Reliability Exceedance. |
| **Representatives** | In respect of a Tenderer includes its employees, agents, advisers, consultants, contractors and persons to whom it supplies this ITT or any other documents issued in relation to the ITT Process by AEMO. |
| **Reserve Period** | The period in which Tenderers are offering to provide their r*eserves.* |
| **Service** | The Interim Reliability Reserves proposed to be provided by the Tenderer, as described in the Schedules and the excel spreadsheet named the Operational Information Spreadsheet. |
| **Shoulder Periods** | The month either side of the Reliability Gap Period as set out in Table 1 – Interim Reliability Exceedance. |
| **Statement of Compliance** | The document contained in Schedule 1 of the Tender Form. |
| **Tender** | The submission lodged by the Tenderer in response to this ITT. |
| **Tenderer** | A person in receipt of this ITT. |
| **Tender Form** | The document contained in **Section D**. |

1. ITT RULES
   1. Application

Participation in the ITT Process is subject to compliance with the rules contained in this **Section B (ITT Rules)**.

All persons (whether or not they submit a Tender) who obtain or receive this ITT may only use it, and the information contained in it, in compliance with the ITT Rules.

All Tenderers are deemed to accept and agree to comply with the ITT Rules.

The ITT Rules apply to:

1. this ITT and any other information given, received or made available in connection with this ITT , including any revisions or Addenda;
2. the ITT Process; and
3. any communications, including any presentations, meetings or negotiations, relating to this ITT or the ITT Process.
   1. Legal Status

This ITT is an invitation for persons to submit a Tender only. This ITT is not an offer capable of acceptance. This ITT must not be construed, interpreted, or relied upon, whether expressly or impliedly, as an offer capable of acceptance by any person.

Neither this ITT, nor a Tender submitted by a Tenderer, has any contractual effect in relation to proceeding with the Services, and does not create any contractual, promissory, restitutionary or other rights to proceed with the Services.

AEMO is under no obligation to complete the process outlined in this ITT, or to proceed with the acquisition of any Services. AEMO may change the process or the description of the requirements outlined in this ITT by issuing an Addendum to Tenderers.

AEMO and its Representatives will not be liable for any costs, expenses, losses or damages incurred by Tenderers through considering this opportunity, submitting a Tender, or otherwise participating in the ITT Process.

* 1. Confidentiality of AEMO’S information

This ITT may contain confidential information about AEMO and its activities. It is provided solely to enable Tenderers to submit Tenders. Tenderers are not permitted to disclose or to use any such information contained in this ITT for any other purpose. Tenderers must take all reasonable steps (both physically and electronically) to protect the confidentiality of this ITT and all communications relating to it, including the Tenderer’s Tender.

* 1. Intellectual Property in ITT

Unless otherwise indicated in this ITT, AEMO owns such intellectual property rights as may exist in this ITT, including and any other documents provided to Tenderers by or on behalf of AEMO in connection with the ITT Process. Tenderers are permitted to use and copy this ITT and any other documents provided the sole purpose of preparing and submitting a Tender.

* 1. Others to be bound

A Tenderer must ensure that each Representative to whom it supplies this ITT, and any other documents issued in relation to the ITT Process, agrees to be bound by, and to comply with, the ITT Rules. The Tenderer acknowledges and agrees it is responsible for its Representative’s compliance with these ITT Rules and agrees to enforce these ITT Rules against its Representatives to prevent any breach or continuing breach, or as otherwise reasonably required by AEMO.

* 1. Conflict of interest

A Tenderer must not, and must ensure that its Representatives do not, place themselves in a position that may or does give rise to an actual, potential or perceived conflict of interest between AEMO and the Tenderer’s interests during the ITT Process. If an actual, potential or perceived conflict of interest arises, then the Tenderer must promptly notify AEMO and take any steps that AEMO reasonably requires to address the conflict of interest.

Without limiting the preceding paragraph, AEMO may, in its absolute discretion, decide not to evaluate (or continue to evaluate) a Tender if, AEMO believes that the Tender was prepared (in whole or in part) by a Representative of the Tenderer where that Representative was:

1. a Representative of, or otherwise engaged by, AEMO at any time during the 12 months immediately preceding the date of issue of the ITT;
2. Involved in the management of the ITT Process or preparation of the ITT at any time.

