

VPP Visibility Guideline

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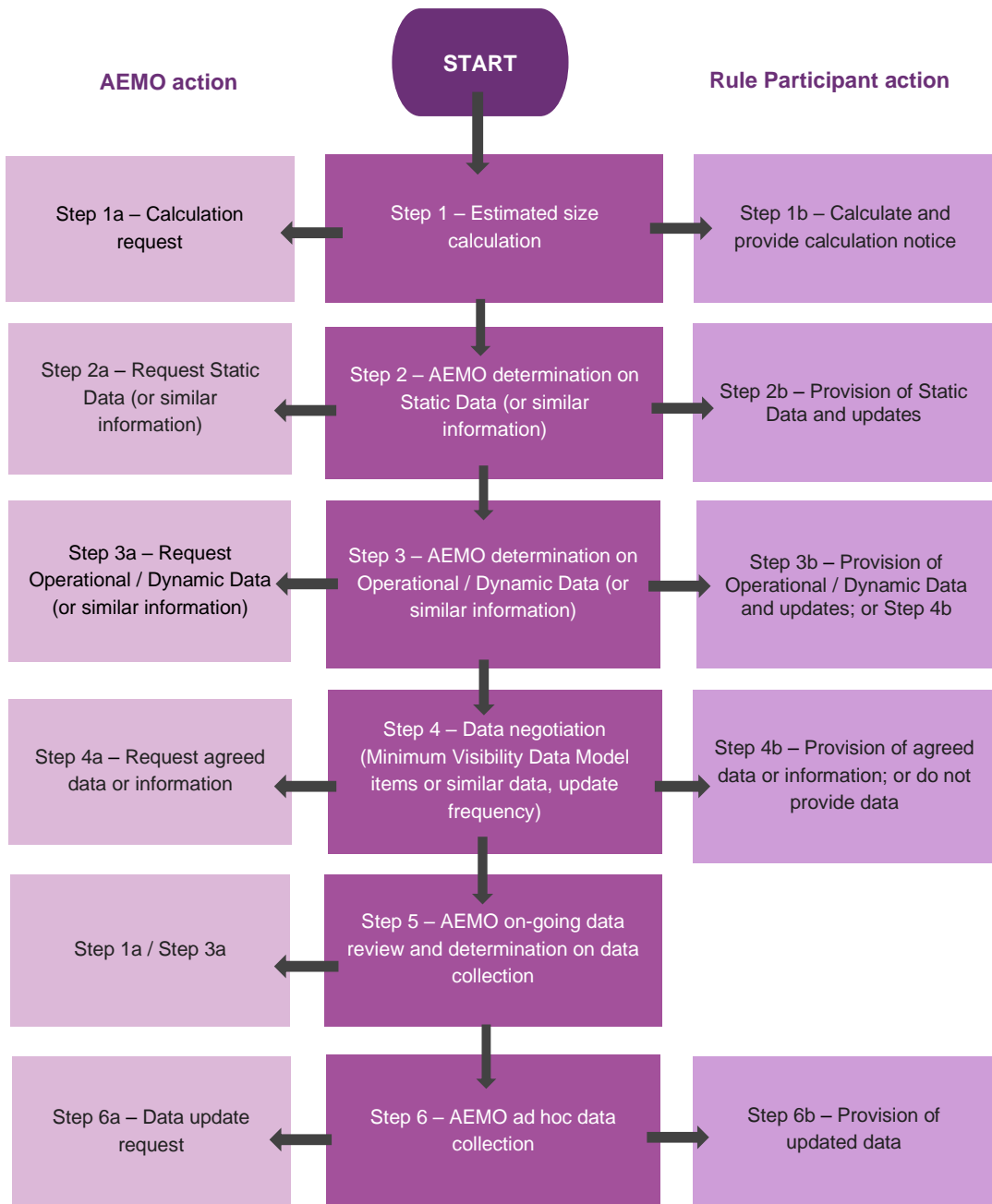
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1. Introduction

