



REGISTRATION TECHNICAL DATA GUIDE

Version 4.2

May 2024

Important notice

PURPOSE

AEMO has prepared this document to provide information about the formats for registration data required by AEMO in the Wholesale Electricity Market Systems (WEMS) in accordance with the WEM Rules, as at the date of publication.

DISCLAIMER

This document or the information in it may be subsequently updated or amended. This document does not constitute legal or business advice and should not be relied on as a substitute for obtaining detailed advice about the Electricity Industry Act 2004, the Wholesale Electricity Market (WEM) Rules, or any other applicable laws, procedures or policies. AEMO has made every effort to ensure the quality of the information in this document but cannot guarantee its accuracy or completeness.

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VERSION CONTROL

Version	Release date	Changes
3.90	28/01/2021	Updated WEM Rule references related to NSG maximum sent-out generation.
4.00	03/05/2023	Updated to meet new Taxonomy and registration data requirements under new Amending Rules that have been made by the Minister for Energy to give effect to the Energy Transformation Strategy.
4.1	18/07/2023	Updated to amend manifest errors and provide clarity on specific data fields.
4.2	6/05/2024	<p>Updated descriptions to clarify elapsed times and synchronisation times for hot, warm and cold. Additional appendix 8.1 and 8.2 with worked examples of elapsed times and synchronisation times for restart.</p> <p>Updated descriptions to clarify the following Facility capacity related terms of: maximum sent out capacity of the Facility under optimal conditions, maximum Withdrawal capacity of the Facility under optimal conditions, dependence of sent out capacity on temperature at the location of the Facility, overload Injection capacity of the Facility, overload Withdrawal capacity of the Facility, minimum stable loading level, minimum dispatchable loading level, dependence of sent out capacity on temperature at the location.</p> <p>Minor updates to other data fields to provide clarity on specific data fields.</p>

Contents

1.	Overview	4
1.1	Purpose	4
1.2	Application	4
1.3	Associated Market Procedures and Market Documents	4
1.4	Further Information	5
2.	Participant Registration	6
2.1	Participant Information – General Information	6
2.2	Participant Information – Financial Information	7
2.3	Market Participant Standing Data	9
3.	Facility Registration	10
3.1	Facility General Information	10
4.	Standing Data	14
4.1	All Facilities – fields common to all Standing Data forms	14
4.2	Network	14
4.3	Scheduled Facility	15
4.4	Non-Scheduled Facility	31
4.5	Semi-Scheduled Facility	40
4.6	Non-Dispatchable Load	53
4.7	Interruptible Load	58
4.8	Demand Side Programme	62
5.	Reserve Capacity	65
5.1	Reserve Capacity Status	65
5.2	Current Effective and Future Approved Facility Reserve Capacity Temperature Information	65
5.3	Facility Reserve Capacity Temperature Information	66
6.	Facility Technology Type	67
6.1	Scheduled Facility	67
6.2	Semi-Scheduled Facility	68
6.3	Non-Scheduled Facility	70
7.	Separately Certified Component	71
7.1	Scheduled Facility	71
7.2	Semi-Scheduled Facility	74
8.	Appendices	77

8.1	Appendix 1 - Start-Up Times	78
8.2	Appendix 1 - Start-Up Times Examples of Scenario 1 to 6	79
8.3	Appendix 2 - Minimum Physical Responses Time to a Dispatch Instruction	80

1. Overview

1.1 Purpose

- 1.1.1** This document is the WEM Registration Technical Guide. It specifies the online application forms (WEMS change requests) and field requirements that are to be submitted to AEMO for the purposes of section 2 and Appendix 1 of the WEM Rules which come into operation at a time specified by the Minister in a notice published in the Gazette.
- 1.1.2** This technical guide outlines data required to be provided to AEMO for a Rule Participant or Facility in relation to the Post-Amended Rules and the form and manner in which the Standing Data referred to in clause 1.54A.2(a) of the WEM Rules is to be provided to AEMO.
- 1.1.3** This technical guide supports the completion of the application forms outlined in the following WEM Procedures: Rule Participant Registration Processes and Facility Registration Processes.
- 1.1.4** Each of the tables below in this document corresponds with Participant Registration and Facility Registration application forms which are to be submitted online in WEMS and outlines the data fields and specification requirements.

1.2 Application

- 1.2.1** This document applies to AEMO and Rule Participants who are required to submit Participant Registration or Facility Registration application forms.
- 1.2.2** All references to rules and procedures relate to the Wholesale Electricity Market (WEM).

1.3 Associated Market Procedures and Market Documents

- 1.3.1** The following AEMO WEM Documents are associated with this technical guide:
 - Participant Registration Processes WEM Procedure ([link](#) under Market operations market procedure section)
 - Facility Registration Processes WEM Procedure ([link](#) under Market operations market procedure section)
 - WEMS MPI User Guide: Registration ([link](#) under user guide section)

- Excel applications forms for provisional approval ([link](#))
- Facility Standing Data Templates ([link](#))

1.4 Further Information

1.4.1 Please contact the WA Energy Market Management (WA EMM) team for further information regarding the fields contained in this document.

Contact	Telephone	Email
WA Energy Market Management (WA EMM) team contact number during office hours, after hours, weekends, and public holidays.	1300 989 797 (option 1)	wa.operations@aemo.com.au

2. Participant Registration

2.1 Participant Information – General Information

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Short Name	Legal entity's WEM participant short name as set by AEMO during the participant registration application.	Pre-populated	Text	N/A	2.33.1 (c)
Organisation Name	The legal name of the entity (business) for this Participant. This should be the same legal name that appears in the Australian Business Number register, with the exception where the legal entity is the trustee for a trust and the trustee's name must be specified in full.	Text Box	Text	N/A	2.33.1 (c)
Authorised Person	The Authorised Person is a person within the legal entity who has signing authority for agreements and contracts and should match the Authorised Person as stated in the WEMS Market Participant Interface (WEMS MPI). For a corporation, this should be a person that meets the definition of an "officer" under the Corporations Act.	Text Box	Text	N/A	2.33.1 (c)
Other Participant Types	If applicable, select the applicable Participant type: -Meter Data Agent -Non-Trading Participant -Regulator	Non-mandatory. Select Box	Tick Box	N/A	2.33.1 (b)
Australian Business Number	Legal entity's business number identifier is registered with the Australian Tax Office and other government agencies.	Text Box	Numeric	N/A	2.33.1 (d)
Mailing Address	Address where all physical correspondence from AEMO to the participant will be sent.	Text Box	Text/ Numeric	N/A	2.33.1 (d)
City/Town	City or Town where the legal entity (business) resides.	Text Box	Text	N/A	2.33.1 (d)

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
State	State where the legal entity (business) resides.	Drop down list	Only one option may be selected	N/A	2.33.1 (d)
Postal Code	Postcode for the legal entity (business) address.	Text Box	Numeric	N/A	2.33.1 (d)
Country	Country where the legal entity (business) resides.	Drop down list	Only one option may be selected	N/A	2.33.1 (j)
Phone	Phone number of the legal entity (business).	Text Box	Numeric	N/A	2.33.1 (c)
Fax	Fax number of the legal entity (business).	Text Box	Numeric	N/A	2.33.1 (c)
Email	Email address of authorised person.	Text Box	Text/ Numeric	N/A	2.33.1 (c)
Website	Website address of the legal entity (business).	Text Box	Text/ Numeric	N/A	2.33.1 (c)
Main Contact User	The Main Contact is the person within your legal entity (business) for which all correspondence will be sent to from AEMO (including market advisories and WEMS notifications) and should match the Main Contact stated in the WEMS MPI.	Drop down list	Only one option may be selected	N/A	2.33.1 (c)

2.2 Participant Information – Financial Information

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Bank Name	Name of the legal entity's (business) bank.	Text Box	Text	N/A	2.33.1(m)
Branch Name	Branch name of the legal entity's bank.	Text Box	Text	N/A	2.33.1(m)
Branch Description	Description of the legal entity's bank branch.	Text Box	Text	N/A	2.33.1(m)
BSB No	The legal entity's six-digit number as part of their bank account number that indicates the bank and the branch where the account is held.	Text Box	Numeric	N/A	2.33.1(m)
Branch Address	The legal entity's bank branch address.	Text Box	Text/ Numeric	N/A	2.33.1(m)

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
City/Town	City/ Town of the legal entity's bank branch.	Text Box	Text	N/A	2.33.1(m)
State	State that the legal entity's bank branch resides.	Drop down list	Only one option may be selected	N/A	2.33.1(m)
Postal Code	Postal Code of the legal entity's bank branch.	Text Box	Numeric	N/A	2.33.1(m)
Country	Country the legal entity's bank branch resides.	Drop down list	Only one option may be selected	N/A	2.33.1(m)
Phone	Phone number of the legal entity's bank branch.	Text Box	Numeric	N/A	2.33.1(m)
Fax	Fax number of the legal entity's bank branch.	Text Box	Numeric	N/A	2.33.1(m)
Austraclear Id	<p>The legal entity's Austraclear identification number assigned by Austraclear, which allows AEMO to settle funds in real time.</p> <p>This is required prior to the first invoice being settled and at least five business days prior to the date from which a participant intends to participate in the WEM. (i.e. commence trading, consuming or generating in the WEM).</p> <p>Further information on Austraclear and settlement in the WEM is on the following webpage (link here).</p> <p>To apply for an Austraclear account you must apply via the Austraclear website (link here). Please apply for Austraclear account <u>at least 2 months prior</u> to participant participating in the WEM. (i.e. commence trading, consuming or generating in the WEM which will result in an invoice being issued).</p>	Text Box	Text/ Numeric	N/A	2.33.1(l)
Account No	The legal entity's bank account number.	Text Box	Numeric	N/A	2.33.1(m)
Account Name	The legal entity's bank account name.	Text Box	Text	N/A	2.33.1(m)

2.3 Market Participant Standing Data

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
<p>For each Market Participant, the maximum Loss Factor adjusted quantity of energy, in units of MWh, that could be consumed during a Trading Interval by the Market Participant's Registered Facilities and Non-Dispatchable Loads [Appendix 1(a)]</p>	<p>This value is used to set a Market Participant's Portfolio Demand Curve as referenced in Appendix 6 of the WEM Rules, and. It is the maximum cumulative quantity that a Market Participant is prepared to buy from the Short Term Energy Market (STEM) from all of its Price-Quantity Pairs in its Portfolio Demand Curve, as referenced in Appendix 6(a)iii.</p> <p>AEMO advises that changes to this value will affect the Market Participant's single STEM Price Curve and the values that are converted into STEM Bids and STEM Offers relative to its Net Bilateral Position, as outlined under Appendix 6.</p> <p>Please note that prior to changing this value that the Market Participant should consider testing their STEM submissions relative to this standing data value in a test environment to better under the STEM Bids and STEM Offers process.</p> <p>It should also be noted:</p> <ul style="list-style-type: none"> • If you were previously registered as a Market Generator only in the Balancing Market, then no MWh was attributed and for the purposes of the new Market, a value of zero MWh can submitted to effect the same outcome. • This value is shown as "Max Demand Capability (MWh)" as shown in the WEMS MPI Report "EM_PartLimit" • This field is not applicable to the Network Operator Class and Non-Rule Participants. • This value should not be higher than the aggregate Contract Maximum Demand for all the Market Participant's loads. • If the Market Participant <u>does not</u> have any applicable <u>Contract Maximum Demand</u>; then a value of zero is acceptable if the consumption is negligible or if consumption is not negligible an estimate of the aggregated maximum consumption (MWh) of their loads will be sufficient. 	Text Box	Numeric	MWh	Appendix 1(a)

3. Facility Registration

3.1 Facility General Information

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
General Facility Information					
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i.
Facility Owner	The WEMS Participant Code has a maximum of 9 characters and is set by AEMO during Participant Registration. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)ii.
Facility Class	Facility Class applicable as set out in clause 2.29 of the WEM Rules. This field is set by AEMO during the creation of the candidate facility. This field is pre-populated.	Pre-populated	Text	N/A	2..3.3(c)iv.
Facility Street Address	Street address where the facility is located.	Text Box	Text/ Numeric	N/A	2.33.3(c)v.
City/Town	City or Town where the Facility is located.	Text Box	Text	N/A	2.33.3(c)v.
State	State where the Facility is located.	Drop down list	Only one option may be selected	N/A	2.33.3(c)v.
Postal Code	Postal Code for the Facility's street address	Text Box	Numeric	N/A	2.33.3(c)v.
Country	Country where the Facility is located.	Drop down list	Only one option may be selected	N/A	2.33.3(c)v.
Associated Intermittent Load	Specifies the Intermittent Load that is associated with the Generation System (where applicable). This field is set by participants through the Facility General Information Change Request. This field only applies to Scheduled Facilities, Semi-Scheduled Facilities and Non-Scheduled Facilities, and only one load in the drop-down menu may be associated.	Drop down list	Only one option may be selected	N/A	2.30B.5(b)

