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Request for Expressions of Interest

Non-market Ancillary Services – Dynamic reactive power support

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| **Services:** | Non-market Ancillary Services – Operate generators as Synchronous Condersors |
|  |  |
| **AEMO Contact:** | Name: Brahan Sivarajan  Senior Engineer, Power System Planning  Email: Brahan.Sivarajan@aemo.com.au |
|  |  |
| **Closing Date:** | 5:00pm (Melbourne time), 4 May 2018  Expression of Interest responses to be submitted electronically to [tenderbox@aemo.com.au](mailto:tenderbox@aemo.com.au) by 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

Fax: 03 9609 8080

Table of Contents

[SECTION A: REQUEST FOR EOI 2](#_Toc510083698)

[SECTION B: INFORMATION FOR RECIPIENTS 4](#_Toc510083699)

[SECTION C: EOI REQUIREMENTS AND EVALUATION 6](#_Toc510083700)

[SECTION D: SERVICE REQUIREMENTS 8](#_Toc510083701)

[SECTION E: EOI FORM 10](#_Toc510083702)

[SCHEDULE 1 12](#_Toc510083703)

[SCHEDULE 2 13](#_Toc510083704)

[SCHEDULE 3 14](#_Toc510083705)

1. REQUEST FOR EOI
   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 addition to the day-to-day management of wholesale and retail energy market operations, AEMO operates the power system for the National Electricity Market (NEM) and the Victorian gas declared transmission system, is the energy market operator and power system operator for the South West Interconnected System in Western Australia, and undertakes ongoing market development and long-term system planning.

In Victoria, AEMO also plans and procures services for the operation and development of the shared electricity transmission network, and provides shared transmission services to network users.

* 1. Request for EOI

The power transfer capability from New South Wales (NSW) to Victoria is limited by a voltage stability limitation, as well as thermal limitations. The voltage stability limitation is in place to prevent voltage instability in Southern NSW that could otherwise result on the occurrence of a large credible contingency event in Victoria. Relieving this limitation can allow additional import from NSW and in turn avoid or reduce any potential disruption of electricity supply to Victorian customers during periods of tight supply/demand balance in Victoria.

AEMO is seeking expressions of interest for dynamic reactive power support to relieve this voltage stability limitation.

EXPRESSIONS OF INTEREST ARE INVITED for the provision of Non-market Ancillary Services (described in Section D) from NEM registered generators with generating units located in southern NSW or Northern Victoria that have the capability to operate in synchronous condensor mode.

* 1. Glossary

In this document:

* A capitalised word or phrase has the meaning set out opposite that word or phrase below;
* Terms defined in the National Electricity Rules have the same meanings when used in this document;
* Unless the context otherwise requires, this document will be interpreted in accordance with Schedule 2 of the National Electricity Law.

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| **Addendum** | Any document issued after the date of this Request for EOI and labelled as an “Addendum” to this Request for EOI; 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 Request for EOI. |
| **Business Day** | A day other than Saturday, Sunday and any other day not taken to be a public holiday in Victoria. |
| **Closing Date** | The date specified on the cover of this Request for EOI. |
| **EOI** or **Expression of Interest** | The submission lodged by the Recipient in response to this Request for EOI. |
| **EOI Form** | The document contained in **Section E**. |
| **NEM** | National Electricity Market. |
| **NER** | National Electricity Rules. |
| **Recipient** | A person in receipt of this Request for EOI. |
| **Request for EOI** | This document, including its schedules, attachments and appendices. |
| **Services** | The services as more particularlydescribed in **Section D.** |
| **Statement of Compliance** | The document contained in **Schedule 1** of the EOI Form. |
| **Synchronous condensor[[1]](#footnote-1)** | Plant, similar in construction to a generating unit of the synchronous generator category, which operates at the equivalent speed of the frequency of the power system, specifically provided to generate or absorb reactive power through the adjustment of rotor current. |

1. INFORMATION FOR RECIPIENTS
   1. Legal Status

This Request for EOI is an invitation to treat and is not intended to have any contractual effect. Short-listed Recipients may be invited to submit tenders for the delivery of the Services after the conclusion of the EOI process and any associated regulatory process. However, AEMO is not obliged to complete the process outlined in this Request for EOI or any subsequent tender, or to acquire any Services.

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

* 1. Confidentiality

This Request for EOI may contain confidential information about AEMO or its operations and markets, and is provided solely to enable Recipients to submit Expressions of Interest. Recipients must not use information in this document for any other purpose without AEMO’s prior written consent. Recipients must take all reasonable steps (both physically and electronically) to protect the confidentiality of this document and all communications relating to it.