1.1. Purpose and scope

- 1.1.1. The *Electricity Industry Act 2004*, the Electricity Industry (Wholesale Electricity Market) Regulations 2004, the Wholesale Electricity Market (WEM) Rules and the WEM Procedures prevail over this document to the extent of any inconsistency.
- 1.1.2. The purpose of this document is to:
- (a) provide an overview of the Visibility Framework;
 - (b) facilitate data provision under the Visibility Framework by specifying:
 - i. a definition for a Virtual Power Plant (VPP);
 - ii. the method for calculating the estimated size of an Aggregation of DER;
 - iii. the estimated size at which a Rule Participant who operates an Aggregation of DER that is a VPP may be requested to provide Minimum Visibility Data to AEMO;
 - iv. the Minimum Visibility Data Model;
 - v. the data that comprises a Rule Participant's Minimum Visibility Data; and
 - vi. a negotiation process to facilitate AEMO's collection of Minimum Visibility Data.
 - (c) set-out a process for the voluntary provision of data to AEMO by a Rule Participant who operates a VPP on the VPP and its Off-market arrangements, or by a Rule Participant who operates an Aggregation of DER on the Aggregation of DER and its Off-market arrangements.
 - i. AEMO may initiate the process by making a written request to a Rule Participant to undertake an estimated size calculation; or
 - ii. a Rule Participant may initiate the process by undertaking an estimated size calculation and notifying AEMO of the result.

Figure 1 Minimum Visibility Data collection process overview



1.2. Definitions

- 1.2.1. Terms defined in the *Electricity Industry Act 2004*, the WEM Regulations 2004 and the WEM Rules have the same meanings in this document unless the context requires otherwise.
- 1.2.2. The following definitions apply in this document unless the context requires otherwise.

Table 1 Definitions

Term	Definition
Aggregation of DER	Is defined in paragraph 2.2.2(a).
Battery Storage	Is defined in paragraph 2.3.2(a)(ii).
Centrally Controlled	Is defined in paragraph 2.2.2(a)(i).
DER Register	Means the DER Register established in accordance with clause 3.24 of the WEM Rules.
Distributed Energy Resource (DER)	Means energy producing or energy consuming equipment that is connected to the distribution network, where each device is located behind a connection point.
Dynamic Data	Means dynamic data items as specified in the Minimum Visibility Data Model in Appendix A.
Estimated size	For an Aggregation of DER, means the estimated size as calculated in accordance with paragraph 2.3.2.
Electric Vehicle Storage Equipment	Is defined in paragraph 2.3.2(a)(iii).
Grid-facing service	As defined in paragraph 2.2.2(b).
Guideline	Is defined in paragraph 2.1.3(c).
Injection	As proposed to be defined in Chapter 11 (Glossary) of the WEM Rules.
Large VPP	Means a VPP with an estimated size of at least 10 MW.
Minimum Visibility Data	Means the information AEMO is seeking to obtain from Rule Participants under this Guideline.
Minimum Visibility Data Model	Means the Minimum Visibility Data Model provided in Appendix A.
Off-market arrangements	Means activities or services provided by a VPP that are not directly offered into the WEM.
Operational Data	Means Operational Data items as specified in the Minimum Visibility Data Model.
Orchestration System	Is defined in paragraph 2.2.2(a)(ii).
Small VPP	Means a VPP with an estimated size of at least 5 MW and less than 10 MW.
Solar PV	Means a photovoltaic system which is a type of Small Generating Unit.
Static Data	Means the Static Data items specified in the Minimum Visibility Data Model.
Storage Works	Has the meaning given in the <i>Electricity Industry Act 2004</i> and to avoid doubt, includes Battery Storage and Electric Vehicles Storage Equipment.
Transmission Node	Is defined in Chapter 11 (Glossary) of the WEM Rules.
Transmission Node Identifier (TNI)	Means the code identifying the relevant Transmission Node.
Visibility Framework	Means a framework to support the identification and collection of information that will give AEMO visibility of Off-market arrangements to enable AEMO to make better informed decisions when performing its function of ensuring that the SWIS operates in a secure and reliable manner , as further described in paragraph 2.
Virtual Power Plant (VPP)	Is defined in paragraph 2.2.1.
VPP Component	The portion of a VPP located behind a Transmission Node.
VPP Operator	Is defined in paragraph 2.3.3.