Before the Closing Date, a Tenderer may request permission to have a Representative described above contribute to or participate in the ITT Process and/or preparation of the Tenderer’s Tender. Where a Tenderer makes such a request, AEMO may, in its absolute discretion, at any time:

1. grant permission, whether with or without such conditions as AEMO thinks fit; or
2. refuse permission.
   1. No Warranty

Except to the extent required by law:

1. AEMO and its Representatives make no warranties or representations, express or implied, oral or written, about the accuracy, adequacy, currency or completeness of this ITT, or any other information provided or made available to Tenderers, including (without limitation) as part of the ITT Process;
2. AEMO and its Representatives make no warranty about whether (or in what form) the ITT will proceed; and
3. AEMO and its Representative do not accept responsibility, and will not be liable in any way for any costs, expenses, losses or damages of whatever kind (whether foreseeable or not) however arising (including, without limitation, by reason of negligence or default), incurred by any person in connection with this ITT , or any other information provided by AEMO in relation to the Services or the ITT Process, or in preparing any Tender.
   1. No representations

No representation made by or on behalf of AEMO or its Representatives in relation to this ITT or its subject matter will be binding on AEMO unless that representation is expressly incorporated into any contract(s) ultimately entered into between AEMO and a Tenderer.

* 1. Disqualification

In addition to any other remedies available to it under law or contract, AEMO may, at its absolute discretion, immediately disqualify a Tenderer from further participation in the ITT Process if AEMO believes that Tenderer has failed to comply with any component of the ITT Rules or this ITT

* 1. 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.

* 1. Continuing obligations

The obligations of a Tenderer under these ITT Rules survive the termination or expiration of the ITT Process.

Communications during the ITT Process

* 1. Prohibited contact

Without first obtaining the written approval of AEMO, Tenderers must not, and must ensure that their Representatives do not contact, make any enquiry to or have any discussions (in any form, whether written, oral or otherwise) in relation to any aspect of the Services or its Tender with the Commonwealth Government, the State Government or any Local Government or any regulator or regulatory authority.

* 1. Requests for further information

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 Contact in writing, not less than 7 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, in its absolute discretion, extend the Closing Date.

AEMO reserves the right not to respond to any question or request, irrespective of when it is received.

No representation or explanation to Tenderers as to the meaning of this ITT, or as to anything to be done or not to be done by the proponent, will be taken to be included in this 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 Contact unless otherwise authorised by the AEMO Contact.

Preparation of and submitting a Tender

* 1. Queries

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 this ITT, they should notify the **AEMO Contact in writing, not less than 4 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.

* 1. Submitting a Tender

A Tender constitutes an offer by the Tenderer to provide the Services, which is capable of acceptance by AEMO in accordance with the ITT Rules.

A Tender for services must meet the following requirements:

1. all applicable sections of the Tender must be completed in the form of **Section C (Tender Form)** and all applicable Schedules;
2. if the Schedules specify that additional documentation or evidence is required, it must be attached as specified;
3. the Tender must be dated and signed, and the person submitting the Tender must be authorised to do so on behalf of the Tenderer; and
4. all pricing data as required in Schedule 3 to the Tender Form must be included with the Tender;
5. a Tenderer can lodge a separate Tender Form for each Service offered or offer all Services in a single Tender Form;
6. additional documentation may be submitted with a Tender if, in the Tenderer’s opinion, it is necessary for a proper understanding of its Tender; and
7. if a Tenderer cannot comply with any requirement of the Tender Form or Schedules, this will not of itself exclude a Tenderer, but the Tenderer must specify in the Statement of Compliance the nature of, and reasons for, the non-compliance.

All Tenders from the same Tenderer must be submitted in separate electronic files in PDF format, with an unsigned but otherwise identical version in Microsoft Word format (and Excel where applicable). Tenders must be electronically forwarded to rert@aemo.com.au (subject to file size limits[[5]](#footnote-6)). Note multiple emails are acceptable.

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

AEMO may, at its absolute discretion, review and evaluate, or accept, or exclude late or non-conforming Tenders.

* 1. Price

All prices must be submitted in Australian dollars exclusive of GST. Tenderers will be aware that, as part of AEMO*’s* *settlements* process, charges will be grossed up for GST in accordance with clause 3.15.10A of the NER.

* 1. Interim Reliability Reserves Agreement

AEMO’s proposed form of contract for the Services is set out in Schedule 5 (Proposed Interim Reliability Reserves Agreement) to this ITT

Unless specifically requested in this ITT for one or more Services, 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 in set out in Schedule 5 (Proposed Interim Reliability Reserves Agreement) unless they include a tracked copy of the contract marked in this way.

AEMO has the right to offer to enter into an Interim Reliability Reserves Agreement on amended terms if AEMO considers it necessary or appropriate in the circumstances.