* 1. Intellectual Property

### Unless otherwise indicated, AEMO owns the intellectual property rights in this Request for EOI. Recipients are permitted to use and copy this document for the purposes of submitting an EOI.

* 1. No Warranty

Except to the extent required by law:

* AEMO makes no warranties or representations on the accuracy, adequacy or completeness of the Request for EOI or any other information provided to a Recipient;
* 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 Request for EOI or any other information provided to a Recipient.
  1. No Collusion or Dealings with Competitors

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

(a) discuss this Request for EOI with any other person they know has received this Request for EOI or might reasonably be expected to have received it; or

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

Recipients who wish to engage in legitimate teaming or sub-contracting discussions with persons who might deliver the Services must gain AEMO’s prior approval to do so.

* 1. Queries

If Recipients find any discrepancy, error, or have any doubt as to the meaning or completeness of this Request for EOI, 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 Recipients 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 Recipients in relation to this Request for EOI is taken to be included in the Request for EOI unless it is contained in an Addendum.

* 1. Conditions of submitting an Expression of Interest

Recipients wishing to submit an EOI must comply with **Section C**.

1. EOI REQUIREMENTS AND EVALUATION
   1. Submitting an EOI

An EOI must meet the following requirements:

* All applicable sections of the EOI must be completed in the form of **Section E: EOI Form** and all relevant schedules.
* The EOI must be dated and signed by a duly authorised representative, where indicated.
* All supporting documentation evidencing the matters specified in **Schedule 3** to the EOI Form must be included with the EOI, to the extent applicable to the proposed Service.
* If a Recipient cannot comply with any element of the EOI Form or schedules, the Recipient must specify in the Statement of Compliance the nature of, and reasons for, the non-compliance.
* EOIs must be lodged in electronic form to reach the following email address by **5:00 pm** (Melbourne time) on the Closing Date: [tenderbox@aemo.com.au](mailto:tenderbox@aemo.com.au).
* Additional documentation may be submitted with an EOI if, in the Recipient’s opinion, it is necessary for a proper understanding of its EOI.

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

* 1. Recipients to Perform own Due Diligence

By submitting an EOI, a Recipient is taken to have:

* satisfied itself of the requirements of this Request for EOI;
* made all reasonable enquiries, investigation and assessment of available information relevant to the risks, contingencies and other circumstances relating to the Services; and
* satisfied itself as to the correctness and sufficiency of its EOI.
  1. EOIs Commercial-in-Confidence

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

* as reasonably required for the purpose of assessing the proposed Services;
* required by law, or in the course of legal proceedings;
* 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 Recipient is deemed to have consented to this disclosure by providing the EOI.

* 1. No Reimbursement for Costs of EOI

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

* 1. No Publicity

Recipients must not make any public or media announcement about this Request for EOI or the outcome of this Request for EOI without AEMO’s prior written permission.

* 1. EOI Evaluation

AEMO’s assessment of EOIs may include, but is not limited to, an evaluation of the following matters as relevant to the provision of the Services:

* Ability to deliver the Services;
* Ability to meet the performance levels specified in section D.3 while meeting the minimum technical requirements specified in section D.4;
* Value for money;
* Evaluation of risk and potential liability;
* Any other factors AEMO considers to be relevant.
  1. No Obligation to Debrief

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

1. SERVICE REQUIREMENTS
   1. Need for Services

AEMO is seeking expressions of interest from NEM registered generators with generating units that have the capability to operate in synchronous condensor mode when instructed by AEMO. These Services could be required at times when a generating unit is not dispatched to provide active power, but is available to be run as a synchronous condensor.

The operation of generating units in synchronous condensor mode when not generating active power will provide dynamic reactive support that can relieve the existing voltage stability limitation constraining import capability from NSW to Victoria, thereby reducing the probability of disruption of supply to Victorian customers during periods of tight supply/demand balance in Victoria.

Location of Services

The voltage stability limitation acts to constrain power transfers into Victoria to a level that will prevent voltage collapse in Southern NSW if a credible contingency event occurs in Victoria (loss of the largest Victorian generating unit or the Basslink interconnector. As such, generators able to offer synchronous condensor Services in Southern NSW will have the greatest impact, followed by generating units located in Northern Victoria near the NSW border.

Description of Services

The Services must meet the performance levels specified in section D.2 while meeting the minimum technical requirements specified in section D.3.

It is expected that the synchronous condensor services will only be required if the generating unit is not dispatched to provide active power or market ancillary services.

It is expected that the synchronous condensor services may potentially be required during warmer months if supply/demand balance is tight in Victoria, between November and March.

The minimum level of reactive power support required is +5 MVAr and the maximum level of reactive support required is +600 MVAR when acting as a synchronous condensor, both under system normal and generator maintenance conditions.