Term	Definition
WEM Procedure	Means a WEM Procedure developed by AEMO.
Withdrawal	As proposed to be defined in Chapter 11 (Glossary) of the WEM Rules.

1.3. Interpretation

- 1.3.1. The following principles apply in this document unless the context requires otherwise:
- The rules of interpretation in Clause 1.4 of the WEM Rules apply to this document.
 - References to time are references to Australian Western Standard Time.
 - A reference to the WEM Rules or WEM Procedures includes any associated forms required or contemplated by the WEM Rules or WEM Procedures.
 - A reference to a paragraph refers to a paragraph of this document.
 - A reference to a clause refers to a clause or section of the WEM Rules.
 - The body of this document prevails to the extent of any inconsistency with the figures, diagrams, appendices, schedules, annexures or attachments contained within this document.
 - Text located in boxes and headed as E[X] in this Guideline is included as an explanatory note and does not form part of this Guideline. The Guideline prevails to the extent of any inconsistency with the explanatory notes contained within it.

1.4. Related documents

- 1.4.1. The documents in Table 2 are associated with this Guideline.

Table 2 Related documents

Reference	Title	Location
DER Register Information	WEM Procedure: DER Register Information	WEM Website

2. Visibility Framework

2.1. Overview

- 2.1.1. The Visibility Framework enables AEMO to access information about the existence and operation of Off-market arrangements comprising VPPs with the capability to affect material movements of energy.
- 2.1.2. The Visibility Framework has been developed to:
- help facilitate the transition of the South West Interconnected System (SWIS) to accommodate a high Distributed Energy Resources (DER) future while keeping the power system secure;
 - improve AEMO's capability to maintain Power System Security and Power System Reliability as Off-market arrangements develop at scale; and

- (c) enable a transition pathway for the future participation of VPPs in market services via the Facility registration of the VPP's components.

2.1.3. The key elements of the Visibility Framework include:

- (a) a definition for VPP and, for the purposes of applying that definition, a method for calculating the estimated size of an Aggregation of DER.
- (b) voluntary arrangements for a Rule Participant who is a VPP Operator, or who operates an Aggregation of DER, to provide to AEMO, in respect of the VPP or Aggregation of DER:
 - i. Minimum Visibility Data and updates to that data; or
 - ii. Minimum Visibility Data items or similar information and updates to that data or similar information;
- (c) a Guideline (this document) that specifies the Minimum Visibility Data Model and facilitates collection of Minimum Visibility Data items or similar information by providing for the matters specified in paragraph 1.1.2; and
- (d) processes to manage the collection, storage, use and reporting of data derived from Minimum Visibility Data or similar information.