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	If your Facility is a Non-Dispatchable Load (with or without an intermittent Load), Demand Side Programme or Interruptible Load then this field is not applicable and should be left blank.				
Registration Sub-Type	<p>This field is only applicable to Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility and used to specify the sub-type of the associated Intermittent Load (if applicable).</p> <p>Specifies the sub-type of Intermittent Load:</p> <ul style="list-style-type: none"> • EG • MIL • REG • SIL <p>The default value is "EG" for all Registered Facilities in class of Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility, that have an Associated Intermittent Load.</p>	Drop down list	Only one option may be selected	N/A	System Requirement
Remote Flag	<p>Denotes if the Scheduled Facility, Semi-Scheduled Facility or Non-Scheduled Facility is located at another connection point that differs from the associated Intermittent Load.</p> <p>If your Facility is a Non-Dispatchable Load (with or without an intermittent Load), Demand Side Programme or Interruptible Load then this field is not applicable.</p> <p>Please note since 1 Oct 2023, the WEM Rules no longer permit a generator to be located at another connection point that differs from the associated Intermittent Load.</p>	Tick Box	<p>Yes or No</p> <p>This must be "No" since the WEM Rules no longer permit a generator to be located at another connection point that differs from the associated Intermittent Load.</p>	N/A	2.30B.2(d)
NMI	<p>Denotes the national meter identifiers (NMIs) for the Associated Intermittent Load. This field is pre-populated.</p> <p>If your Facility is a Non-Dispatchable Load (with or without an intermittent Load), Demand Side Programme or Interruptible Load this field is not applicable.</p>	Pre-populated	Numerical	N/A	Appendix 1(g)i.
Facility Contact Information					
Site Contact Phone (Primary)	Contact number for the site control room or person that is responsible for physical plant operations. The control room or the responsible person must be	Pre-populated	Text	N/A	2.33.3(c)xii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	contactable 24 hours and 7 days (24/7) a week. It is the Applicant's responsibility to ensure that incoming calls will be responded to at all times.				
Site Contact Phone (Backup)	The backup number for the site control room or person that is responsible for physical plant operations. The control room or the responsible person must be contactable 24/7. It is the Applicant's responsibility to ensure that incoming calls will be responded to at all times.	Pre-populated	Text	N/A	2.33.3(c)xii.
Site Email Address (Primary)	Primary email for the site control room or person that is responsible for physical plant operations.	Pre-populated	Text	N/A	2.33.3(c)xii.
Site Email Address (Backup)	Backup email for the site control room or person who is responsible for physical plant operations.	Pre-populated	Text	N/A	2.33.3(c)xii.
Other Facility Registration Information					
Evidence of Arrangement for Access	A copy of the contract with the Network Operator to gain access to the network. Given the meaning of "Arrangement for Access" in the glossary of the WEM Rules.	File Upload	Word or PDF document	N/A	2.33.3(c)xiv.
Details of the operational control over the Facility	<p>Evidence that the communication and control systems required by clause 2.35 of the WEM Rules are in place and operational, including information on the communication systems.</p> <p>A countersigned "Communication Protocol" document is required and a template for completion must be requested by emailing wa.operations@aemo.com.au</p> <p>N.b. AEMO will include unique Facility specific dial in numbers to the AEMO's control room in the template for each Facility's Communication Protocol.</p> <p>N.b. If your Facility is a Non-Dispatchable Load (with or without an Intermittent Load) or Network Facility then this field is not applicable.</p>	File Upload	PDF document	N/A	2.33.3.(c)xv.
Commencement Information					
Proposed Current Date of Commissioning of the Facility	<p>The Participant's declaration of the proposed start date of commissioning for the facility. Submitted to AEMO in accordance with clause 3.21A of the WEM Rules.</p> <p>If your Facility has previously been commissioned, then this field is not applicable.</p> <p>If your Facility is a Non-Dispatchable Load (with or without an intermittent Load) or Network Facility then this field is not applicable.</p>	Text Box	<p>Numeric or select date from calendar ratio pop-up.</p> <p>If you do not have proposed date of commencement of commissioning, then you may leave this field blank.</p>	N/A	2.33.3(c)xiii.1

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Current Commissioning Test Plan	<p>The latest uploaded Commissioning Test Plan (CTP) of the facility. Submitted to AEMO in accordance with clause 3.21A of the WEM Rules. The CTP should complement the approved GPS Test Procedure and encapsulate as much of the commissioning schedule as practical.</p> <p>If your Facility has previously been commissioned, then this field is not applicable.</p> <p>If your Facility is a Non-Dispatchable Load (with or without an intermittent Load) or Network Facility then this field is not applicable.</p> <p>If you do not have a Commissioning Test Plan, then you may leave this field blank.</p>	File Upload	<p>PDF document</p> <p>If you do not have a Commissioning Test Plan, then you may leave this field blank.</p>	N/A	2.33.3(c)xiii.2

4. Standing Data

4.1 All Facilities – fields common to all Standing Data forms

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Standing Data Change Supporting Evidence Comment	Participants can provide a comment on the reason for the Standing Data change(s) as per clause 2.34.3(b) of the WEM Rules.	Text Box	Text/ Numeric	N/A	2.34.3(b)
Further support documentation	Optional field, that a Participant may use to provide any supporting documentation for their Standing Data application.	File Upload	A Word document or pdf.	N/A	System Requirement

4.2 Network

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Facility Name	Name of Facility. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i
RoCoF Ride-Through Capability of the Facility as determined by AEMO [Appendix 1(i).]	<p>The Rate of Change of Frequency (RoCoF) Ride-Through Capability of the Facility, expressed in Hz per 500ms as determined by AEMO under clause 2.34A.12C of the WEM Rules.</p> <p>If AEMO has <u>not</u> made a separate determination under paragraph 11.2.6 of the FCESS Accreditation WEM Procedure (link here) then the value of 0.25 Hz over 500ms (RoCoF Safe Limit) must be submitted.</p> <p>Published RoCoF Ride-Through Capability values which had have separate determinations are also available in the link (here) under the sheet “Current RoCoF Ride-Through Values”</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p> <p>If you intend to apply for a separate determination for RoCoF Ride-Through Capability then information on the process is available here.</p> <p>Facilities with a RoCoF Ride-Through capability value above the RoCoF Ride-Through Cost Recovery Limit, will be not be deemed causers of the RoCoF Control Service and will be excluded from recovery of the costs of the control service.</p>	Hz over 500ms	Appendix 1(i).]