AEMO requires the terms of the Interim Reliability Reserves Agreement to be agreed and the document signed by the Tenderer within a reasonable period after AEMO notifies its acceptance of the Tender. AEMO reserves the right to reconsider other Tenders not previously selected if the Interim Reliability Reserves Agreement is not signed by the Tenderer within a reasonable negotiation period.

* 1. Tenderers to perform own due diligence

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

1. read, understood and satisfied itself of the requirements of this ITT;
2. familiarised itself with the most recent RERT Guideline,
3. made all reasonable enquiries, investigations and assessments of, and examined all information relevant to, the risks, contingencies, costs, procedures and other circumstances relating to the Services; and
4. satisfied itself as to the correctness and sufficiency of its Tender
5. sought its own legal and commercial advice on the contractual arrangements relating to the provision of the Services, including any tax and stamp duty implications; and
6. informed itself 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 tendered will be claimed from AEMO;

This ITT does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the NEM, the NER, or any other applicable laws, procedures or policies

* 1. Third Party Arrangements

The Tenderer must have adequate documented arrangements in place with any third parties who own equipment that must be operated for the effective delivery and testing of the Service. AEMO my request these documents prior to execution of a possible Interim Reliability Reserve Agreement.

The NMI of each site/facility to be used needs to be included in the Operational Information Spreadsheet, and the Tenderer acknowledges that AEMO may use the NMI data in its assessment of its Offer.

* 1. No reimbursement for costs of Tender

AEMO or its Representatives are not responsible for, and no Tenderer is entitled to be reimbursed for, any expense, liability or loss incurred in the preparation and submission of its Tender, including (without limitation) for any costs incurred in attending meetings with AEMO or providing any further clarification requested by AEMO.

* 1. No anti-competitive conduct

Tenderers must ensure that they (and their Representatives) do not:

1. without the prior written consent of AEMO discuss this ITT with any other person they know has received this ITT or might reasonably be expected to have received it; or
2. engage in any conduct that is designed to, or might have the effect of, lessening competition in the delivery of the supply to AEMO of the Services contemplated by this ITT.

For the avoidance of doubt, Tenderers must obtain the prior written approval of AEMO to discuss this ITT with other potential members of any consortium to deliver the Services for AEMO.

Subject to the above stipulations, it is not necessary for Tenderers to obtain AEMO’s prior written approval before discussing the delivery of the Services with potential sub-contractors, equipment suppliers or consultants, provided the potential sub-contractor, supplier or consultant complies with the requirements above.

* 1. 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.

Next steps after Closing Date

* 1. Tender evaluation

AEMO’s assessment of Tenders may include, but is not limited to, an evaluation of the following matters as relevant to the provision of the Services (noting precedence does not imply a higher weighting):

1. AEMO will seek, for each region , the Service or combination of Services with the aim to maximise the effectiveness of *reserve contracts* at the least cost to end use consumers of electricity.
2. AEMO will have regard to the average amount payable by AEMO under *reserve contracts* for each MWh of reserves for a region and the estimated average value of customer reliability for that region.
3. the Tenderer must be registered or intend to register with AEMO as a RERT provider, this includes registration and IT connection to the AEMO market portal.
4. the Tenderer must be able to demonstrate, through testing or otherwise, that the Service can be delivered.
5. in selecting from Tenders that meet the criteria set out in paragraphs above, AEMO will have regard to:
   * the prices at which the Service is offered;
   * commencement date, size, reserve period, availability and response time of the Service;
   * compliance with ITT requirements;
   * the number, nature and impact of any requested changes to the proposed agreement;
   * qualitative and quantitative technical evaluation, including location, reliability and technical capability of the facilities to deliver the Services;
   * Tenderer's capacity and resources, including its corporate credentials, personnel, financial stability, and operational expertise;
   * compliance with the NER;
   * value for money having regard to total cost and benefits of the Services over time;
   * evaluation of risk, potential liability and proposed contract terms and conditions;
   * any other factors AEMO considers to be relevant, including possible construct ability and project viability.

AEMO’s indicative timing for evaluation of Tenders and award of contracts is set out in section A.3. AEMO may change these times or steps, or stop or suspend the ITT process at any time.

AEMO may, in its absolute discretion, evaluate and accept Tenders that do not meet the criteria in this **Section B (ITT Rules)**, but AEMO is not obliged to do so.