2.2. VPP definition

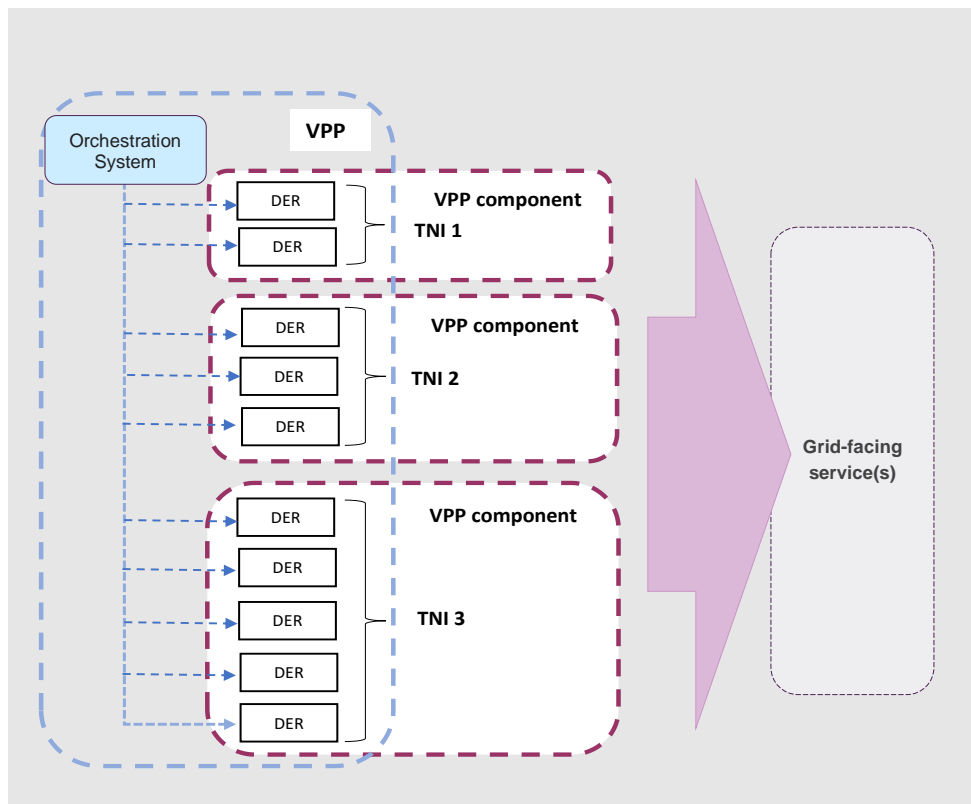
2.2.1. For the purposes of this Guideline, VPP means an Aggregation of DER that is located behind one or more Transmission Nodes and:

- (a) provides a grid-facing service; and
- (b) has been calculated in accordance with paragraph 2.3.2 to be at least 5 MW in estimated size.

2.2.2. The following terms are defined for the purposes of paragraph 2.2.1:

- (a) Aggregation of DER means a grouping of DER that is Centrally Controlled and coordinated via an Orchestration System.
 - i. Centrally Controlled means the active control of the activities of an Aggregation of DER by its Operator.
 - ii. Orchestration System means, without limitation, the technologies, technology platform(s), algorithms, process and systems used to coordinate the Injection and Withdrawal of energy from the DER within an Aggregation of DER.
- (b) Grid-facing service means any service not primarily directed at end-use customers, such as customer-facing aggregation services or site optimisation services.

Figure 2 VPP (across TNIs), VPP component (at TNI), DER (at Point of Connection) and Orchestration System



2.3. Calculation of estimated size

E[A] Purpose of calculating estimated size

The estimating size calculation relies on standardised inputs and the total capacity of DER within the Aggregation of DER that are of specified equipment types and are required to be listed on the DER Register, as per the WEM Procedure: DER Register Information. The purpose of the calculation is to determine if the Aggregation of DER is a VPP for the purpose of applying the Visibility Framework. It is separate (and different) from that which is used to determine the System Size of a Facility as prescribed by the WEM Rules relating to market registration. Table 3 shows an example of an Aggregation of DER that, following the estimated size calculation, would meet the size criteria for a VPP.

- 2.3.1. A Rule Participant who operates an Aggregation of DER may calculate the estimated size of the Aggregation of DER in accordance with paragraph 2.3.2, to determine whether the Aggregation of DER meets the definition of VPP in paragraph 2.2.1 for the purposes of this Guideline.
- 2.3.2. The estimated size calculation is the summation of the total Injection capacity and total Withdrawal capacity of DER within the Aggregation of DER that are Solar PV, Battery Storage and Electric Vehicle Storage Equipment (including charging equipment), rounded to three decimal places:

$$\text{Estimated size (MW)} = \text{total DER Equipment Injection capacity (MW)} + \text{total DER Equipment Withdrawal capacity (MW)}$$

- (a) For the purposes of the estimated size calculation above:

- i. Solar PV means a Small Generating Unit with a rated capacity of less than 10 MW;
- ii. Battery Storage means Storage Works with an export capacity of less than 5 MW; and
- iii. Electric Vehicle Storage Equipment means Storage Works with an export capacity of less than 5 MW and a rated Withdrawal capacity of less than 5 MW.