4.3 Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i
The total nameplate capacity of the Facility's Energy Producing System, expressed in MW [Appendix 1(b)i.]	<p>Name plate capacity of facility, as per the output subject to ratings of any primary plant or equipment.</p> <p>For synchronous generators this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters.</p> <p>Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves.</p>	Text Box	Numeric	MW	Appendix 1(b)i.
The System Size [Appendix 1(b)iii.]	The MW value in accordance with the glossary definition in WEM Rules for System Size.	Text Box	Numeric	MW	Appendix 1(b)iii.
Is the Facility a Small Aggregation [Appendix 1(b)iv.]	Denotes whether the Facility meets the glossary definition in the WEM Rules for Small Aggregation.	Tick Box	Ticked = Yes, Unticked = No		Appendix 1(b)iv.
The maximum sent out capacity of the Facility under optimal conditions, expressed in MW [Appendix 1(b)v.]	<p>This is the maximum sent-out capacity at optimal operating conditions for the Facility.</p> <p>This represents the maximum physical capacity available for Injection to AEMO under normal operating conditions for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s).</p>	Text Box	Numeric	MW	Appendix 1(b)v.
The maximum Withdrawal capacity of the Facility under optimal conditions, expressed in MW [Appendix 1(b)vi.]	Maximum capacity withdrawn from the SWIS at the connection point, including any downstream loads such as intermittent or parasitic/auxiliary loads. Where maximum Withdrawal capacity is at optimal conditions from withdrawing from the network.	Text Box	Numeric	MW	Appendix 1(b)vi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The dependence of sent out capacity on temperature at the location of the Facility [Appendix 1(b)vii.]	<p>Sent out capacity as a function of temperature at the location of the facility.</p> <p>Please note the temperature dependence data must be provided to at least the maximum sent out capacity of the Facility under optimal conditions.</p> <p>A separate relationship for each fuel type is required expressed in terms of generated MW.</p> <p>Maximum sent out capacity (MW) details for each 0.1C interval from 0°C to 45°C, or higher if specified by the Network Operator based on physical location.</p>	File Upload	<p>File format to be .csv with the following fields on each line:</p> <ul style="list-style-type: none"> • facility_identity (character 24), • fuel_type (character 1) – L N, followed by the following data pairs for each temperature breakpoint: • temperature (real 3:1), • facility_capability (real 6:3) <p>Note that the first row must be a header row, containing the names of the four columns respectively; facility_identity, fuel_type, temperature, facility_capability.</p> <p>File template can be found on the following link (here)</p>	MW and °C	Appendix 1(b)vii.
The method to be used for determining the ambient temperature at the site of the Facility (where if no method is specified, a constant temperature of 41 degrees Celsius will be assumed) [Appendix 1(b)viii.]	<p>One of the following methods must be chosen:</p> <ul style="list-style-type: none"> • 41 °C • SCADA • BOM <p>If your Facility is not temperature dependent or comprised of Intermittent Generation Systems only, then a value of 41 °C should be submitted.</p>	Drop Down	Can only select one option	N/A	Appendix 1(b)viii.
Temperature Location	Location of BOM or SCADA temperature station.	Drop Down	<p>Can only select one option.</p> <p>For SCADA one of the following:</p> <ul style="list-style-type: none"> • CKB AMBIENT C • KMP AMBIENT C • MGA AMBIENT C • PJR AMBIENT C <p>For BOM one of the following: Albany Airport, Badgingarra, Bickley, Bunbury, Collie East, Dwellingup, Garden Island HSF, Geraldton Airport 8351, Hopetoun</p>	N/A	Appendix 1(b)viii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			<p>North, Jandakot Aero, Kalgoorlie-Boulder Airport, Mandurah, Pearce RAAF, Perth Airport, Perth Metro, Rottneest Island, Southern Cross Airfield, Swanbourne.</p> <p>If an appropriate BOM station is not on the list above please contact wa.operations@aemo.com.au to discuss if another option exists.</p>		
Details of any potential energy limits of the Facility [Appendix 1(b)xvi.]	<p>Details of any potential energy limits of the facility.</p> <p>This field is only applicable if AEMO requests specific information from the Rule Participant in relation to permanent operational limits that has not been captured in other registration data fields. This information is used by AEMO to develop rules for scheduling plant in case of an emergency or non-standard scenario. (e.g. if the plant has an ancillary load at a different connection point to the main generation equipment, and outages at different substations can impact facility output levels).</p>	File Upload	Word or Pdf document	N/A	Appendix 1(b)xvi.
Is the Facility a Fast Start Facility [Appendix 1(b)xvii.]	Denotes whether the Facility meets the definition of a Fast Start Facility under the WEM Rules Glossary.	Tick Box	Ticked = Yes, Unticked = No	N/A	Appendix 1(b)xvii.].
Minimum Synchronisation Time (Cold) [Appendix 1(b)xviii.1.]	<p>Cold synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “cold” state. “Cold” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Cold) has subsequently passed.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 5 and 6.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.1.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Elapsed Synchronisation Time (Cold) [Appendix 1(b)xviii.1.]	<p>Number of minutes elapsed for Cold Sync time.</p> <p>This is the time relative to the Facility shutdown, after which the Facility will be considered in the “cold” state for synchronisation purposes.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 5 and 6.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.1.
Minimum Synchronisation Time (Warm) [Appendix 1(b)xviii.2.]	<p>Warm synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “warm” state. “Warm” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Warm) has subsequently passed.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 3 and 4.</p> <p>If this field is not applicable, please leave field as zero</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.2.
Elapsed Synchronisation Time (Warm) [Appendix 1(b)xviii.2.]	<p>Number of minutes elapsed for Warm Sync time.</p> <p>This is the time related to the Facility shutdown, after which the Facility will be considered in the “warm” state for synchronisation purposes, until it transitions to the “cold” state.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 3 and 4.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.2.
Minimum Synchronisation Time (Hot) [Appendix 1(b)xviii.3.]	<p>Hot synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “hot” state. “Hot” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Hot) has subsequently passed.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 1 and 2.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.3.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	If this field is not applicable, please leave field as zero.				
Elapsed Synchronisation Time (Hot) [Appendix 1(b)xviii.3.]	<p>Number of minutes elapsed for Hot Sync time.</p> <p>This is the time related to the Facility shutdown, after which the Facility will be considered in the “hot” state for synchronisation purposes, until it transitions to the “warm” state.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details, specifically to Scenario 1 and 2.</p> <p>N.b. This should typically be zero, as a Facility is generally considered “hot” immediately after shutdown after operation, and any “deadtime” before being able to restart is covered by the Minimum Restart Time property.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(b)xviii.3.
The sent-out capacity when the Facility is operating at minimum stable loading level, expressed in MW [Appendix 1(b)xx.]	<p>The minimum stable Injection level of the Facility, expressed in MW for primary Non-Liquid Fuel. It is the technical minimum Injection level at which the Facility can remain in stable operation. This is the level that the Facility would not normally be dispatched to (see Minimum Dispatchable Load Level), but may be directed to operate at by AEMO if required (e.g. under emergency conditions).</p> <p>Note that this is generally equal to Minimum Generator Capacity and may be equal or lower than the Minimum Dispatchable Generation. The value specified must be applicable for an ambient temperature of 15 °C.</p>	Text Box	Numeric	MW	Appendix 1(b)xx.
The sent-out capacity when the Facility is operating at the minimum dispatchable loading level, expressed in MW [Appendix 1(b)xxi.]	<p>The normal minimum Injection for the Facility after which it can be dispatched by AEMO, expressed in MW for primary Non-Liquid Fuel. Note that this is typically equal to Minimum Generator Capacity, however the dispatchable generation could be set higher than the Minimum Stable Load Level. The value specified must be applicable for an ambient temperature of 15 °C.</p>	Text Box	Numeric	MW	Appendix 1(b)xxi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The minimum physical response time before the Facility can begin to respond to a Dispatch Instruction when the Facility is running. [Appendix 1(b)xxii.]	<p>The minimum time before a Facility can respond after receiving an Electronic Dispatch Instruction, when the Facility is running.</p> <p>Refer to Appendix 2 of this guide for more details., where the $t_2 - t_1$.</p> <p>N.b. The Minimum Physical Responses Time to a Dispatch Instruction should be less than a minute. If the time is longer please include an explanation of why the electronic response is more than a minute in the "Further supporting documentation" section of the change request.</p>	Text Box	Days, Hours, Minutes, Seconds	Refer to Format	Appendix 1(b)xxii.
Any output range between minimum dispatchable loading level and nameplate capacity in which the Facility is incapable of stable or safe operation [Appendix 1(b)xxiii.]	Any output ranges between minimum dispatchable loading level and nameplate capacity in which the facility is incapable of stable or safe operation.	File Upload	<p>File format to be .csv with the following fields on each line:</p> <ul style="list-style-type: none"> • sequence_number (integer 3), • facility_identity (character 24) • fuel_type (character 24) <p>Followed by the following data pairs for each disallowed region:</p> <ul style="list-style-type: none"> • lower_disallowed_load (real 6:1), • upper_disallowed_load (real 6:1), <p>The last pair determined by carriage return.</p> <p>A separate set of data is required for each fuel type.</p> <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	MW	Appendix 1(b)xxiii.
The minimum load at the connection point of the Facility that will automatically trip off if the Facility fails, expressed in MW [Appendix 1(b)xxiv.]	<p>Refers to parts of the generator unit/station service load which are automatically disconnected by the Participant.</p> <p>Includes unit auxiliary load which is supplied directly from the generator via the unit transformer and station</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW	Appendix 1(b)xxiv.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	load supplied from the network if disconnected automatically when the generator trips. Participants may need to know how to handle where trippable load is dependent on the unit generated output load.				
The sub-transient, transient and steady state impedances (positive, negative and zero sequence) for the Facility [Appendix 1(b)xxv.]	<p>Sub-transient, transient and steady state impedances (positive, negative and zero sequences) for the facility and any other related data required.</p> <p>Positive Impedance for Element.</p> <p>While included, AEMO will generally get this information via access connection information through Generator Performance Standard (GPS) submissions, and therefore should align with the GPS process.</p>	File Upload	<p>Electrical model data– file format to be .csv with each line in the file having the fields indicated below:</p> <ul style="list-style-type: none"> • Item_sequence_number (Integer 3), • facility_identity (character 24), • resistance (real 8:5 with exponent), • • positive_sequence_steadystate_reactance (real 8:5 with exponent), • positive_sequence_steadystate_susceptance (real 8:5 with exponent), • negative_sequence_reactance (real 8:5 with exponent), • zero_sequence_reactance (real 8:5 with exponent), • sub_transient_reactance (real 8:5 with exponent), • transient_reactance (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	N/A	Appendix 1(b)xxv.
Standing Maximum Upwards Ramp Rate [Appendix 1(b)xxvi.]	<p>Normal ramp up (generated basis).</p> <p>Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).</p>	Text Box	Numeric Value must be positive	MW/min	Appendix 1(b)xxvi.
Standing Maximum Downwards Ramp Rate [Appendix 1(b)xxvii.]	<p>Normal ramp down (generated basis).</p> <p>Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).</p>	Text Box	Numeric Value must be positive	MW/min	Appendix 1(b)xxvii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Emergency upwards ramp rate [Appendix 1(b)xxviii.]	Emergency Ramp up (generated basis), If an Emergency Ramp up is not applicable, provide the normal ramp up rate (generated basis). Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(b)xxviii.
Emergency downwards ramp rate [Appendix 1(b)xxix.]	Emergency Ramp down (generated basis). If Emergency Ramp down is not applicable, provide the normal ramp down (generated basis). Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(b)xxix.
The overload Injection capacity of the Facility, if any, expressed in MW [Appendix 1(b)xxx.]	This is the maximum sent-out capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS. This represents the maximum physical capacity available for Injection to AEMO under an Emergency Operating State for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s). If your Facility does not have an overload Injection capacity, provide the maximum sent-out capacity at optimal operating conditions for the Facility. This field sets the maximum absolute value that may be submitted for Injection in Real-Time Market Submissions.	Text Box	Numeric Value must be positive	MW	Appendix 1(b)xxx.
The overload Withdrawal capacity of the Facility, if any, expressed in MW [Appendix 1(b)xxxi.]	This is the maximum Withdrawal capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS. This represents the maximum physical capacity available for Withdrawal to AEMO under an Emergency Operating State for the SWIS. This value does not need to match the contracted maximum demand for the Facility's connection point(s).	Text Box	Numeric Value must be positive	MW	Appendix 1(b)xxxi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>If your Facility does not have an overload withdrawal capacity, provide the maximum Withdrawal capacity of the Facility under optimal conditions.</p> <p>This field sets the maximum absolute value that may be submitted for Withdrawal in Real-Time Market Submissions.</p>				
The AGC capabilities of the Facility [Appendix 1(b)xxxii.]	<p>AGC Capabilities including:</p> <ul style="list-style-type: none"> - Min loading at which AGC can be provided. - Max loading at which AGC can be provided. - AGC response rate <p>A separate set of data is required for each fuel type.</p> <p>If the Facility does not have AGC capability then:</p> <ul style="list-style-type: none"> • specify if the Facility is Business-to Business (B2B) enabled for 5-minute dispatch; or • has neither AGC nor B2B enable for 5-minute dispatch. 	File Upload	<p>Generated MW/min should not be greater than the normal ramp, and must not be greater than the emergency ramp.</p> <p>File format to be .csv with the following fields on each line:</p> <ul style="list-style-type: none"> • sequence_number (integer 3), • facility_identity (character 24), • fuel_type (character 24), • min_agc_load (real 6:1), <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p> <p>OR</p> <p>If the Facility does not have AGC capability then:</p> <ul style="list-style-type: none"> • specify if the Facility is Business-to Business (B2B) enabled for 5-minute dispatch; or • has neither AGC nor B2B enable for 5-minute dispatch. 	MW	Appendix 1(b)xxxii.
The black start capability of the Facility [Appendix 1(b)xxxiii.]	Details of facilities capability to provide system start capacity.	File Upload	File format to be .csv with each line in the file having the following fields:	N/A	Appendix 1(b)xxxiii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			<ul style="list-style-type: none"> Item_sequence_number (integer 3), generator_id (character 24), black_start (Boolean 1=yes, 0=no) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>		
The short circuit capability of Facility equipment [Appendix 1(b)xxxiv.]	<p>Details the circuit fault devices and ratings.</p> <p>The circuit fault devices' identity information should match those identified on the Single Line Diagram. (Appendix 1.(b).xxi)</p> <p>Typically, short circuit ratings of primary plant such as circuit breakers are provided at the point of connection and downstream busbar.</p>	File Upload	<p>Data required in kiloamps for each circuit making/breaking device in the generator connection circuit.</p> <p>File format should be .csv with the following fields on each line</p> <ul style="list-style-type: none"> sequence_number (integer 3), facility_identity (character 24), circuit_fault_make_break_device_identity (character 24), fault_make_rating (real 8:5 with exponent), fault_break_rating (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	N/A	Appendix 1(b)xxxiv.
Evidence that the communication and control systems required by section 2.35 are in place and operational [Appendix 1(b)xxxv.]	This field is redundant, instead participants should have uploaded this information in a document called the "Communication Protocol" in the Facility General Information Change Request under the field of "Details of the operational control over the Facility", refer to Section 3.1 of this Technical Guide.	File Upload	<p>As this field is mandatory in WEMS MPI please attach a document with the following wording:</p> <p>"The Communication Protocol will or has been submitted in the Facility General Information Change Request under the field of Details of the operational control over the Facility."</p>	N/A	Appendix 1(b)xxxv.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The single line diagram for the Facility, including the locations of transformers, switches, operational and settlement meters [Appendix 1(b)xxxvi.]	<p>Details the locations of transformers, switches, operational and settlement meters.</p> <p>Same information and format required as for network topology.</p> <p>Any other related data should include generator winding configuration (e.g. connection delta, star, other).</p> <p>Operations data is also required to allow AEMO to model the connecting network and its equipment capabilities.</p> <p>Data required includes:</p> <ul style="list-style-type: none"> • circuit ratings in amps calculated as the rating of the lowest rated series connected item of plant in a circuit • circuit high and low voltage limits in kilovolts (kV) – determined from the rating of the equipment comprising the circuit components (e.g. voltage and current transformers, surge diverters, transformers, insulation, etc.). • Fault make/ fault break capability for each circuit making/breaking device in a circuit. 	File Upload	<p>AEMO requires clearly labelled single line diagrams in Adobe Acrobat format (.pdf files) and .dxf/.dgn if relevant.</p> <p>Diagrams must include the location of transformers, switches, operation and interval meters (which are to be maintained in the Meter Registry)</p> <p>Diagrams must illustrate the following.</p> <p>Circuit rating:</p> <ul style="list-style-type: none"> • circuit_identity • circuit_rating_amps (real 8:3), • circuit_high_kvolt_limit (real 8:3), • circuit_low_kvolt_limit (real 8:3) <p>Circuit fault make and break capability:</p> <ul style="list-style-type: none"> • circuit_identity (character 24), • circuit_fault_make_break_device_identity (character 24), • fault_make_rating (real 8:5 with exponent), • fault_break_rating (real 8:5 with exponent) <p>Diagrams must be kept up to date and revised diagrams with amendments clearly indicated to AEMO in accordance with the WEM Rules.</p>	N/A	Appendix 1(b)xxxvi.
The network node or nodes at which the Facility can connect [Appendix 1(b)xxxvii.]	<p>The network nodes at which the facility can connect (if more than one).</p> <p>If the facility can be connected at more than one connection point, the alternate connection points should be detailed.</p> <p>Note that the primary connection point is entered in the field "Connection Point". For a facility without an</p>	File Upload	<p>The name of the network node at which the facility is connected.</p> <p>If facility can connect at more than one node a circuit single line diagram in similar format as the facility single line diagram showing each network connection node and the circuit elements in each connection node.</p>	N/A	Appendix 1(b)xxxvii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	alternate connection point, please submit a file with the message "Only 1 connection point for this facility."		The connection node should include the busbar name, number and section of that busbar if there is more than one section. The description must be completely unambiguous.		
The Transmission Node Identifier [Appendix 1(b)xxxviii.]	The Transmission Node Identifier for the Facility.	Text Box	4-digit alphanumeric TNI value. The TNI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(b)xxxviii.
National Meter Identifier (NMI) of each metering point for the Facility, where applicable [Appendix 1(b)xxxix.]	The National Meter Identifier (NMI) of each metering point for the Facility,	Text Box	10-digit NMI value. If multiple NMIs are applicable then use commas to separate, with a single space. The NMI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(b)xxxix.
The Metering Data Agent for the Facility [Appendix 1(b)xli.]	The Metering Data Agent for the facility. One Meter Data Agent must be selected.	Drop down list	Only one option may be selected. (i.e. WPNTWK)	N/A	Appendix 1(b)xli.
FCESS & ROCOF Ride-Through Capability					
Frequency Co-optimised Essential System Service Accreditation Parameters [Appendix 1(h).]	Frequency Co-optimised Essential System Service Accreditation Parameters approved by AEMO.	File Upload	If this field is not applicable, please leave field blank. The template FCESS Accreditation Form is available here and the form must be approved by AEMO prior to submitting in WEMS. This must be in excel format and must be the same version AEMO approved. Further information on FCESS Accreditation process is available here .	N/A	Appendix 1(h).
RoCoF Ride-Through Capability of the Facility as determined by AEMO [Appendix 1(i).]	RoCoF Ride-Through Capability of the Facility as determined by AEMO. If AEMO has <u>not</u> made a separate determination under paragraph 11.2.6 of the FCESS Accreditation WEM Procedure (link here) then the value of 0.25 Hz over 500ms (RoCoF Safe Limit) must be submitted.	Text Box	Numeric Value must be positive If you intend to apply for a separate determination for RoCoF Ride-Through Capability then information on the process is available here .	Hz over 500ms	Appendix 1(i).