* 1. Tenders commercial-in-confidence

AEMO will retain all Tenders. AEMO may copy and distribute Tenders for the purposes of evaluation. Tenders will be treated as confidential and will not be disclosed outside AEMO unless it is:

1. required by law, or in the course of legal proceedings;
2. for the purposes of liaising, consulting or seeking approval from a State or Federal Government and its professional advisers in connection with this ITT or the Services;
3. for the purposes of assessing the feasibility of any Tender with a relevant Network Service Provider;
4. requested by any regulatory or other government authority having jurisdiction over AEMO, or its activities; or
5. to AEMO’s external advisers, consultants or insurers,

in which case, the Tenderer is deemed to have accepted the disclosure by submitting a Tender.

* 1. Use of Tenders

Upon submission, all Tenders become the property of AEMO. Tenderers will retain all intellectual property rights contained in the Tender.

Notwithstanding the above, each Tenderer, by submission of their Tender, is deemed to have granted AEMO a licence to reproduce the whole, or any portion, of their Tender for the purposes of enabling AEMO to evaluate the Tender and to define its requirements for the Services and the content of any future ITT or other document describing or relating to the Services.

* 1. Clarification

If AEMO considers that a Tender is unclear in any respect, it may seek clarification or further information from any or all Tenderers at any time during the evaluation process. Failure to supply clarification to AEMO’s satisfaction may result in the disqualification of a Tender.

Tenderers may be required to attend meetings with AEMO at a time and place to be notified by the AEMO Interim Reliability Reserves Project Manager to review and discuss any such matters.

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

* 1. Withdrawal of Tender

A Tenderer who wishes to withdraw a Tender must immediately notify AEMO of that fact. Upon receipt of such notification, AEMO will cease to consider that Tender.

* 1. Acceptance Of Tender

No Tender is taken to have been accepted by AEMO until notification of acceptance has been given in writing by AEMO to the Tenderer.

* 1. Options available to AEMO

After evaluation of all Tenders, AEMO may, without limiting other options available to it, do any of the following:

1. enter into pre-contractual negotiations with one or more Tenderers;
2. decide not to proceed further with the ITT Process or any other procurement for the Services; or
3. commence a new process for calling for responses on a similar or different basis to that outlined in this ITT.
   1. No obligation to shortlist Tenderers or enter into contract

Notwithstanding the outcome of any evaluation conducted in accordance with this ITT and without limiting any other rights AEMO may have, AEMO is under no obligation to shortlist any Tenderers or to enter into a contract with any shortlisted Tenderer or any other person.

Irrespective of whether AEMO shortlists any Tenderers, if AEMO decides not to enter into a contract in relation to any *Interim Reliability Reserves*, AEMO may, subject to the NEL and NER, proceed with any alternative process to procure the Services.

* 1. Contract Execution

AEMO is not bound by the terms of any contract document and has no obligation to acquire the Services unless and until the contract is signed by an authorised officer of AEMO.

* 1. 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 or non-acceptance of any Tender.

AEMO’s rights and governing law

* 1. AEMO’s rights

Notwithstanding anything else in this ITT, and without limiting its rights at law or otherwise, AEMO reserves the right, in its absolute discretion at any time, to:

1. cease to proceed with or suspend or vary the ITT Process;
2. alter the structure of, or vary or extend any time or date specified in, this ITT;
3. require additional information or clarification from any Tenderer or any other person or provide additional information or clarification;
4. negotiate with any one or more Tenderer and allow any Tenderer to alter its Tender;
5. call for new Tenders;
6. accept any Tender received after the Closing Date;
7. vary or supplement the ITT Rules or other aspects of the ITT;
8. reject any Tender that does not comply with the requirements of this ITT; and/ or
9. terminate the participation of any Tenderer or any other person in the ITT Process,

without giving reasons.

Where these ITT Rules contemplate AEMO consenting or approving to some act or thing, AEMO, in its absolute discretion, may withhold consent or approval or give its consent or approval subject to conditions at its absolute discretion.

* 1. Governing Law

This ITT and the ITT Process is governed by the laws applying in the State of Victoria.

Each Tenderer must comply with all relevant laws in preparing and lodging its Tender and in taking part in the ITT Process.

1. Requirements for Interim Reliability Reserves
   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.
  1. Regulatory Issues

Tenderers are expected to be familiar with the details of the electricity regulatory framework and the operations of the NEM. 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 jurisdictional body (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.
  1. 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. Tenderers are wholly responsible for addressing any such issues.

* 1. Payment Structure

Tenderers are expected to price each type of Reserve or reserve block offered separately, for example if aggregating reserves into two blocks one for South Australia and another for Victoria then two prices should be offered.

AEMO contemplates paying an Availability Charge over the term of the proposed contract, which will be subject to adjustment for unavailability and non-delivery.