Table 3 Sample estimated size calculation

DER Equipment	Total DER Equipment Injection capacity (MW)	Total DER Equipment Withdrawal capacity (MW)	Total DER Equipment capacity (MW)
Solar PV	2.350	0	2.350
Battery Storage	1.000	1.000	2.000
Electric Vehicle	0	0.675	0.675
Sum of totals	3.350	1.675	5.025
Estimated size			5.025
Estimated size rounded to three decimal places			5.025

- 2.3.3. A Rule Participant who operates an Aggregation of DER that is a VPP as defined in paragraph 2.2.1 is a VPP Operator and may notify AEMO of the result of its calculation of estimated size and of the service or services provided by the VPP.
- 2.3.4. A Rule Participant who operates an Aggregation of DER that is not a VPP as defined in paragraph 2.2.1 may notify AEMO of the result of its calculation of estimated size and of the service or services provided by the Aggregation of DER.

2.4. AEMO may request estimated size calculation

- 2.4.1. AEMO may make a written request to a Rule Participant to calculate the estimated size of their Aggregation of DER in accordance with paragraph 2.3.2 and to provide details of the service or services provided by the Aggregation of DER.
 - (a) The Rule Participant may notify AEMO of the result of the calculation of estimated size and of the service or services provided by the Aggregation of DER.

3. Minimum Visibility Data

E[B] Arrangements for the provision and collection of visibility data

Minimum Visibility Data is the minimal information AEMO is seeking to receive from any Rule Participant who operates a VPP or Aggregation of DER, describing the physical characteristics of the VPP or Aggregation of DER (respectively) and their Off-market arrangements. A Rule Participant's Minimum Visibility Data may comprise Static, Operational or Dynamic Data items as specified in the Minimum Visibility Data Model, or similar information, and updates. A VPP Operator can meet the Static Data requirement by providing Static Data items as per the Minimum Visibility Data Model, or similar information. Other visibility data to be provided by the VPP Operator, and all data to be provided by the Operator of an Aggregation of DER, is subject to negotiation and agreement between AEMO and the Rule Participant. AEMO will first determine whether the visibility data is required before making a written request to the Rule Participant.

3.1. AEMO determination to collect Static Data

- 3.1.1. Following the receipt of a notice supplied under paragraph 2.3.3 or under paragraph 2.4.1(a) by a Rule Participant who is a VPP Operator, AEMO must determine whether:
 - (a) AEMO will collect Minimum Visibility Data items of the Static Data specified in the Minimum Visibility Data Model from the Rule Participant and paragraph 3.2.1 will apply; or
 - (b) AEMO will not collect Minimum Visibility Data items of the Static Data type specified in the Minimum Visibility Data Model from the Rule Participant and AEMO will notify the Rule Participant in writing.
- 3.1.2. A determination made by AEMO under paragraph 3.1.1 must consider:
 - (a) whether AEMO agrees that the Rule Participant is a VPP Operator;
 - (b) the service or services being provided by the VPP; and
 - (c) the suitability and availability of other data or information from an alternative source(s) and its associated cost(s).
- 3.1.3. Following the receipt of a notice supplied under paragraph 2.3.4 or paragraph 2.4.1(a) by a Rule Participant who operates an Aggregation of DER, AEMO must determine, subject to paragraph 4.2.1, whether:
 - (a) AEMO will collect the same or similar information to the Static Data items specified in the Minimum Visibility Data Model and paragraph 3.2.1 will apply; or
 - (b) AEMO will not collect the same or similar information to the Static Data items specified in the Minimum Visibility Data Model, and AEMO will notify the Rule Participant of its determination in writing.

3.2. AEMO may request and collect Minimum Visibility Data

- 3.2.1. AEMO may collect Minimum Visibility Data and updates from a Rule Participant who is a VPP Operator by:
 - (a) making a written request to the Rule Participant to provide Minimum Visibility Data items of the Static Data type following a determination made under paragraph 3.1.1(a); and/or

- (b) making a written request to the Rule Participant to provide Minimum Visibility Data items of the Operational Data type or Dynamic Data type in accordance with paragraph 4.3.2, following a determination made under paragraph 4.1.1.