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	Published RoCoF Ride-Through Capability values which had have separate determinations are also available in the link (here) under the sheet "Current RoCoF Ride-Through Values"		Facilities with a RoCoF Ride-Through capability value above the RoCoF Ride-Through Cost Recovery Limit, will not be deemed causers of the RoCoF Control Service and will be excluded from recovery of the costs of the control service.		
WEMDE and Operational Planning Data					
Normally-on Load	<p>A Facility, for which the forecast quantity of Withdrawal is already accounted for in the Forecast Operational Demand.</p> <p>By having Normally-on load <u>ticked</u>, the following applies:</p> <ol style="list-style-type: none"> 1. The Withdrawal quantity for the Facility is already forecasted by AEMO and accounted for in the Forecast Unscheduled Operational Demand; and 2. Notwithstanding the above, the Market Participant for this Facility <u>must still</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status) as it does not change a Market Participant rule obligation to submit a market Withdrawal quantity. <p>By having Normally-on load <u>unticked</u>, the following applies:</p> <ol style="list-style-type: none"> 1. The Withdrawal quantity for the Facility is <u>not</u> forecasted by AEMO and will not be accounted for in the Forecast Unscheduled Operational Demand; and 	Tick Box	Ticked = Yes, Unticked = No	N/A	2.1A.2.(m) and the Market Schedule Procedure.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>2. The Market Participant for this Facility <u>must</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status).</p> <p>If you are unsure, please leave as unticked for "No". AEMO will review your circumstances and notify you if the value should be a "Normally-on Load"</p>				
Storage Constraints	<p>Where there are limitations on the Injection or Withdrawal capability of a Registered Facility based on the Charge Level of associated Electric Storage Resources.</p> <p>If the Facility does not contain an Electric Storage Resource (battery) it must be left unticked.</p>	Tix Box	Ticked = Yes, Unticked = No	N/A	7.5.10 and 7.5.10A
Inertia	<p>The kinetic energy (at nominal frequency) that is extracted from the rotating mass of a machine coupled to the power system to compensate an imbalance in the system frequency.</p> <p>Alternatively, the 'synthetic inertia' provided by non-rotating machines which can be programmed to provide inertia to the system. An example is inverter-based technology.</p> <p>If the Facility does not provide inertia then enter a value of zero.</p> <p>Otherwise, if the Facility does provide inertia, the value should be one of the following:</p> <ul style="list-style-type: none"> • If the Facility has been accredited for RoCoF control service, the value approved by AEMO ; or • If the Facility has not been accredited for RoCoF control service then the inertia value submitted must be reflect the sum of all inertia values in the manufacturer's data sheets for all the generation systems behind the Facility's connection point(s); or 	Text Box	Numeric	MWs	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 2.4.2(a))

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<ul style="list-style-type: none"> If neither of the above information is available then contact wa.operations@aemo.com.au so AEMO can assist you in deriving an appropriate value. 				
Tau Factor	The Facility Speed Factor for a Facility, as determined in accordance with the Frequency Co-optimised Essential System Services Accreditation WEM Procedure; or if it has not undergone the Accreditation process the value must be "999".	Text Box	Numeric	seconds	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 7.2.1)
Unconstrained Forecasts	<p>This determines where the Unconstrained Forecast Source for the Primary Dispatch Interval or Primary Pre-Dispatch Intervals will come from..</p> <p>AEMO recommends the following forecast types for the respective Facility Classes:</p> <ul style="list-style-type: none"> Scheduled Facility, Demand Side Programme and Interruptible Load must specify RTMS Semi-Scheduled Facility should specify SCADA. Non-Scheduled Facility should specify Persistence <p>If you operate a Semi-Scheduled Facility or Non-Scheduled Facility and you would prefer to submit a different forecast type other than that outlined above, you must email wa.operations@aemo.com.au to have AEMO to assess the suitability of an alternate forecast type.</p>	Drop Down	<p>Can only select one:</p> <ul style="list-style-type: none"> RTMS SCADA PERSISTENCE 	N/A	2.1A.2.(m) and the Market Schedules Procedure.
If the Facility has an Electric Storage Resource, the normal ramp rate upwards whilst withdrawing, expressed as MW/min	<p>Normal ramp up (change towards injection) on an as generated basis.</p> <p>If your Facility does not have an Electric Storage Resource (battery) leave this field blank.</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW/min	2.1A.2.(m) and Appendix 1(b)xvi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
If the Facility has an Electric Storage Resource, the normal ramp rate downwards whilst withdrawing, expressed as MW/min	Normal ramp down (change towards withdrawal) on an as generated basis. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric Value must be positive	MW/min	2.1A.2.(m) and Appendix 1(b)xvi.
If the Facility has an Electric Storage Resource, the emergency ramp rate upwards whilst withdrawing, expressed as MW/min	Emergency Ramp up (change towards injection). If Emergency Ramp up is not applicable, provide the normal ramp up (change towards injection) on an as generated basis. If this field is not applicable, then leave as blank.	Text Box	Numeric Value must be positive	MW/min	2.1A.2.(m) and Appendix 1(b)xvi.
If the Facility has an Electric Storage Resource, the emergency ramp rate downwards whilst withdrawing, expressed as MW/min	Emergency Ramp down (change towards withdrawal). If Emergency Ramp down is not applicable, provide the normal ramp down (change towards withdrawal) on an as generated basis. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric Value must be positive	MW/min	2.1A.2.(m) and Appendix 1(b)xvi.
If the Facility has an Electric Storage Resource, the Minimum State of Charge Capacity, expressed as a percentage (%)	State of Charge (%) should be expressed relative to the total usable (dispatchable) storage quantity of the Facility, at optimal conditions, where the usable quantity may be lower than the Facility's nominal capacity. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric Value must be positive	%	2.1A.2.(m) and Appendix 1(b)xvi.
If the Facility has an Electric Storage Resource, the Facility's Electric Storage Resource's total MWh capacity	The usable (dispatchable) storage quantity of the Electric Storage Resource, where the usable quantity may be lower than the Facility's nominal capacity. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric	MWh	2.1A.2.(m) and Appendix 1(b)xvi.

4.4 Non-Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Non-Scheduled Facility					
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3li
The total nameplate capacity of the Facility's Energy Producing System, expressed in MW [Appendix 1(d)i.]	<p>Nameplate capacity of facility, as per the output subject to ratings of any primary plant or equipment.</p> <p>For synchronous generators this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters.</p> <p>Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves.</p>	Text Box	Numeric		Appendix 1(d)i.
The System Size [Appendix 1(d)iii.]	The MW value in accordance with the glossary definition in WEM Rules for System Size.	Text Box	Numeric	MW	Appendix 1(d)iii.
Is the Facility a Small Aggregation [Appendix 1(d)iv.]	Denotes whether the Facility meets the glossary definition in the WEM Rules for Small Aggregation.	Tick Box	Ticked = Yes, Unticked = No	N/A	Appendix 1(d)iv.
The maximum sent out capacity of the Facility under optimal conditions, expressed in MW [Appendix 1(d)v.]	<p>This is the maximum sent-out capacity at optimal operating conditions for the Facility.</p> <p>This represents the maximum physical capacity available for Injection to AEMO under normal operating conditions for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s).</p>	Text Box	Numeric	MW	Appendix 1(d)v.
The maximum Withdrawal capacity of the Facility under optimal conditions, expressed in MW [Appendix 1(d)vi.]	Maximum capacity withdrawn from the SWIS at the connection point, including any downstream loads such as intermittent or parasitic/auxiliary loads. Where Withdrawal capacity is at optimal conditions for withdrawing from the network.	Text Box	Numeric	MW	Appendix 1(d)vi.
The dependence of sent out capacity on temperature at the location of the Facility, if applicable [Appendix 1(d)vii.]	<p>Sent out capacity as a function of temperature at the location of the facility.</p> <p>Please note the temperature dependence data must be provided to at least the maximum sent out capacity of the</p>	File Upload	File format to be .csv with the following fields on each line:	MW and °C.	Appendix 1(d)vii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>Facility under optimal conditions, which must be up to the declared sent-out capacity (if applicable).</p> <p>A separate relationship for each fuel type is required expressed in terms of generated MW.</p> <p>Maximum sent out capacity (MW) details for each 0.1C interval from 0°C to 45°C, or higher if specified by the Network Operator based on physical location.</p>		<ul style="list-style-type: none"> • facility_identity (character 24), • fuel_type (character 1) – L N, followed by the following data pairs for each temperature breakpoint: • temperature (real 3:1), • facility_capability (real 6:3) <p>Note that the first row must be a header row, containing the names of the four columns respectively; facility_identity, fuel_type, temperature, facility_capability.</p> <p>File template can be found on the following link (here)</p> <p>OR</p> <p>If your Facility is not temperature dependent, then attach a file with comment "Facility is not temperature dependent".</p>		
The sent-out capacity when the Facility is operating at the minimum dispatchable loading level, expressed in MW [Appendix 1(d)ix.]	Defined as the emergency level. Note that this is typically equal to Minimum Generator Capacity, however the dispatchable generation could be set higher than the technical minimum generator capacity. This is as generated at 15 °C.	Text Box	Numeric	MW	Appendix 1(d)ix
The minimum physical response time before the Facility can begin to respond to a direction from AEMO to change its output when the Facility is running [Appendix 1(d)x.]	Minimum response time before the facility can begin to respond to a direction from AEMO to change its output.	Text Box	Days, Hours, Minutes, Seconds	Refer to Format	Appendix 1(d)x.
The minimum load at the connection point of the Facility that will automatically trip off if the Facility fails, expressed in MW [Appendix 1(d)xi.]	<p>Refers to parts of the generator unit/station service load which are automatically disconnected by the Participant.</p> <p>Includes unit auxiliary load which is supplied directly from the generator via the unit transformer and station load supplied from the network if disconnected automatically when the generator trips. Participants may need to know how to handle where trippable load is dependent on the unit generated output load.</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW	Appendix 1(d)xi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Sub-transient, transient and steady state impedances (positive, negative and zero sequence) for the Facility [Appendix 1(d)xii.]	<p>Sub-transient, transient and steady state impedances (positive, negative and zero sequence) for the facility and any other related data required.</p> <p>Positive Impedance for Element.</p> <p>While included, AEMO will generally get this information via access connection information through Generator Performance Standard (GPS) submissions, and therefore should align with the GPS process.</p>	File Upload	<p>Electrical mode– da–a - file format to be .csv with the each line in the file having the fields indicated below:</p> <ul style="list-style-type: none"> • Item_sequence_number (Integer 3), • facility_identity (character 24), • resistance (real 8:5 with exponent), • positive_sequence_steadystate_reactance (real 8:5 with exponent), • positive_sequence_steadystate_susceptance (real 8:5 with exponent), • negative_sequence_reactance(real 8:5 with exponent), • zero_sequence_reactance (real 8:5 with exponent), • sub_transient_reactance (real 8:5 with exponent), • transient_reactance (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	N/A	Appendix 1(d)xii.
Standing Maximum Upwards Ramp Rate [Appendix 1(d)xiii.]	Normal ramp up (generated basis).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(d)xiii.
Standing Maximum Downwards Ramp Rate [Appendix 1(d)xiv.]	Normal ramp down (generated basis).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(d)xiv.
Emergency upwards ramp rate, if applicable [Appendix 1(d)xv.]	Emergency Ramp up (generated basis), If Emergency Ramp up is not applicable, provide the normal ramp up (generated basis).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(d)xv.
Emergency downwards ramp rate, if applicable [Appendix 1(d)xvi.]	Emergency Ramp down (generated basis) If Emergency Ramp down is not applicable, provide the normal ramp down (generated basis).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(d)xvi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The overload Injection capacity of the Facility, if any, expressed in MW [Appendix 1(d)xvii.]	<p>This is the maximum sent-out capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS.</p> <p>This represents the maximum physical capacity available for Injection to AEMO under an Emergency Operating State for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s).</p> <p>If your Facility does not have an overload Injection capacity, provide the maximum sent-out capacity at optimal operating conditions for the Facility.</p> <p>This field sets the maximum absolute value that may be submitted for Injection in Real-Time Market Submissions.</p>	Text Box	Numeric Value must be positive	MW	Appendix 1(d)xvii.
The overload Withdrawal capacity of the Facility, if any, expressed in MW [Appendix 1(d)xviii.]	<p>This is the maximum Withdrawal capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS.</p> <p>This represents the maximum physical capacity available for Withdrawal to AEMO under an Emergency Operating State for the SWIS. This value does not need to match the contracted maximum demand for the Facility's connection point(s).</p> <p>If your Facility does not have an overload withdrawal capacity, provide the maximum Withdrawal capacity of the Facility under optimal conditions.</p> <p>This field sets the maximum absolute value that may be submitted for Withdrawal in Real-Time Market Submissions.</p>	Text Box	Numeric Value must be positive	MW	Appendix 1(d)xviii.
The short circuit capability of equipment [Appendix 1(d)xix.]	<p>Details the circuit fault devices and ratings.</p> <p>The circuit fault devices' identity information should match those identified on the Single Line Diagram. (Appendix 1.(b).xxi)</p> <p>Typically, short circuit ratings of primary plants such as circuit breakers are provided at the point of connection and downstream busbar.</p>	File Upload	<p>Data required in kiloamps for each circuit making/breaking device in the generator connection circuit.</p> <p>File format should be .csv with the following fields on each line</p> <ul style="list-style-type: none"> • sequence_number (integer 3), • facility_identity (character 24), 	N/A	Appendix 1(d)xix.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			<ul style="list-style-type: none"> circuit_fault_make_break_device_identity (character 24), fault_make_rating (real 8:5 with exponent), fault_break_rating (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>		
Evidence that the communication and control systems required by section 2.35 are in place and operational [Appendix 1(d)xx.]	This field is redundant, instead participants should have uploaded this information in a document called the "Communication Protocol" in the Facility General Information Change Request under the field of "Details of the operational control over the Facility", refer to Section 3.1 of this Technical Guide.	File Upload	<p>As this field is mandatory in WEMS MPI please attach a document with the following wording:</p> <p>"The Communication Protocol will or has been submitted in the Facility General Information Change Request under the field of Details of the operational control over the Facility."</p>	N/A	Appendix 1(d)xx.
The single line diagram for the Facility, including the locations of transformers, switches, operational and settlement meters [Appendix 1(d)xxi.]	<p>Details the locations of transformers, switches, operational and settlement meters.</p> <p>Same information and format required as for network topology.</p> <p>Any other related data should include generator winding configuration (e.g. connection delta, star, other).</p> <p>Operations data is also required to allow AEMO to model the connecting network and its equipment capabilities.</p> <p>Data required includes:</p> <ul style="list-style-type: none"> circuit ratings in amps calculated as the rating of the lowest rated series connected item of plant in a circuit circuit high and low voltage limits in kilovolts (kV) – determined from the rating of the equipment comprising the circuit components (e.g. voltage and current transformers, surge diverters, transformers, insulation, etc.). 	File Upload	<p>AEMO requires clearly labelled single line diagrams in Adobe Acrobat format (.dxf, .dgn or .pdf files).</p> <p>Diagrams must include the location of transformers, switches, operation and interval meters (which are to be maintained in the Meter Registry)</p> <p>Diagrams must illustrate the following.</p> <p>Circuit rating:</p> <ul style="list-style-type: none"> circuit_identity circuit_rating_amps (real 8:3), circuit_high_kvolt_limit (real 8:3), circuit_low_kvolt_limit (real 8:3) <p>Circuit fault make and break capability:</p> <ul style="list-style-type: none"> circuit_identity (character 24), circuit_fault_make_break_device_identity (character 24), 	N/A	Appendix 1(d)xxi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<ul style="list-style-type: none"> Fault make/ fault break capability for each circuit making/breaking device in a circuit. 		<ul style="list-style-type: none"> fault_make_rating (real 8:5 with exponent), fault_break_rating (real 8:5 with exponent) <p>Diagrams must be kept up to date and revised diagrams with amendments clearly indicated to AEMO in accordance with the WEM Rules.</p>		
The network node or nodes at which the Facility can connect [Appendix 1(d)xxii.]	<p>The network nodes at which the facility can connect (if more than one).</p> <p>If the facility can be connected at more than one connection point, the alternate connection points should be detailed.</p> <p>Note that the primary connection point is entered in the field "Connection Point". For a facility without an alternate connection point, please submit a file with the message "Only 1 connection point for this facility."</p>	File Upload	<p>The name of the network node at which the facility is connected.</p> <p>If facility can connect at more than one node a circuit single line diagram in similar format as the facility single line diagram showing each network connection node and the circuit elements in each connection node.</p> <p>The connection node should include the busbar name, number, and section of that busbar if there is more than one section. The description must be completely unambiguous.</p>	N/A	Appendix 1(d)xxii.
The Transmission Node Identifier [Appendix 1(d)xxiii.]	The Transmission Node Identifier for the Facility.	Text Box	4-digit alphanumeric TNI value. The TNI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(d)xxiii.
The National Meter Identifier (NMI) of each metering point for the Facility, where applicable [Appendix 1(d)xxiv.]	The National Meter Identifier (NMI) of each metering point for the Facility,	Text Box	10-digit NMI value. If multiple NMIs are applicable then use commas to separate, with a single space. The NMI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(d)xxiv.
The Metering Data Agent for the Facility [Appendix 1(d)xxv.]	The Metering Data Agent for the facility. One Meter Data Agent must be selected.	Drop down list	Only one option may be selected. (i.e. WPNTWK)	N/A	Appendix 1(d)xxv.
FCESS & ROCOF Ride-Through Capability					
Frequency Co-optimised Essential System Service Accreditation Parameters [Appendix 1(h).]	<p>Frequency Co-optimised Essential System Service Accreditation Parameters approved by AEMO.</p> <p>If this field is not applicable, please leave field blank.</p>	File Upload	<p>If this field is not applicable, please leave field blank.</p> <p>The template FCESS Accreditation Form is available here and the form must be approved by AEMO prior to submitting in WEMS.</p>	N/A	Appendix 1(h).