* 1. Performance levels

|  |  |
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| **Requirement** | **Performance Level** |
| Time taken to enable synchronous condensor mode from the receipt of a request from AEMO. | 5 minutes |
| Maximum continuous time that synchronous condensor mode may be required. | 7 hours |
| Minimum level of reactive power producing capability for all units offered for Synchronous Condensor services. | + 5 MVAr |
| Maximum level of reactive power producing capability for all units offered for Synchronous Condensor services. | + 600 MVAr |

* 1. Minimum technical requirements

The units that provide the Services must:

1. be capable of transmitting measurements of active power and reactive power output to AEMO’s control centre to required standards;
2. be capable of absorbing or generating reactive power while maintaining zero active power production;
3. be capable of sustaining continuous contracted levels of performance of reactive power generation or reactive power absorption upon receipt of a communication from AEMO;
4. comply with performance requirements as per the performance standards registered with AEMO; and
5. comply with any relevant requirements under the NER.
6. EOI FORM

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

(**AEMO**)

**Expression of Interest for Non-market Ancillary Services – Dynamic reactive power support**

**From:**

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

**1. EOI**

The Recipient expresses its interest in providing the Services in accordance with the requirements of the Request for EOI as specified in the Statement of Compliance in **Schedule 1**.

**2. Agency/Joint EOI**

The Recipient is/is not[[2]](#footnote-2) acting as agent or trustee for another person, or lodging an EOI jointly with other persons.

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

**3. Services**

The Recipient provides the supporting information required by **Schedules 2** and **3** for each of the Services proposed to be provided.

**4. Addenda to Request for EOI (only if Addenda received)**

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

Addendum No. 1 Dated

Addendum No. 2 Dated

Addendum No. 3 Dated

NOTE: Capitalised terms in this EOI Form and Schedules are defined in the Request for EOI. Terms defined in the National Electricity Rules have the same meanings.

Dated this day of 2018

|  |  |  |
| --- | --- | --- |
| **EXECUTED** by **[name of Recipient]** by its duly appointed representative in the presence of: | )  )  ) |  |
| ..............................................................……..  Witness  ..............................................................……..  Name of witness (print) |  | ..............................................................……..  Signature of authorised representative  ..............................................................……..  Name of authorised representative (print)  ..............................................................……..  Position of authorised representative (print) |

SCHEDULE 1

STATEMENT OF COMPLIANCE

I *[Name]* confirm on behalf of *[Recipient]* that this EOI conforms in every respect with the Request for EOI.

OR

I *[Name]* confirm on behalf of *[Recipient]* that this EOI conforms with the Request for EOI **other than** in the following respects:



Recipient's name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Recipient/ authorised representative signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

SCHEDULE 2

DESCRIPTION OF PROPOSED SERVICES

The Recipient proposes the following Services:

|  |  |
| --- | --- |
| **Service Name** | **Description** |
| Dynamic reactive power support |  |

Depending on the type of Service, Recipients must complete the relevant part(s) of the remainder of this **Schedule 2**.

# Specifications

## Facilities

The Recipient proposes to provide the Services using the following generating units:

|  |  |
| --- | --- |
| **Facility/Equipment** | **Description** |
| [Generating unit short name] |  |
|  |  |
|  |  |

The description should include the reactive capability range of each unit when operating in synchronous condensor mode including detail of how this mode would be enabled / disabled.

## Performance Requirements

The Recipient proposes to provide the Services to meet AEMO’s performance requirements as follows:

|  |  |
| --- | --- |
| **Requirement** | **Performance Level** |
| Time taken to enable synchronous condensor mode from the receipt of a request from AEMO. |  |
| Maximum time that synchronous condensor mode can be sustained. |  |
| Minimum reactive power producing capability for all units offered for the Services. |  |
| Maximum reactive power producing capability for all units offered for the Services. |  |

SCHEDULE 3

**SUPPORTING DOCUMENTATION**

In support of its EOI, the Recipient must provide the following information:

1. **Approach**

The Recipient’s approach to delivering the Services, including:

* ability to meet the performance levels specified in section D.2 while meeting the minimum technical requirements set out in section D.3;
* the recipient’s approach to risk and liability;
* indicative cost of the Services (on a per event basis) in 2018$ – this may be a fixed cost and/or a variable cost;
* an indication of the main factors that would cause those costs to change (other than inflation over time); and
* any further information the Recipient believes would assist AEMO’s evaluation of the EOI.

1. Definition as per the National Electricity Rules [↑](#footnote-ref-1)
2. Delete as appropriate. [↑](#footnote-ref-2)