3.2.2. AEMO may collect the Minimum Visibility Data and updates from a Rule Participant who operates an Aggregation of DER, subject to the following:

- (a) AEMO having first made a written request to the Rule Participant to provide the same or similar information to the Minimum Visibility Data items specified in the Minimum Visibility Data Model in accordance with paragraph 4.3.2 following a determination made under paragraph 3.1.3(a) or paragraph 4.1.1.

3.3. Application of Minimum Visibility Data requirements

3.3.1. For the purposes of this Guideline, a Rule Participant is requested to provide Minimum Visibility Data on a voluntary basis to AEMO.

3.4. Provision of Minimum Visibility Data

3.4.1. A Rule Participant may provide AEMO with Minimum Visibility Data items as specified in the Minimum Visibility Data Model or similar information, and updates following a written request from AEMO:

- (a) under paragraph 3.2.1(a).
- (b) under paragraph 3.5.3.
- (c) under paragraph 4.3.5.

3.4.2. The Minimum Visibility Data items, or similar information, and updates provided by a Rule Participant to AEMO in accordance with paragraph 3.4.1 comprise the Rule Participant's Minimum Visibility Data.

- (a) In the case of a VPP, the Rule Participant's Minimum Visibility Data is to reflect the VPP as a whole and include any Facility registered under the WEM Rules that comprises the VPP.
- (b) In the case of an Aggregation of DER, the Rule Participant's Minimum Visibility Data is to reflect the Aggregation of DER as a whole and include any Facility registered under the WEM Rules that comprises the Aggregation of DER.

3.5. Updates to Minimum Visibility Data

- 3.5.1. Where a Rule Participant's Minimum Visibility Data comprises Static or Operational Data items as specified by the Minimum Visibility Data Model, the update frequency is as specified by the Minimum Visibility Data Model, unless otherwise negotiated and agreed between AEMO and the Rule Participant under paragraph 4.3.5.
- 3.5.2. Where a Rule Participant's Minimum Visibility Data comprises similar information to the data items specified in the Minimum Visibility Data Model, the update frequency is as negotiated and agreed between AEMO and a Rule Participant under paragraph 4.3.5.
- 3.5.3. AEMO may, at any time, make a written request to a Rule Participant to update some or all of the Rule Participant's Minimum Visibility Data.

4. Minimum Visibility Data review and negotiation

E[C] Matters to be negotiated

Section 4 provides scope for AEMO to negotiate the collection of visibility data with a Rule Participant that is as close as practicable to the Minimum Visibility Data items (and the update frequency of those data items) specified in the Minimum Visibility Data Model. The negotiation process in this section must be used to:

- agree the Operational and/or Dynamic Data items to be provided to AEMO (and any changes to that data) as part of a VPP Operator's Minimum Visibility Data;
- identify and agree the visibility data to be provided to AEMO (and any changes to that data) as part of the Minimum Visibility Data of a Rule Participant who operates an Aggregation of DER;
- identify and agree what similar information can be provided to AEMO where a Rule Participant cannot provide visibility data in accordance with the Minimum Visibility Data Model;
- agree changes to the update frequency of a Rule Participant's Minimum Visibility Data items or similar information (where the update frequency is to be different from that specified in the Minimum Visibility Data model); and
- identify and notify a Rule Participant of the visibility data that AEMO will no longer collect.

There is scope for AEMO and the Rule Participant to agree that data is not to be provided.

4.1. Ongoing AEMO review of Minimum Visibility Data and determination on data collection

- 4.1.1. AEMO may at any time review a Rule Participant's Minimum Visibility Data, as specified in paragraph 3.4.1 and may determine that:
 - (a) the Rule Participant's Minimum Visibility Data is to include Minimum Visibility Data items, as specified in the Minimum Visibility Data Model, or similar information, and updates that AEMO is not already collecting from the Rule Participant.
 - (b) AEMO will cease collecting some or all of the Rule Participant's Minimum Visibility Data items or updates to those data items.