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			<p>This must be in excel format and must be the same version AEMO approved.</p> <p>Further information on FCESS Accreditation process is available here.</p>		
RoCoF Ride-Through Capability of the Facility as determined by AEMO [Appendix 1(i).]	<p>RoCoF Ride-Through Capability of the Facility as determined by AEMO.</p> <p>If AEMO has not made a separate determination under paragraph 11.2.6 of the FCESS Accreditation WEM Procedure (link here) then the value of 0.25 Hz over 500ms (RoCoF Safe Limit) must be submitted.</p> <p>Published RoCoF Ride-Through Capability values are also available in the link (here) under the sheet "Current RoCoF Ride-Through Values"</p>	Text Box	<p>Numeric Value must be positive</p> <p>If you intend to apply for a separate determination for RoCoF Ride-Through Capability then information on the process is available here.</p> <p>Facilities with a RoCoF Ride-Through capability value above the RoCoF Ride-Through Cost Recovery Limit, will be not be deemed causers of the RoCoF Control Service and will be excluded from recovery of the costs of the control service.</p>	Hz over 500ms	Appendix 1(i).
WEMDE and Operational Planning Data					
Normally-on Load	<p>A Facility, for which the forecast quantity of Withdrawal is already accounted for in the Forecast Operational Demand.</p> <p>By having Normally-on load <u>ticked</u>, the following applies:</p> <ol style="list-style-type: none"> 1. The Withdrawal quantity for the Facility is already forecasted by AEMO and accounted for in the Forecast Unscheduled Operational Demand; and 2. The Market Participant for this Facility <u>must still</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status) as it does not change a Market Participant rule obligation to submit a market Withdrawal quantity. <p>By having Normally-on load <u>unticked</u>, the following applies:</p>	Tick Box	Ticked = Yes, Unticked = No	N/A	2.1A.2.(m) and the Market Schedule Procedure.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>1. The Withdrawal quantity for the Facility is <u>not</u> forecasted by AEMO and will not be accounted for in the Forecast Unscheduled Operational Demand; and</p> <p>2. The Market Participant for this Facility <u>must</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status).</p> <p>If you are unsure, please leave as unticked for "No". AEMO will review your circumstances and notify you if the value should be a "Normally-on Load"</p>				
Storage Constraints	<p>Where there are limitations on the Injection or Withdrawal capability of a Registered Facility based on the Charge Level of associated Electric Storage Resources.</p> <p>If the Facility does not contain an Electric Storage Resource (battery) it must be left unticked.</p>	Tix Box	Ticked = Yes, Unticked = No	N/A	7.5.10 and 7.5.10A
Inertia	<p>The kinetic energy (at nominal frequency) that is extracted from the rotating mass of a machine coupled to the power system to compensate an imbalance in the system frequency.</p> <p>Alternatively, the 'synthetic inertia' provided by non-rotating machines which can be programmed to provide inertia to the system. An example is inverter-based technology.</p> <p>If the Facility does not provide inertia then enter a value of zero (e.g. wind farms and solar farms typically do not provide inertia).</p> <p>Otherwise, if you Facility does provide inertia, the value should be one of the following:</p> <ul style="list-style-type: none"> • If the Facility has been accredited for RoCoF control service, the value approved by AEMO ; or • If the Facility has not been accredited for RoCoF control service then the inertia value submitted must be reflect the sum of all inertia values in 	Text Box	Numeric	MWs	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 2.4.2(a))

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>the manufacturer's data sheets for all the generation systems behind the Facility's connection point(s); or</p> <ul style="list-style-type: none"> If neither of the above information is available then contact wa.operations@aemo.com.au so AEMO can assist in deriving an appropriate value. 				
Tau Factor	The Facility Speed Factor for a Facility, as determined in accordance with the Frequency Co-optimised Essential System Services Accreditation WEM Procedure; or if it has not undergone the Accreditation process the value must be "999".	Text Box	Numeric	N/A	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 7.2.1)
Unconstrained Forecasts	<p>This determines where the Unconstrained Forecast Source for the Primary Dispatch Interval or Primary Pre-Dispatch Intervals will come from:</p> <p>AEMO recommends the following forecast types for the respective Facility Classes:</p> <ul style="list-style-type: none"> Scheduled Facility, Demand Side Programme and Interruptible Load must specify RTMS Semi-Scheduled Facility should specify SCADA. Non-Scheduled Facility should specify Persistence <p>If you operate a Semi-Scheduled Facility or Non-Scheduled Facility and you would prefer to submit a different forecast type other than that outlined above, you must email wa.operations@aemo.com.au to have AEMO assess the suitability of an alternate forecast type.</p>	Drop Down	<p>Can only select one:</p> <ul style="list-style-type: none"> RTMS SCADA PERSISTENCE 	N/A	2.1A.2.(m) and the Market Schedules Procedure.