* + 1. 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 the *reserves* are being provided under the agreement. However, it will be payable weekly based on the NEM billing calendar, in arrears for each day when the Reserve is available to AEMO in a particular billing week, regardless of whether AEMO has dispatched or activated it.

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 22 December 2023 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 1 January 2023. 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.

AEMO may not require a test if the performance can be demonstrated through other means, for example through recent actual operations.

1. **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 and will be verified by AEMO where possible.

If the amount advised or verified by AEMO is determined to be 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.

1. **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 Interim Reliability Reserve agreement.

For this period, the Availability Charge will not be payable and where paid, may be required to be repaid under relevant clauses in the agreement. A bank guarantee may be required to cover this repayment obligation.

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.

* + 1. 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 MW pre-activated. 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.

* + 1. 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. 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.

* + 1. Early Termination Charge

The early termination charge applies only where AEMO unilaterally opts to terminate a reserve contract prematurely for convenience and will reduce as the term of the agreement progresses. One termination price will apply at the commencement of each reserve contract.

* + 1. 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 includes sampling of 10 days and applying an adjustment factor. This draws on the approach developed under AEMO’s short notice RERT program with the following exception, days can only be excluded from the baseline if notified in advance.

In order to ensure that the baseline is appropriate when measured against actual consumption, AEMO may compare the provider’s 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.

* 1. Security

AEMO may require a bank guarantee to be provided to secure AEMO’s right to be repaid Availability Charges and pre-activation charges where the reserve was not available or is deemed to have not been available.

1. TENDER FORM

**Note: If the Tenderer is offering multiple Services using different Interim Reliability Reserves sources only one tender form is required to be submitted so long as all the Services are being provided by the same entity (ABN).**

**To:** Ben Macey Specialist Operations

Contact: rert@aemo.com.au

**Interim Reliability Reserves TENDER**

**From:**

|  |  |  |
| --- | --- | --- |
| **Tenderer:** |  | |
| **ABN:** |  | |
| **Address:** |  | |
| **Contact Person:** | Name: |  |
|  | Title: |  |
|  | Telephone No: |  |
|  | E-mail: |  |

1. **Offer**

The Tenderer offers to provide the *Interim Reliability Reserves* described in **Schedule 2 and the Operational Information Spreadsheet** in accordance with the requirements of the ITT as specified in the Statement of Compliance in **Schedule 1**. The Tenderer must ensure the PDF and Word (or Excel) versions of its Tender are identical[[6]](#footnote-7) and agrees that AEMO may rely on either version when evaluating this Tender.

1. **Agency/Joint Tender**

The Tenderer is/is not[[7]](#footnote-8) acting as agent or trustee for another person, or lodging a Tender jointly with other persons.

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

1. **Service and Prices**

Should AEMO accept the Tenderer’s offer specified in **Schedule 2 and the Operational Information Spreadsheet**, with such amendments as may be agreed between AEMO and the Tenderer, the Tenderer acknowledges that the Tenderer will deliver the Service specified in **Schedule 2 and the Operational Information Spreadsheet** for the prices specified in **Schedule 3**.

1. **Arrangements with third parties**

The Tenderer has, or will have, all necessary arrangements in place with third parties to ensure the effective delivery and testing of the Service specified in **Schedule 2 and the Operational Information Spreadsheet**, as specified in **Schedule 4.**

1. **Validity Period**

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

1. **Interim Reliability Reserves Agreement**

The Tenderer provides in **Schedule 5** a copy of AEMO*’s* proposed Interim Reliability Reserves Agreement with details, price fields completed and any other of the Tenderer’s proposed changes updated with the “track changes” mode.

**OR**

The Tenderer accepts AEMO’s proposed Interim Reliability Reserves Agreement as provided and subject to the details and price fields as provided in this Tender form.

1. **Addenda to ITT (only if Addenda received)**

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

Addendum No. 1 Dated

Addendum No. 2 Dated

Addendum No. 3 Dated

**NOTE**: Capitalised terms in this Tender Form and Schedules are defined in the ITT; italicised terms are defined in the National Electricity Rules.

Dated this day of 2023

|  |  |  |
| --- | --- | --- |
| **EXECUTED** by ***[name of tenderer]*** by its duly appointed representative in the presence of: | )  )  ) |  |
| ..............................................................……..  Witness  ..............................................................……..  Name of witness (print) |  | ..............................................................……..  Authorised Officer  ..............................................................……..  Name of Authorised Officer (print)  ..............................................................……..  Title of Authorised Officer (print) |

SCHEDULE 1 STATEMENT OF COMPLIANCE

**Delete one of the paragraphs below that is not required:**

I *[Tenderer]* confirm that this Tender conforms in every respect with the ITT.