4.1.2. AEMO must make a written request to the Rule Participant in accordance with paragraph 4.3.2.

4.2. Criteria for review or determination

- 4.2.1. When making a determination under paragraph 3.1.3(a) or a review and determination under paragraph 4.1.1, AEMO must take into consideration (as applicable):
- (a) the service or services being provided by the VPP or Aggregation of DER;
 - (b) the prevailing power system conditions and AEMO's function [under **clause 2.1A.1A** of the WEM Rules] of ensuring that the SWIS operates in a secure and reliable manner;
 - (c) the suitability and availability of other data or information from an alternative source(s) and the associated cost(s);
 - (d) AEMO's readiness to use Minimum Visibility Data items of the Operational Data type or Dynamic Data type, or similar information; and
 - (e) other matters AEMO deems necessary to consider.

4.3. Negotiation process for Minimum Visibility Data collection

- 4.3.1. AEMO and a Rule Participant may negotiate the Rule Participant's Minimum Visibility Data, in respect of:
- (a) the Minimum Visibility Data items of the Static, Operational or Dynamic Data type as specified in the Minimum Visibility Data Model to be provided to AEMO and/or the update frequency; and
 - (b) the similar information to the Minimum Visibility Data items specified in the Minimum Visibility Data Model to be provided to AEMO and/or the update frequency.
- 4.3.2. AEMO's written request to a Rule Participant under paragraph 3.2.1(b), paragraph 3.2.2(a) or paragraph 4.1.2 must specify, as relevant:
- (a) each Minimum Visibility Data item or similar information that AEMO intends to collect from the Rule Participant;
 - (b) the update frequency of each Minimum Visibility Data item or similar information that AEMO intends to collect from the Rule Participant, if different to that specified in the Minimum Visibility Data Model;
 - (c) each Minimum Visibility Data item or similar information that AEMO will cease to collect from the Rule Participant and the cessation date.
- 4.3.3. AEMO expects that Rule Participants will use best endeavours to comply with a request from AEMO under paragraph 3.2.1(b), paragraph 3.2.2(a) or paragraph 4.1.2 unless:
- (a) the Rule Participant is unable to comply with AEMO's request due to technology limitations or information confidentiality;
 - (b) complying with AEMO's request will cause the Rule Participant to incur onerous effort or unreasonable cost.

- 4.3.4. For the purpose of paragraph 4.3.1 and subject to paragraph 4.3.3, AEMO and the Rule Participant may agree upon the extent to which the Rule Participant, using best endeavours, is able to comply with AEMO's written request under paragraph 3.2.1(b), paragraph 3.2.2(a) or paragraph 4.1.2.
- (a) AEMO must obtain agreement from the Rule Participant in regard of each requested Minimum Visibility Data item or similar information, as relevant, that the Rule Participant is to provide to AEMO and the update frequency.
 - (b) Where agreement cannot be obtained, AEMO or the Rule Participant may propose similar information to each requested Minimum Visibility Data item and an alternative update frequency.
 - i. AEMO and the Rule Participant must either agree on the similar information the Rule Participant is to provide to AEMO and the update frequency, or AEMO and the Rule Participant must agree to the non-provision of information.
- 4.3.5. AEMO must make a written request to a Rule Participant specifying, as relevant, the Minimum Visibility Data items or similar information and the update frequency that was agreed by the Rule Participant in accordance with paragraph 4.3.4(a) or paragraph 4.3.4(b)(i).

Appendix A.

A.1 Minimum Visibility Data Model

- A.1.1 The Minimum Visibility Data Model specifies the full set of Minimum Visibility Data items that may be requested by AEMO from a Rule Participant who is a VPP Operator.
- A.1.2 The Minimum Visibility Data Model includes Minimum Visibility Data items of the following data types:
- (a) Static data;
 - (b) Operational data; and
 - (c) Dynamic data.
- A.1.3 For each Minimum Visibility Data item specified in the Minimum Visibility Data Model, the Minimum Visibility Data Model specifies:
- (a) the data provision requirement;
 - (b) the Minimum Visibility Data item identifier and format; and
 - (c) the update frequency requirement.
- A.1.4 For each Minimum Visibility Data item specified on the Minimum Visibility Data Model, the Minimum Visibility Data Model may include:
- (a) a summary description; and
 - (b) any other information AEMO considers necessary or convenient.
- A.1.5 Table 4 details:
- (d) the mandatory Static Data items required to be provided by a Rule Participant who is a VPP Operator to AEMO as part of Minimum Visibility Data;
 - (e) the Static Data item(s) required to be provided to AEMO as part of Minimum Visibility Data by a Rule Participant who is a VPP Operator if that data is available to the Rule Participant; and
 - (f) the update frequency for each Static Data item in regard of:
 - i. a Small VPP; and
 - ii. a Large VPP.