4.5 Semi-Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Semi-Scheduled Facility					
Facility Name	This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i
The total nameplate capacity of the Facility's Energy Producing System, expressed in MW [Appendix 1(c)i.]	Nameplate capacity of facility, as per the output subject to ratings of any primary plant or equipment. For synchronous generators this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters. Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves.	Text Box	Numeric	MW	Appendix 1(c)i.
The System Size Appendix 1(c)iii.]	The MW value in accordance with the glossary definition in WEM Rules for System Size.	Text Box	Numeric	MW	Appendix 1(c)iii.
Is the Facility a Small Aggregation [Appendix 1(c)iv.]	Denotes whether the Facility meets the glossary definition in the WEM Rules for Small Aggregation.	Tick Box	Yes or No	N/A	Appendix 1(c)iv.
The maximum sent out capacity of the Facility under optimal conditions, expressed in MW [Appendix 1(c)v.]	This is the maximum sent-out capacity at optimal operating conditions for the Facility. This represents the maximum physical capacity available for Injection to AEMO under normal operating conditions for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s).	Text Box	Numeric	MW	Appendix 1(c)v.
The maximum Withdrawal capacity of the Facility under optimal conditions expressed in MW [Appendix 1(c)vi.]	This is the maximum capacity to withdraw from the SWIS at the connection point(s) for the Facility. This represents the maximum physical capacity to Withdraw for the Facility and any of its co-located loads under normal operating conditions for the SWIS. This value does not need to match the contracted maximum demand for the Facility's connection point(s).	Text Box	Numeric	MW	Appendix 1(c)vi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The dependence of sent out capacity on temperature at the location of the Facility [Appendix 1(c)vii.]	<p>Sent out capacity as a function of temperature at the location of the facility.</p> <p>Please note the temperature dependence data must be provided to at least the maximum sent out capacity of the Facility under optimal conditions.</p> <p>A separate relationship for each fuel type is required expressed in terms of generated MW.</p> <p>Maximum sent out capacity (MW) details for each 0.1C interval from 0°C to 45°C, or higher if specified by the Network Operator based on physical location.</p>	File Upload	<p>File format to be .csv with the following fields on each line:</p> <ul style="list-style-type: none"> • facility_identity (character 24), • fuel_type (character 1) – L N, followed by the following data pairs for each temperature breakpoint: <ul style="list-style-type: none"> • temperature (real 3:1), • facility_capability (real 6:3) <p>Note that the first row must be a header row, containing the names of the four columns respectively; facility_identity, fuel_type, temperature, facility_capability.</p> <p>File template can be found on the following link (here)</p> <p>OR</p> <p>If your Facility is not temperature dependent, then attach a file with comment “Facility is not temperature dependent”.</p>	MW and °C,	Appendix 1(c)vii.
Temperature Location	<p>One of the following methods must be chosen:</p> <ul style="list-style-type: none"> • 41 °C • SCADA • BOM <p>If your Facility is not temperature dependent or comprised of Intermittent Generation Systems only, then a value of 41 °C must be submitted.</p>	Drop Down	Can only select one options.	N/A	Appendix 1(c)viii.
Temperature Location	Location of BOM or SCADA temperature station	Drop Down	<p>For SCADA one of the following:</p> <ul style="list-style-type: none"> • CKB AMBIENT C • KMP AMBIENT C • MGA AMBIENT C • PJR AMBIENT C 	N/A	Appendix 1(c)viii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			For BOM one of the following: Albany Airport, Badgingarra, Bickley, Bunbury, Collie East, Dwellingup, Garden Island HSF, Geraldton Airport 8351, Hopetoun North, Jandakot Aero, Kalgoorlie-Boulder Airport, Mandurah, Pearce RAAF, Perth Airport, Perth Metro, Rottnest Island, Southern Cross Airfield, Swanbourne.		
Is the Facility a Fast Start Facility [Appendix 1(c)xvi.]	Denotes whether the Facility meets the definition of Fast Start Facility under the WEM Rules Glossary.	Tick Box	Yes or No	N/A	Appendix 1(c)xvi.
Minimum Synchronisation Time (Cold) [Appendix 1(c)xvii.1.]	<p>Cold synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “cold” state. “Cold” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Cold) has subsequently passed.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 5 and 6.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.1.
Elapsed Synchronisation Time (Cold) [Appendix 1(c)xvii.1.]	<p>Number of minutes elapsed for Cold Sync time.</p> <p>This is the time relative to the Facility shutdown, after which the Facility will be considered in the “cold” state for synchronisation purposes.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 5 and 6.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.1.
Minimum Synchronisation Time (Warm) [Appendix 1(c)xvii.2.]	<p>Warm synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “warm” state. “Warm” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Warm) has subsequently passed.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.2.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 3 and 4.</p> <p>If this field is not applicable, please leave field as zero.</p>				
Elapsed Synchronisation Time (Warm) [Appendix 1(c)xvii.2.]	<p>Number of minutes elapsed for Warm Sync time.</p> <p>This is the time related to the Facility shutdown, after which the Facility will be considered in the “warm” state for synchronisation purposes, until it transitions to the “cold” state.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 3 and 4.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.2.
Minimum Synchronisation Time (Hot) [Appendix 1(c)xvii.3.]	<p>Hot synchronisation time. The minimum time to synchronise (if applicable for the Facility) and be available for dispatch when the Facility is in a “hot” state. “Hot” state is defined by when the Facility has been shutdown after operating and the Elapsed Synchronisation Time (Hot) has subsequently passed.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 1 and 2.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.3.
Elapsed Synchronisation Time (Hot) [Appendix 1(c)xvii.3.]	<p>Number of minutes elapsed for Hot Sync time.</p> <p>This is the time related to the Facility shutdown, after which the Facility will be considered in the “hot” state for synchronisation purposes, until it transitions to the “warm” state.</p> <p>Refer to Appendix 1 (section 8.1 and 8.2) of this guide for more details., specifically to Scenario 1 and 2.</p> <p>N.b. This should typically be zero, as Facilities are generally considered “hot” immediately after shutdown</p>	Input Stepper	<p>Numeric and in the following format:</p> <p>Days, Hours, Minutes, Seconds</p>	Refer to Format	Appendix 1(c)xvii.3.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>after operation, and any “deadtime” before being able to restart is covered by the Minimum Restart Time property.</p> <p>If this field is not applicable, please leave field as zero.</p>				
The sent-out capacity when the Facility is operating at minimum stable loading level, expressed in MW [Appendix 1(c)xix.]	<p>The minimum stable Injection level of the Facility, expressed in MW for primary Non-Liquid Fuel. It is the technical minimum Injection level at which the Facility can remain in stable operation. This is a level that the Facility would not normally be dispatched to (see Minimum Dispatchable Load Level), but may be directed to operate at by AEMO if required (e.g. under emergency conditions).</p> <p>Note that this is generally equal to Minimum Generator Capacity and may be equal or lower than the Minimum Dispatchable Generation. The value specified must be applicable for an ambient temperature of 15 °C.</p>	Text Box	Numeric	MW	Appendix 1(c)xix.
The sent-out capacity when the Facility is operating at the minimum dispatchable loading level, expressed in MW [Appendix 1(c)xx.]	<p>The normal minimum Injection for the Facility after which it can be dispatched by AEMO, expressed in MW for primary Non-Liquid Fuel. Note that this is typically equal to Minimum Generator Capacity, however the dispatchable generation could be set higher than the Minimum Stable Load Level. The value specified must be applicable for an ambient temperature of 15 °C.</p>	Text Box	Numeric	MW	Appendix 1(c)xx.
The minimum physical response time before the Facility can begin to respond to a Dispatch Instruction, when the Facility is running. [Appendix 1(c)xxi.]	<p>The minimum time before a Facility can respond after receiving an Electronic Dispatch Instruction, when the Facility is running.</p> <p>Refer to Appendix 2 of this guide for more details, where the $t_2 - t_1$.</p> <p>N.b. The Minimum Physical Responses Time to a Dispatch Instruction should be less than a minute. If the time is longer please include an explanation of why electronic response is greater than a minute in the “Further supporting documentation” section of the change request or send an email to wa.operations@aemo.com.au</p>	Text Box	Days, Hours, Minutes, Seconds	Refer to Format	Appendix 1(c)xxi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Any output range between minimum dispatchable loading level and nameplate capacity in which the Facility is incapable of stable or safe operation [Appendix 1(c)xxii]	Any output ranges between minimum dispatchable loading level and nameplate capacity in which the facility is incapable of stable or safe operation.	File Upload	<p>File format to be .csv with the following fields on each line:</p> <ul style="list-style-type: none"> sequence_number (integer 3), facility_identity (character 24) fuel_type (character 24) <p>Followed by the following data pairs for each disallowed region:</p> <ul style="list-style-type: none"> lower_disallowed_load (real 6:1), upper_disallowed_load (real 6:1), <p>The last pair determined by carriage return.</p> <p>A separate set of data is required for each fuel type.</p> <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	MW	Appendix 1(c)xxii
The minimum load at the connection point of the Facility that will automatically trip off if the Facility fails, expressed in MW [Appendix 1(c)xxiii.]	<p>Refers to parts of the generator unit/station service load which are automatically disconnected by the Participant.</p> <p>Includes unit auxiliary load which is supplied directly from the generator via the unit transformer and station load supplied from the network if disconnected automatically when the generator trips. Participants may need to know how to handle where trippable load is dependent on the unit generated output load.</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW	Appendix 1(c)xxiii.
Sub-transient, transient and steady state impedances (positive, negative and zero sequence) for the Facility [Appendix 1(c)xxiv.]	<p>Sub-transient, transient and steady state impedances (positive, negative and zero sequence) for the facility and any other related data required.</p> <p>Positive Impedance for Element</p> <p>While included, AEMO will generally get this information via access connection information through Generator Performance Standard (GPS) submissions, and therefore should align with the GPS process.</p>	File Upload	<p>Electrical model data - file format to be .csv with the each line in the file having the fields indicated below:</p> <ul style="list-style-type: none"> Item_sequence_number (Integer 3), facility_identity (character 24), resistance (real 8:5 with exponent), positive_sequence_steadystate_reactance (real 8:5 with exponent), positive_sequence_steadystate_susceptance (real 8:5 with exponent), 	N/A	Appendix 1(c)xxiv.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			<ul style="list-style-type: none"> negative_sequence_reactance(real 8:5 with exponent), zero_sequence_reactance (real 8:5 with exponent), sub_transient_reactance (real 8:5 with exponent), transient_reactance (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>		
Standing Maximum Upwards Ramp Rate [Appendix 1(c)xxv.]	Normal ramp up (generated basis). Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(c)xxv.
Standing Maximum Downwards Ramp Rate [Appendix 1(c)xxvi.]	Normal Ramp down (generated basis) Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(c)xxvi.
Emergency upwards ramp rate [Appendix 1(c)xxvii.]	Emergency Ramp up (generated basis), If Emergency Ramp up is not applicable, provide the normal ramp up (generated basis) Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(c)xxvii.
Emergency downwards ramp rate [Appendix 1(c)xxviii.]	Emergency Ramp down (generated basis) If Emergency Ramp down is not applicable, provide the normal ramp down (generated basis) Where applicable, the ramp rate should align with the Facility's Generator Performance Standard (GPS).	Text Box	Numeric Value must be positive	MW/min	Appendix 1(c)xxviii.
The overload Injection capacity of the Facility, if any, expressed in MW [Appendix 1(c)xxix.]	This is the maximum sent-out capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS. This represents the maximum physical capacity available for Injection to AEMO under an Emergency Operating	Text Box	Numeric Value must be positive	MW	Appendix 1(c)xxix.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>State for the SWIS. This value does not need to match the declared sent-out capacity for the Facility's connection point(s).</p> <p>If your Facility does not have an overload Injection capacity, provide the maximum sent-out capacity at optimal operating conditions for the Facility.</p> <p>This field sets the maximum absolute value that may be submitted for Injection in Real-Time Market Submissions.</p>				
The overload Withdrawal capacity of the Facility, if any, expressed in MW [Appendix 1(c)xxx.]	<p>This is the maximum Withdrawal capacity at optimal operating conditions for the Facility, that AEMO may use during an Emergency Operating State in the SWIS.</p> <p>This represents the maximum physical capacity available for Withdrawal to AEMO under an Emergency Operating State for the SWIS. This value does not need to match the contracted maximum demand for the Facility's connection point(s).</p> <p>If your Facility does not have an overload withdrawal capacity, provide the maximum Withdrawal capacity of the Facility under optimal conditions.</p> <p>This field sets the maximum absolute value that may be submitted for Withdrawal in Real-Time Market Submissions.</p>	Text Box	Numeric Value must be positive	MW	Appendix 1(c)xxx.
The short circuit capability of Facility equipment [Appendix 1(c)xxxi.]	<p>Details the circuit fault devices and ratings.</p> <p>The circuit fault devices identity information should match those identified on the Single Line Diagram (Appendix 1.(b).xxi)</p> <p>Typically, short circuit ratings of primary plant such as circuit breakers are provided at the point of connection and downstream busbar.</p>	File Upload	<p>Data required in kiloamps for each circuit making/breaking device in the generator connection circuit.</p> <p>File format should be .csv with the following fields on each line</p> <ul style="list-style-type: none"> • sequence_number (integer 3), • facility_identity (character 24), • circuit_fault_make_break_device_identity (character 24), • fault_make_rating (real 8:5 with exponent), • fault_break_rating (real 8:5 with exponent) 	N/A	Appendix 1(c)xxxi.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
			The first line is to indicate the field names as above.		
Evidence that the communication and control systems required by section 2.35 are in place and operational [Appendix 1(c)xxxii]	This field is redundant, instead participants should have uploaded this information in a document called the "Communication Protocol" in the Facility General Information Change Request under the field of "Details of the operational control over the Facility", refer to Section 3.1 of this Technical Guide.	File Upload	As this field is mandatory in WEMS MPI please attach a document with the following wording: "The Communication Protocol will or has been submitted in the Facility General Information Change Request under the field of Details of the operational control over the Facility."	N/A	Appendix 1(c)xxxii
The single line diagram for the Facility, including the locations of transformers, switches, operational and settlement meters [Appendix 1(c)xxxiii.]	<p>Details the locations of transformers, switches, operational and settlement meters.</p> <p>Same information and format required as for network topology.</p> <p>Any other related data should include generator winding configuration (e.g. connection delta, star, other).</p> <p>Operations data is also required to allow AEMO to model the connecting network and its equipment capabilities.</p> <p>Data required includes:</p> <ul style="list-style-type: none"> • circuit ratings in amps calculated as the rating of the lowest rated series connected item of plant in a circuit • circuit high and low voltage limits in kilovolts (kV) – determined from the rating of the equipment comprising the circuit components (e.g. voltage and current transformers, surge diverters, transformers, insulation, etc.). • Fault make/fault break capability for each circuit making/breaking device in a circuit. 	File Upload	<p>AEMO requires clearly labelled single line diagrams in Adobe Acrobat format (.dxf, .dgn or .pdf files).</p> <p>Diagrams must include the location of transformers, switches, operation and interval meters (which are to be maintained in the Meter Registry)</p> <p>Diagrams must illustrate the following.</p> <p>Circuit rating:</p> <ul style="list-style-type: none"> • circuit_identity • circuit_rating_amps (real 8:3), • circuit_high_kvolt_limit (real 8:3), • circuit_low_kvolt_limit (real 8:3) <p>Circuit fault make and break capability:</p> <ul style="list-style-type: none"> • circuit_identity (character 24), • circuit_fault_make_break_device_identity (character 24), • fault_make_rating (real 8:5 with exponent), • fault_break_rating (real 8:5 with exponent) <p>Diagrams must be kept up to date and revised diagrams with amendments clearly indicated to AEMO in accordance with the WEM Rules.</p>	N/A	Appendix 1(c)xxxiii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The network node or nodes at which the Facility can connect [Appendix 1(c)xxxiv.]	<p>The network nodes at which the facility can connect (if more than one).</p> <p>If the facility can be connected at more than one connection point, the alternate connection points should be detailed.</p> <p>Note that the primary connection point is entered in the field "Connection Point". For a facility without an alternate connection point, please submit a file with the message "Only 1 connection point for this facility."</p>	File Upload	<p>The name of the network node at which the facility is connected.</p> <p>If the facility can connect at more than one node a circuit single line diagram in similar format as the facility single line diagram showing each network connection node and the circuit elements in each connection node.</p> <p>The connection node should include the busbar name, number and section of that busbar if there is more than one section. The description must be completely unambiguous.</p>	N/A	Appendix 1(c)xxxiv.
The Transmission Node Identifier [Appendix 1(c)xxxv.]	The Transmission Node Identifier for the Facility.	Text Box	4-digit alphanumeric TNI value. The TNI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(c)xxxv.
National Meter Identifier (NMI) of each metering point for the Facility, where applicable [Appendix 1(c)xxxvi]	The National Meter Identifier (NMI) of each metering point for the Facility..	Text Box	10-digit NMI value. If multiple NMIs are applicable then use commas to separate, with a single space. The NMI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(c)xxxvi
The Metering Data Agent for the Facility [Appendix 1(c)xxxvii.]	The Metering Data Agent for the facility. One Meter Data Agent must be selected.	Drop down list	Only one option may be selected. (i.e. WPNTWK)	N/A	Appendix 1(c)xxxvii.
FCESS & ROCOF Ride-Through Capability					
Frequency Co-optimised Essential System Service Accreditation Parameters [Appendix 1(h).]	<p>Frequency Co-optimised Essential System Service Accreditation Parameters approved by AEMO.</p> <p>If this field is not applicable, please leave the field blank</p>	File Upload	<p>If this field is not applicable, please leave field blank.</p> <p>The template FCESS Accreditation Form is available here and the form must be approved by AEMO prior to submitting in WEMS.</p> <p>This must be in excel format and must be the same version AEMO approved.</p> <p>Further information on FCESS Accreditation process is available here.</p>	N/A	Appendix 1(h).