OR

I *[Tenderer]* confirm that this Tender does not conform with the ITT in the following ways:

1.

Tenderer's name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tenderer's signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

SCHEDULE 2 INTERIM RELIABILITY RESERVE SERVICES

## Reserve Summary and Type

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

| **Reserve Block Name or Generating Unit**  (each reserve portfolio or option). | **Firm Capacity**  (MW) | **Market Capacity**  (MW) | **Total Reserve**  (MW)  (Firm Capacity – Market Capacity) | **Region** (SA or Vic) | **Reserve type**  (load reduction or generation increase) | **Market Registration Classification**  (unscheduled reserves, non-scheduled loads, non-scheduled generating units, semi-scheduled generating units, scheduled loads, scheduled generating units.) | **Please provide a summary of the sites/technology and the operational processes to deliver the reserves.** |
| --- | --- | --- | --- | --- | --- | --- | --- |
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The Reserve Block Name should be consistent across the reserve summary table, pricing table, the agreement and the Operational Information Spreadsheet.

Where answers in the sections below are different for various reserve blocks offered please explain with reference to the reserve block name in the respective text box. Tenderers can copy the following sections and answer it for each individual reserve block if that is clearer.

## Operational Information

**For Reserves provided through load reduction please complete all fields in the Operational Information Spreadsheet, then complete from item 3 (Out of Market) onwards. The Operational Information Spreadsheet will be referred to in the proposed Interim Reliability Reserve Agreement,.**

**For Reserves provided through generation increase please complete the tables below, then complete from item 3 (Out of Market) onwards.**

|  |  |
| --- | --- |
| **Name of Generating Unit:****[[8]](#footnote-9)** |  |
| **Registration Status** | [market/non-market] |
| **Location** |  |
| ***Connection Point*** |  |
| ***Hours of the day the*** reserve*is available for*activation *including running times.* |  |
| ***Days of the week the*** reserve*is available for* activation |  |
| ***Maximum number of consecutive days the*** reserve *can be* activated *in a week if any.* |  |
| ***Maximum number of days per week of*** activation *if any.* |  |
| ***Maximum number of activations over the*** term *if any.* |  |
| ***Minimum Operating Level*** | [ ] MW |
| ***Enablement Lead Time*** | [ ] hours |
| ***Disablement Lead Time*** | [ ] hours |
| **Type of *scheduled generating unit*** | [*fast start plant/slow start plant*] |

| **Name of Generating Unit[[9]](#footnote-10)** | |  | | | |
| --- | --- | --- | --- | --- | --- |
| **Power output range** | **Minimum rate of change of power output** | | | **Maximum rate of change of power output** | |
| **While operating on *AGC*** | | **Manual Control** | **While operating on *AGC*** | **Manual Control** |
| [ ] MW | [ ]MW/min | | [ ]MW/min | [ ]MW/min | [ ]MW/min |
| [ ] MW | [ ]MW/min | | [ ]MW/min | [ ]MW/min | [ ]MW/min |
| [ ] MW | [ ]MW/min | | [ ]MW/min | [ ]MW/min | [ ]MW/min |

|  |  |
| --- | --- |
| **Name of Generating Unit [[10]](#footnote-11)** |  |
| **Minimum run-time,** ie the minimum period the *scheduled generating unit* must *generate.*  For the avoidance of doubt, *AEMO* may issue an *instruction* to *disable* the *reserve* while the *reserve* is within the minimum run-time so that the *disablement lead time* and minimum run-time are satisfied concurrently at the end of the minimum run-time. | [ ]hours |
| **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.* | [ ] hours |
| **Maximum run time,** ie the maximum period the *scheduled generating unit* can *generate*. | [ ] hours |
| **Other *dispatch* *constraints*** |  |

## Out of Market

|  |  |
| --- | --- |
| Please explain the operation of the reserve and why it would not currently respond to a forecast lack of reserve assuming the lack of reserve occurs at the same time as high wholesale energy prices. |  |
| Are any of the NMIs, sites or facilities offered as Interim Reliability Reserves already in or offered for Short Notice RERT?  Note that any Short Notice RERT reserves offered into Interim Reliability Reserves will need to be withdrawn from Short Notice RERT for the period of any Interim Reliability Reserve contract. | **□** Yes  **□** No |
| Has any NMI, site or facility included in this Tender, been offered to the market (NEM) in any other way? For example any state or federal government tenders for capacity. | □ Yes  □ No |
| Is the Reserve registration category non-market? If no, explain how this Reserve is out of market. | **□** Yes  **□** No |
| Has any NMI, site or facility included in the offer, in any way responded to wholesale energy prices in the last 12 months or will be in the next 12 months? | **□** Yes  **□** No |
| Has any NMI, site or facility bid into the wholesale energy market in the last 12 months or will be in the next 12 months? | **□** Yes  **□** No |
| Has any NMI, site or facility been registered as a wholesale demand response unit in the last 12 months or will be in the next 12 months? | **□** Yes  **□** No |