Table 4 Minimum Visibility Data – Static Data items

Static Data item	Provision requirement	Indicative identifier (and format)	Description summary	Update frequency
NMIs joined onto the VPP	Mandatory	NMI (number)	List of NMIs currently included in the VPP	Small VPP – Quarterly Large VPP – Monthly
NMI joining date	Mandatory	ASSOC (date)	Date NMI was included as part of the VPP	Small VPP – Quarterly Large VPP – Monthly
NMI removal date	Mandatory	DEASSOC (date)	Date NMI was removed from the VPP	Small VPP – Quarterly Large VPP – Monthly
VPP estimated size	Mandatory	ESTMW (number)	As per method set-out in paragraph 2.3.2	Small VPP – Quarterly Large VPP – Monthly
VPP service(s) type	Mandatory	SERVICE1, SERVICE2 ... (text)	For example, site optimisation, load shifting, reducing IRCR exposure, voltage management	Small VPP – Quarterly Large VPP – Monthly
Orchestration System	Mandatory	ORS (text)	Description of the technology used to coordinate VPP assets to support service delivery	Small VPP – Quarterly Large VPP – Monthly
Centrally controlled capability – MW change	Mandatory	MWCH (number)	Rule Participant's estimation of the VPP's MW capability (up and down, in total)	Small VPP – Quarterly Large VPP – Monthly
Device Identity	To be provided if available to Rule Participant	DEIDENTITY (number)	Unique identifier for the device(s) actively controlled by the VPP	Small VPP – Quarterly Large VPP – Monthly

A.1.6 Table 5 details:

- (a) the Operational Data items which AEMO may determine are required to be provided as part of Minimum Visibility Data by a Rule Participant who is a VPP Operator; and
- (b) the update requirement for each required Operational Data item in regard of:
 - (i) a Small VPP; and
 - (ii) a Large VPP.

Table 5 Minimum Visibility Data – Operational Data items

Operational Data item	Provision requirement	Indicative identifier (and format)	Description summary	Update frequency
Standing profile – centrally controlled MW change	To be provided if determined as required by AEMO	MWCHTI (number)	Expected MW change per Trading Interval, per service	Small VPP – Quarterly Large VPP – Monthly
Deviation from standing profile	To be provided if determined as required by AEMO	MWCHTIDEV (number)	Expected MW change per Trading Interval, per service	Small VPP – Quarterly Large VPP – Monthly
Actual net change in centrally controlled MW	To be provided if determined as required by AEMO	ACTNETMWCH (number)	Actual MW change per Trading Interval	Small VPP – Quarterly Large VPP – Monthly

A.1.7 Table 6 details:

- (a) the Dynamic Data items which AEMO may require to be provided as part of Minimum Visibility Data by a Rule Participant who is a VPP Operator where that data is available to the Rule Participant; and
- (b) the update requirement for each Dynamic Data item in regard of:
 - i. a Small VPP; and
 - ii. a Large VPP.

Table 6 Minimum Visibility Data – Dynamic Data items

Dynamic Data item	Provision requirement	Indicative identifier (and format)	Description summary	Update frequency
Notice of service activation / deactivation	Should be provided if determined as required by AEMO	Not applicable (email or other communication)	Close to real-time confirmation of service activation / de-activation	As negotiated
Forecast net change in centrally controlled MW	Should be provided if determined as required by AEMO and is available for sharing	FORNETMWCH (number)	Close to real-time forecast of MW change per Trading Interval	As negotiated