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
RoCoF Ride-Through Capability of the Facility as determined by AEMO [Appendix 1(i).]	<p>RoCoF Ride-Through Capability of the Facility as determined by AEMO.</p> <p>If AEMO has not made a separate determination under paragraph 11.2.6 of the FCESS Accreditation WEM Procedure (link here) then the value of 0.25 Hz over 500ms (RoCoF Safe Limit) must be submitted.</p> <p>Published RoCoF Ride-Through Capability values are also available in the link (here) under the sheet "Current RoCoF Ride-Through Values"</p>	Text Box	<p>Numeric Value must be positive</p> <p>If you intend to apply for a separate determination for RoCoF Ride-Through Capability then information on the process is available here.</p> <p>Facilities with a RoCoF Ride-Through capability value above the RoCoF Ride-Through Cost Recovery Limit, will not be deemed causers of the RoCoF Control Service and will be excluded from recovery of the costs of the control service.</p>	Hz over 500ms	Appendix 1(i).
WEMDE and Operational Planning Data					
Normally-on Load	<p>A Facility, for which the forecast quantity of Withdrawal is already accounted for in the Forecast Operational Demand.</p> <p>By having normally-on load <u>ticked</u>, the following applies:</p> <ol style="list-style-type: none"> 1. The Withdrawal quantity for the Facility is already forecasted by AEMO and accounted for in the Forecast Unscheduled Operational Demand; and 2. The Market Participant for this Facility <u>must still</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status) as it does not change a Market Participant rule obligation to submit a market Withdrawal quantity. <p>By having normally-on load <u>unticked</u>, the following applies:</p> <ol style="list-style-type: none"> 1. The Withdrawal quantity for the Facility is <u>not</u> forecasted by AEMO and will not be accounted for in the Forecast Unscheduled Operational Demand; and 2. The Market Participant for this Facility <u>must</u> bid their Withdrawal quantity in their RTMS (exceptions may apply for Facilities with Intermittent Load status). 	Tick Box	Ticked = Yes, Unticked = No	N/A	2.1A.2.(m) and the Market Schedule Procedure.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	If you are unsure, please leave as unticked for “No”. AEMO will review your circumstances and notify you if the value should be a “Normally-on Load”				
Storage Constraints	Where there are limitations on the Injection or Withdrawal capability of a Registered Facility based on the Charge Level of associated Electric Storage Resources. If the Facility does not contain an Electric Storage Resource (battery) it must be left unticked.	Tix Box	Ticked = Yes, Unticked = No	N/A	7.5.10 and 7.5.10A
Inertia	The kinetic energy (at nominal frequency) that is extracted from the rotating mass of a machine coupled to the power system to compensate for an imbalance in the system frequency. Alternatively, the ‘synthetic inertia’ provided by non-rotating machines which can be programmed to provide inertia to the system. An example is inverter-based technology. If the Facility does not provide inertia then enter a value of zero (e.g. wind farms and solar farms typically do not provide inertia). Otherwise, if you Facility does provide inertia, the value should be one of the following: <ul style="list-style-type: none"> • If the Facility has been accredited for RoCoF control service, the value approved by AEMO; or • If the Facility has not been accredited for RoCoF control service then the inertia value submitted must be reflect the sum of all inertia values in the manufacturer’s data sheets for all the generation systems behind the Facility’s connection point(s); or If neither of the above information is available then to contact wa.operations@aemo.com.au so AEMO can assist you in deriving an appropriate value.	Text Box	Numeric	MWs	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 2.4.2(a))

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Tau Factor	The Facility Speed Factor for a Facility, as determined in accordance with the Frequency Co-optimised Essential System Services Accreditation WEM Procedure; or if it has not undergone the Accreditation process the value must be "999".	Text Box	Numeric	N/A	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 7.2.1)
Unconstrained Forecasts	<p>This determines where the Unconstrained Forecast Source for the Primary Dispatch Interval or Primary Pre-Dispatch Intervals will come from:</p> <p>AEMO recommends the following forecast types for the respective Facility Classes:</p> <ul style="list-style-type: none"> Scheduled Facility, Demand Side Programme and Interruptible Load must specify RTMS Semi-Scheduled Facility should specify SCADA. Non-Scheduled Facility should specify Persistence <p>If you operate a Semi-Scheduled Facility or Non-Scheduled Facility and you would prefer to submit a forecast type other than that outlined above, you must email wa.operations@aemo.com.au to have AEMO assess the suitability of an alternate forecast type.</p>	Drop Down	<p>Can only select one:</p> <ul style="list-style-type: none"> RTMS SCADA <p>PERSISTENCE</p>	N/A	2.1A.2.(m) and the Market Schedules Procedure.
If the Facility has an Electric Storage Resource, the normal ramp rate upwards whilst withdrawing, expressed as MW/min	<p>Normal ramp up (change towards injection) on as generated basis</p> <p>If your Facility does not have an Electric Storage Resource (battery) leave this field blank.</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW/min	2.1A.2.(m)
If the Facility has an Electric Storage Resource, the normal ramp rate downwards whilst withdrawing, expressed as MW/min	<p>Normal ramp down (change towards withdrawal) on as generated basis</p> <p>If your Facility does not have an Electric Storage Resource (battery) leave this field blank.</p>	Text Box	<p>Numeric</p> <p>Value must be positive</p>	MW/min	2.1A.2.(m)
If the Facility has an Electric Storage Resource, the emergency ramp rate	Emergency Ramp up (change towards injection)	Text Box	Numeric	MW/min	2.1A.2.(m)

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
upwards whilst withdrawing, expressed as MW/min	If Emergency Ramp up is not applicable, provide the normal ramp up (change towards injection) on as generated basis. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.		Value must be positive		
If the Facility has an Electric Storage Resource, the emergency ramp rate downwards whilst withdrawing, expressed as MW/min	Emergency Ramp down (change towards withdrawal) If Emergency Ramp down is not applicable, provide the normal ramp down (change towards withdrawal) on as generated basis. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric Value must be positive	MW/min	2.1A.2.(m)
If the Facility has an Electric Storage Resource, the Minimum State of Charge Capacity, expressed as a percentage (%)	State of Charge (%) should be expressed relative to the total usable (dispatchable) storage quantity of the Facility, at optimal conditions, where the usable quantity may be lower than the Facility's nominal capacity. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric Value must be positive	%	2.1A.2.(m)
If the Facility has an Electric Storage Resource, the Facility's Electric Storage Resource's total MWh capacity	The usable (dispatchable) storage quantity of the Electric Storage Resource, where the usable quantity may be lower than the Facility's nominal capacity. If your Facility does not have an Electric Storage Resource (battery) leave this field blank.	Text Box	Numeric	MWh	2.1A.2.(m)

4.6 Non-Dispatchable Load

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Non-Dispatchable Load					
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Intermittent Load Status	Specify whether the facility is an Intermittent Load. <ul style="list-style-type: none"> Non-Dispatchable Load with Intermittent Load status under clause 1.48.2 ("Grandfathered IML") Non-Dispatchable Load with Intermittent Load status under clause 2.30B.2 ("New IML"); or Non-Dispatchable Load without Intermittent Load 	Drop down	Only one option may be selected	N/A	System Requirement
Intermittent Load Standing Data					
The identity of the metering points measuring the Intermittent Loads [Appendix 1(g)i.]	The National Meter Identifier (NMI) of each metering point measuring the Intermittent Loads.	Text Box	10-digit NMI value. If multiple NMIs are applicable then use commas to separate, with a single space	N/A	[Appendix 1(g)i.]
For all metering points identified in Appendix 1(g)i, the aggregated maximum allowed level of Intermittent Load, in MWh per Trading Interval [Appendix 1(g)ii.]	The aggregated maximum allowed level of Intermittent Load behind the metering point(s), expressed in MWh per Trading Interval.	Text Box	Numeric	MWh/Trading Interval	[Appendix 1(g)ii.]
For all metering points identified in Appendix 1(g)i, the aggregated maximum level of net consumption at that meter which is not separately metered, and which is not Intermittent Load, in MWh per Trading Interval [Appendix 1(g)iii.]	The aggregated maximum level of net consumption at that meter which is not separately metered, and which is not Intermittent Load, expressed in MWh per Trading Interval.	Text Box	Numeric	MWh/Trading Interval	[Appendix 1(g)iii.]
For all metering points identified in Appendix 1(g)i, the separately metered Energy Producing Systems and Loads behind that meter which are not to be included in the definition of that Intermittent Load [Appendix 1(g)iv.]	For all metering points identified in Appendix 1(g)i, a single line diagram for the Facility, that identifies any separately revenue(tariff) metered Energy Producing Systems and Loads behind that meter which are not to be included in the definition of that Intermittent Load. If there are not separately revenue(tariff) metered Energy Producing Systems and Loads behind the metering points identified in Appendix 1(g)i then this field must be left blank.	File Upload	A Word document or pdf.	N/A	Appendix 1(g)iv.

Where the Load or part of the Load is and continues to be deemed to be an Intermittent Load under clause 1.48.2, provide the following: (Grandfathered IML only)

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Anticipated reduction, measured in MW, in the maximum capacity described in clause 2.30B.3(a) when the ambient temperature is 45 degrees Celsius [MR2.30B.3.(b)i.]	Anticipated reduction in the maximum capacity that the generating system can be guaranteed to have available to supply Intermittent Load when the ambient temperature is 45°C.	Text Box	Numeric	MW	2.30B.3.(b)i.
The method to be used for determining the ambient temperature at the site of the Energy Producing System referred to in clause 2.30B.2(a) for the purpose of determining Intermittent Load Refunds. (where if no method is specified, a constant temperature of 41 degrees Celsius will be assumed) [MR2.30B.3.(b)ii.]	<p>One of the following methods must be chosen:</p> <ul style="list-style-type: none"> • 41 °C • SCADA • BOM <p>If the Energy Producing System is not temperature dependent, is comprised of Intermittent Generations Systems; or does not have SCADA nor BOM temperature measurements, then a value of 41 °C must be submitted.</p>	Drop Down	Can only select one option	N/A	2.30B.3.(b)ii.
Temperature Location	Location of BOM or SCADA temperature station	Drop Down	<p>Can only select one options.</p> <p>For SCADA one of the following:</p> <ul style="list-style-type: none"> • CKB AMBIENT C • KMP AMBIENT C • MGA AMBIENT C • PJR AMBIENT C <p>For BOM one of the following: Albany Airport, Badgingarra, Bickley, Bunbury, Collie East, Dwellingup, Garden Island HSF, Geraldton Airport 8351, Hopetoun North, Jandakot Aero, Kalgoorlie-Boulder Airport, Mandurah, Pearce RAAF, Perth Airport, Perth Metro, Rottneest Island, Southern Cross Airfield, Swanbourne.</p>	N/A	2.30B.3.(b)ii.
Nominations of capacity requirements for Intermittent Loads, deemed to be Intermittent Loads under clause 1.48.2, expressed in MW, where the nominated quantity cannot exceed the greater of value defined in clause 4.28.8 (c)i. and 4.28.8 (c)ii. [4.28.8 (c).]	Nominations of capacity requirements for “grandfathered” Intermittent Loads, expressed in MW, where the nominated quantity cannot exceed the greater of value defined in clause 4.28.8 (c)i. and 4.28.8 (c)ii.	Text Box	Numeric	MW	4.28.8 (c).

Intermittent Load Information to be provided under clause 2.30B.3

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The maximum capacity in MW, excluding capacity for which Capacity Credits are held, that the Energy Producing System referred to in clause 2.30B.2(a) can be guaranteed to have available to supply Intermittent Load, when it is operated normally at an ambient temperature of 41 degrees Celsius [MR 2.30B.3.(a).]	As per the description in the data field.	Text Box	Numeric	MW	2.30B.3.(a)
Details of primary and any alternative fuels, including details and evidence of both firm and non-firm fuel supplies and the factors that determine restrictions on fuel availability that could prevent the Energy Producing System referred to in clause 2.30B.2(a) from operating at its full capacity [MR 2.30B.3(c).]	As per the description in the data field.	File Upload	A Word document or pdf.	N/A	2.30B.3(c).
Single line diagram which includes details of the Loads and Energy Producing Systems contained within the Facility and any other information AEMO requires to determine whether the Load meets the conditions specified in clause 2.30B2 [MR 2.30B.3(d).]	As per the description in the data field.	File Upload	A Word document or pdf.	N/A	2.30B.3(d).
The Nominated Excess Capacity [MR 2.30B.3(e).]	In respect of a Facility containing an Intermittent Load, the maximum quantity of Injection (in MW) that the Market Participant intends the Facility to make in any Dispatch Interval, which must not be exceeded in more than 120 Dispatch Intervals within any continuous 12-month period.	Text Box	Numeric	MW	2.30B.3(e).
Declared Sent Out Capacity and any other information AEMO requires to determine the System Size of the Facility [MR 2.30B.3(f).]	The declared sent-out capacity is s the maximum amount of power that the generator has contracted with the Network Operator to export to the network.	File Upload	A Word document or pdf.	MW	2.30B.3(f).

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Optional - Information regarding protection schemes at the Facility, including whether the Facility is configured to automatically adjust load or generation where a Contingency Event, or an event behind the relevant connection point, affects the Energy Producing System, and evidence to support that configuration as required in the WEM Procedure referred to in clause 2.29.4N [MR 2.30B.3(g).]	Where a protection scheme has been implemented downstream for an Energy Producing System to manage its net injection/withdrawal, details of how the scheme operates and for which specific conditions are required. Details of contingencies triggering the scheme, operation times, and impact on net output should be specified.	File Upload	A document, e.g. Word, Excel or pdf. Including relevant Single Line Diagrams and protection scheme settings.	N/A	2.30B.3(g).
If applicable, I have provided AEMO the instantaneous output or consumption of the Energy Producing System referred to in clause 2.30B.2(a), with separate measurements for each separate electricity producing unit in the Energy Producing System [MR 2.30B.3(h).]	As per the description in the data field.	Tick box	Ticked = Yes, Unticked = No	N/A	2.30B.3(h).
Contract Maximum Demand associated with the Facility [MR 2.30B.3(j).]	For a contracted point, means the maximum energy (MW) at which a user is permitted to transfer electricity from the network.	Text Box	Numeric	MW	2.30B.3(j).
FCESS & ROCOF Ride-Through Capability					
RoCoF Ride-Through Capability of the Facility as determined by AEMO [Appendix 1(i).]	RoCoF Ride-Through Capability of the Facility as determined by AEMO. If AEMO has not made a separate determination under paragraph 11.2.6 of the FCESS Accreditation WEM Procedure (link here) then the value of 0.25 Hz over 500ms (RoCoF Safe Limit) must be submitted. Published RoCoF Ride-Through Capability values are also available in the link (here) under the sheet "Current RoCoF Ride-Through Values"	Text Box	Numeric Value must be positive If you intend to apply for a separate determination for RoCoF Ride-Through Capability then information on the process is available here . Facilities with a RoCoF Ride-Through capability value above the RoCoF Ride-Through Cost Recovery Limit, will not be deemed causers of the RoCoF Control Service and will be excluded from recovery of the costs of the control service.	HzHz over 500ms	Appendix 1(i).