## Ownership and Constraints

|  |  |
| --- | --- |
| Please explain the ownership structure of the sites, facilities and equipment being used to provide the Reserve, including what documentation or agreements are in place that could confirm this.  Refer to Section B.19 |  |
| Is the *dispatch* of the Reservedependent on any third party?  If so, who that third party is and provide details of the type of constraint. | **□** Yes  **□** No |
| Is the Tenderer 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 Reserveavailable?  If so, please provide details. | **□** 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. | **□** Yes  **□** No |
| Are there any other known or potential constraints on the *dispatch* of the Reserve?  If so, please provide details. | **□** Yes  **□** No |

## Minimum Technical Requirements

|  |  |
| --- | --- |
| Can the Reserve be *dispatched/activated* by instructions to a single point of contact with operational responsibility?  If not, please provide details of how the Reserve *dispatch/activation* instructions need to be delivered by *AEMO*. | **□** 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*. | **□** Yes  **□** No |
| Can the Reserve be dispatched continuously for at least 1 hour? | **□** Yes  **□** No |

## Performance Criteria

|  |  |
| --- | --- |
| Can each Reserve Block be prepared for *dispatch/*activated within the proposed Enablement Lead Time at all times?  If not, when will it be unable to be so prepared and why?[[11]](#footnote-12) | □Yes  □No |
| Can each Reserve Block cease providing Reserve and to recommence taking supply of electricity from the *network* within the proposed Disablement Lead Time at all times?  If not, when will it be unable to do so and why? | □Yes  □ No |
| Will *dispatch/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 and provide single line diagrams of the network connections to the sites. | □Yes  □No |

## 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 Reliability Gap Periods?  If not, please identify when it is, or might, not be available and why. | □Yes  □No |
| Can the Reserve available at all times between the Shoulder Periods?  If not, please identify when it is, or might, not be available and why. | □Yes  □No |

## Measurement of Reserve

|  |  |
| --- | --- |
| Provide details of the *metering* equipment the Tenderer proposes to use to measure the Reserve.  The NMI of each site/facility to be used needs to be included in the Operational Information Spreadsheet (for load reduction only). |  |
| 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 to be used a type 1, 2 3 or 4 *metering installation*[[12]](#footnote-13) or Vic AMI meter?  If yes, please specify the *Reserve Block* 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 If SCADA is going to be installed please complete section 9 |  |

## Augmentation and Construction

Complete if required. The *Service* will be provided based on the augmentation and/or construction as described below:

|  |  |
| --- | --- |
| Summary  Please provide a summary of the proposed project scope. |  |
| Construction/augmentation schedule  Please provide a high level schedule from financial/contract close to operation start. |  |
| Project partners, EPC, OEMs etc.  Please explain the project ownership, partners and contractors. |  |
| Interim Reliability Reserves Equipment to be constructed | Major components: |
| Other components: |
| Third Party Assets: |
| Network upgrades required |  |
| Construction/augmentation risks | Please provide attached a project risk assessment. |

SCHEDULE 3 PRICES

The Tenderer offers to provide Services at the relevant prices specified in the table below.

Tenderers may offer to provide the Service for up to 3 years from 2023-24 (Multi-year agreement), but must also provide an offer for a single year term with any offer for a Multi-year agreement.

Each Reserve Block or Generating Unit option in the table below applies (any may be accepted) on a stand-alone basis, and is independent of the other options, however each Reserve Block or Generating Unit may have multiple Reserve Period options with different charges.

Refer to section 4 and the section C named Requirements for Interim Reliability Reserves.

| **Reserve Block Name or Generating Unit Options**  (each reserve portfolio or option). | **Expected availability of reserve in the reserve period**  % | **Reserve Period**  Day/Month/Year starting to Day/Month/Year ending) | **Pre-Activation Charge**  ($ per MW) | **Usage or Activation Charge**  ($ per MWh) | **Availability Charge**  ($ total per Reserve Period) | **Early Termination Charge**  (initial $, decreasing over time)[[13]](#footnote-14) |
| --- | --- | --- | --- | --- | --- | --- |
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SCHEDULE 4 THIRD PARTY ARRANGEMENTS & TESTING

**Arrangements for Interim Reliability Reserves Third Party Assets**

Refer to the testing requirements under section C.4(a)(i).

If the Reserves Equipment includes Third Party Assets, please provide the following information:

|  |  |
| --- | --- |
| **Describe the documented arrangements in place between the Tenderer and the owner(s) of the Third Party Assets to allow:**   * The provision of the Service * Testing of the Service both for the procurement process and during the term of any subsequent Interim Reliability Reserves Agreement |  |
| **If there are no documented arrangements in place:**   * Has the relevant asset owner(s) indicated agreement to facilitate the provision of the Service? * What process will the Tenderer follow to put documented arrangements in place (including timelines)? |  |

**Testing and Reliability**

|  |  |
| --- | --- |
| **Can the Tenderer provide any evidence of the proven reliability of the Reserve?**  (The evidence must not be more than 12 months old).[[14]](#footnote-15)  Testing might be required as a condition of contract but if the facility which will provide the Reserve has recently been satisfactorily tested or demonstrated, 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. |  |
| **Can the Tenderer provide any other evidence of the proven reliability of the Reserve?** | □Yes  □No |
| **Is the Tenderer able to test the Reserves by 22 December 2023?**  **See example test requirements below.**  **If not, why not?** | □ Yes  □ No |

Example of Interim Reliability Reserve testing requirements:

Operation of the *reserve* at the contracted levels of performance for not less than 1 hour, where:

* the *reserve equipment* is enabled the within the enablement lead time;
* provision of the *reserve*, load reduction or generation, at a level above the greater of the minimum operating level and the market capacity, and in accordance with dispatch instructions issued by AEMO; and
* disablement under instructions from AEMO within the disablement lead time.

During the test:

* All automatic control systems, for example, the excitation control system and governor system, must be operated in their automatic regulating mode;
* The *reserve equipment* must be operated in a constant and stable manner; and
* If AGC is installed, the scheduled generating unit must be operated under AGC control.
* The *reserve* provided did not include any market capacity and was provided within the proposed enablement lead times.
* The test can be measured with time-stamped results. Trend display printouts of the performance of the *reserve equipment* must be provided to *AEMO* as evidence of completion of this test.

SCHEDULE 5 Proposed Interim Reliability Reserves Agreement

A marked-up copy of the proposed Interim Reliability Reserves Agreement must be provided if the Tenderer proposes any changes. All changes must be marked up in track changes mode.

If no changes are proposed, do not provide a copy of the agreement.

SCHEDULE 6 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
* Pre-agreed or notified excluded days i.e. business days and not previous activation days and to take into consideration planned maintenance shutdown periods.



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 such as 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**

###### 

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**

For calculations based on 30 minute metering data:

###### 

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.*

For calculations based on 5 minute metering data:

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 5-min intervals before activation start time

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.

If the reserve is activated for 2 or more separate periods on the same day, the adjustment factor a for each period of activation will be the adjustment factor calculated for the first period of activation on that day.

**Adjusted baseline calculation**



*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* = 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 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.

1. The reliability gap is based on the ESOO modelling, which is a statistical average. AEMO may procure more or less than this amount. [↑](#footnote-ref-2)
2. See clause 11.128 of the National Electricity Rules. [↑](#footnote-ref-3)
3. See Rule 3.20.3(h) [↑](#footnote-ref-4)
4. See Rule 3.20.3(i) [↑](#footnote-ref-5)
5. AEMO’s incoming email size limit is 20MB. Tenderers will need to check their own limits on outgoing email. [↑](#footnote-ref-6)
6. Only the PDF version must be signed [↑](#footnote-ref-7)
7. Delete as appropriate. [↑](#footnote-ref-8)
8. Copy table and use one for each Generating Unit involved. [↑](#footnote-ref-9)
9. Copy table and use one for each Generating Unit involved. [↑](#footnote-ref-10)
10. Copy table and use one for each Generating Unit involved. [↑](#footnote-ref-11)
11. Please label any attachment clearly with the item number to which it refers. [↑](#footnote-ref-12)
12. See Schedule 7.2 of Chapter 7 of the NER. [↑](#footnote-ref-13)
13. Refer to section C.4(d) for more details on the Early Termination Charge. [↑](#footnote-ref-14)
14. Please label any attachment clearly with the item number to which it refers. [↑](#footnote-ref-15)