4.7 Interruptible Load

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Interruptible Load					
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i.
Evidence that the communication and control systems required by section 2.35 are in place and operational [Appendix 1(e)i.]	This field is redundant and instead, participants should have uploaded this information in a document called the "Communication Protocol" in the Facility General Information Change Request under the field of "Details of the operational control over the Facility", refer to Section 3.1 of this Technical Guide.	File Upload	As this field is mandatory in WEMS MPI please attach a document with the following wording: "The Communication Protocol will or has been submitted in the Facility General Information Change Request under the field of Details of the operational control over the Facility."	N/A	Appendix 1(e)i.
Details of the real-time telemetry capabilities [Appendix 1(e)ii.]	Details of telemetry system, including band width, polling frequency etc.	File Upload	A word document or pdf	N/A	Appendix 1(e)ii.
The short circuit capability of Facility equipment [Appendix 1(e)iii.]	<p>Details the circuit fault devices and ratings.</p> <p>The circuit fault devices' identity information should match those identified on the Single Line Diagram (Appendix 1.(b).xxi)</p> <p>Typically, short circuit ratings of primary plants such as circuit breakers are provided at the point of connection and downstream busbar.</p>	File Upload	<p>Data required in kiloamps for each circuit making/breaking device in the generator connection circuit.</p> <p>File format should be .csv with the following fields on each line</p> <ul style="list-style-type: none"> • sequence_number (integer 3), • facility_identity (character 24), • circuit_fault_make_break_device_identity (character 24), • fault_make_rating (real 8:5 with exponent), • fault_break_rating (real 8:5 with exponent) <p>The first line is to indicate the field names as above.</p> <p>File template can be found on the following link (here)</p>	N/A	Appendix 1(e)iii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The single line diagram for the Facility, including the locations of transformers, switches, operational and settlement meters, if applicable [Appendix 1(e)iv.]	<p>Details the locations of transformers, switches, operational and settlement meters.</p> <p>Same information and format required as for network topology.</p> <p>Any other related data should include generator winding configuration (e.g. connection delta, star, other).</p> <p>Operations data is also required to allow AEMO to model the connecting network and its equipment capabilities.</p> <p>Data required includes:</p> <ul style="list-style-type: none"> • circuit ratings in amps calculated as the rating of the lowest rated series connected item of plant in a circuit • circuit high and low voltage limits in kilovolts (kvolt) – determined from the rating of the equipment comprising the circuit components (e.g. voltage and current transformers, surge diverters, transformers, insulation, etc.). • Fault make/ fault break capability for each circuit making/breaking device in a circuit. 	File Upload	<p>AEMO requires clearly labelled single line diagrams in Adobe Acrobat format (.dxf, .dgn or .pdf files).</p> <p>Diagrams must include the location of transformers, switches, operation and interval meters (which are to be maintained in the Meter Registry)</p> <p>Diagrams must illustrate the following.</p> <p>Circuit rating:</p> <ul style="list-style-type: none"> • circuit_identity • circuit_rating_amps (real 8:3), • circuit_high_kvolt_limit (real 8:3), • circuit_low_kvolt_limit (real 8:3) <p>Circuit fault make and break capability:</p> <ul style="list-style-type: none"> • circuit_identity (character 24), • circuit_fault_make_break_device_identity (character 24), • fault_make_rating (real 8:5 with exponent), • fault_break_rating (real 8:5 with exponent) <p>Diagrams must be kept up to date and revised diagrams with amendments clearly indicated to AEMO in accordance with the WEM Rules.</p>	N/A	Appendix 1(e)iv.
The network nodes at which the Associated Loads of the Facility can connect [Appendix 1(e)v.]	<p>The network nodes at which the facility can connect (if more than one).</p> <p>If the facility can be connected at more than one connection point, the alternate connection points should be detailed.</p> <p>Note that the primary connection point is entered in the field “Connection Point”. For a facility without an alternate connection point, please submit a file with the message “Only 1 connection point for this facility.”</p>	File Upload	<p>The name of the network node at which the facility is connected.</p> <p>If facility can connect at more than one node a circuit single line diagram in similar format as the facility single line diagram showing each network connection node and the circuit elements in each connection node.</p> <p>The connection node should include the busbar name, number, and section of that busbar if there is more than one section. The description must be completely unambiguous.</p>	N/A	Appendix 1(e)v.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The Transmission Node Identifier [Appendix 1(e)vi.]	The Transmission Node Identifier for the Facility	Text Box	4-digit alphanumeric TNI value. The TNI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1(e)vi.
WEMDE & Operational Planning Data					
Normally-on Load	For an Interruptible Load this must be unticked.	Tick Box	Ticked = Yes, Unticked = No	N/A	2.1A.2.(m) and the Market Schedule Procedure.
Storage Constraints	Where there are limitations on the Injection or Withdrawal capability of a Registered Facility based on the Charge Level of associated Electric Storage Resources. For an Interruptible Load, this must be unticked.	Tix Box	Ticked = Yes, Unticked = No	N/A	7.5.10 and 7.5.10A
Inertia	The kinetic energy (at nominal frequency) that is extracted from the rotating mass of a machine coupled to the power system to compensate for an imbalance in the system frequency. Alternatively, the 'synthetic inertia' provided by non-rotating machines which can be programmed to provide inertia to the system. An example is inverter-based technology. For an Interruptible Load, this must be zero.	Text Box	Numeric	MWs	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 2.4.2(a))
Tau Factor	The Facility Speed Factor for a Facility, as determined in accordance with the Frequency Co-optimised Essential System Services Accreditation WEM Procedure; or if it has not undergone the Accreditation process the value must be "999".	Text Box	Numeric	N/A	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 7.2.1)
Unconstrained Forecasts	This determines where the Unconstrained Forecast Source for the Primary Dispatch Interval or Primary Pre-Dispatch Intervals will come from: For an Interruptible Load, this must be RTMS.	Drop Down	Can only select one: <ul style="list-style-type: none"> RTMS SCADA PERSISTENCE 	N/A	2.1A.2.(m) and the Market Schedules Procedure.
FCESS & ROCOF Ride-Through Capability					

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Frequency Co-optimised Essential System Service Accreditation Parameters [Appendix 1(h).]	Frequency Co-optimised Essential System Service Accreditation Parameters approved by AEMO.	File Upload	<p>If this field is not applicable, please leave field blank.</p> <p>The template FCESS Accreditation Form is available here and the form must be approved by AEMO prior to submitting in WEMS.</p> <p>This must be in excel format and must be the same version AEMO approved.</p> <p>Further information on FCESS Accreditation process is available here.</p>	N/A	Appendix 1(h).
NDL Association information for clause 2.29.5					
NDL Association form for an Interruptible Load [2.29.5B.]	Complete and attach the NDL association from the following website (here)	File Upload	Excel	N/A	2.29.5B.
Evidence that the Market Participant owns the Non-Dispatchable Load or has entered into a contract with the person who owns, operates or controls the Non-Dispatchable Load [2.29.5B(a).]	As per the description in the data field.	File Upload	<p>Zip folder attachment. That will contain multiple PDFs (1 per Non-Dispatchable Load) in the zipped attachment.</p> <p>For each PDF name it after 10-digit NMI of the Non-Dispatchable Load.</p>	N/A	2.29.5B(a).

4.8 Demand Side Programme

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Demand Side Programme					
Facility Name	The WEMS Facility Code. This field is pre-populated.	Pre-populated	Text	N/A	2.33.3(c)i.
The maximum number of hours per day that the Facility will be available to provide Reserve Capacity if issued a Dispatch Instruction [Appendix 1(f)i.]	As per the data field description.	Text Box	Numeric between 0 and 24 Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Hours	Appendix 1(f)i.
For Business Days, the start interval of availability for dispatch (Appendix 1.(f).ii)	For Business Days, the start of the interval time the DSP is available for dispatch recorded as 24HH:MM.	Input Stepper	Hour, Minute Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Minutes	Appendix 1.(h).ix
For Business Days, the end interval of availability for dispatch (Appendix 1.(f).ii)	For Business Days, the end of the interval time the DSP is available for dispatch recorded as 24HH:MM.	Input Stepper	Hour, Minute Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Minutes	Appendix 1.(h).ix
For Non-Business Days, the start interval of availability for dispatch (Appendix 1.(f).ii)	For Non-Business Days, the start of the interval time the DSP is available for dispatch recorded as 24HH:MM.	Input Stepper	Hour, Minute Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Minutes	Appendix 1.(h).ix
For Non-Business Days, the end interval of availability for dispatch (Appendix 1.(f).ii)	For Non-Business Days, the end of the interval time the DSP is available for dispatch recorded as 24HH:MM.	Input Stepper	Hour, Minute Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Minutes	Appendix 1.(h).ix
Any restrictions on the availability of the Demand Side Programme (Appendix 1.(f).iii)	Details of any restrictions of the facility. Only information not already recorded in Appendix 1(h) should be included. This information must match any restrictions recorded during Reserve Capacity certification.	File Upload	A word document or pdf.	N/A	Appendix 1.(h).x

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The minimum notice period (in minutes) required for dispatch under clause 7.6.15 of the Facility [Appendix 1(f)iv.]	The minimum response time before the Demand Side Programme can begin to respond to an instruction from AEMO to change its output.	Text Box	Numeric between 0 and 120 minutes Please note minimum requirements are specified in clause 4.10.1(f) of WEM Rules.	Minutes	Appendix 1(f)iv.
Evidence that the communication and control systems required by clause 2.35 are in place and operational [Appendix 1(f)v.]	This field is redundant, instead, participants should have uploaded this information in a document called the "Communication Protocol" in the Facility General Information Change Request under the field of "Details of the operational control over the Facility", refer to Section 3.1 of this Technical Guide.	File Upload	As this field is mandatory in WEMS MPI please attach a document with the following wording: "The Communication Protocol will or has been submitted in the Facility General Information Change Request under the field of Details of the operational control over the Facility."	N/A	Appendix 1(f)v.
Details of the real-time telemetry capabilities of the Facility [Appendix 1(f)vi.]	The details of the real-time telemetry capabilities of the Facility.	File Upload	A word document or pdf.	N/A	Appendix 1.(h).viii
The Transmission Node Identifier [Appendix 1 (f)vii.]	The Transmission Node Identifier for the Facility.	Text Box	4-digit alphanumeric TNI value. The TNI value can be confirmed by the meter data agent (i.e. Western Power).	N/A	Appendix 1 (f)vii.
WEMDE & Operational Planning Data					
Normally-on Load	For a Demand Side Programme this must be unticked.	Tick Box	Ticked = Yes, Unticked = No	N/A	2.1A.2.(m) and the Market Schedule Procedure.
Storage Constraints	Where there are limitations on the Injection or Withdrawal capability of a Registered Facility based on the Charge Level of associated Electric Storage Resources. For a Demand Side Programme, this must be unticked.	Tix Box	Ticked = Yes, Unticked = No	N/A	7.5.10 and 7.5.10A

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Inertia	<p>The kinetic energy (at nominal frequency) that is extracted from the rotating mass of a machine coupled to the power system to compensate for an imbalance in the system frequency.</p> <p>Alternatively, the 'synthetic inertia' provided by non-rotating machines which can be programmed to provide inertia to the system. An example is inverter-based technology.</p> <p>For a Demand Side Programme this must be zero.</p>	Text Box	Numeric	MWs	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 2.4.2(a))
Tau Factor	<p>The Facility Speed Factor for a Facility, as determined in accordance with the Frequency Co-optimised Essential System Services Accreditation WEM Procedure.</p> <p>For a Demand Side Programme this must be "999"</p>	Text Box	Numeric	N/A	2.1A.2.(m) and the WEM Procedure: FCESS Accreditation (paragraph 7.2.1)
Unconstrained Forecasts	<p>This determines where the Unconstrained Forecast Source for the Primary Dispatch Interval or Primary Pre-Dispatch Intervals will come from:</p> <p>For a Demand Side Programme this must be RTMS.</p>	Drop Down	<p>Can only select one:</p> <ul style="list-style-type: none"> • RTMS • SCADA • PERSISTENCE 	N/A	2.1A.2.(m) and the Market Schedules Procedure.

5. Reserve Capacity

5.1 Reserve Capacity Status

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Reserve Capacity Status					
Reserve Capacity Facility Status	<p>This field determines the status of the facility for the purposes of the Reserve Capacity Mechanism.</p> <p>By default, this box is set to "Proposed" when a facility is created.</p>	Drop down list	Only one option may be selected	N/A	Appendix 1 - Market Procedure for Declaration of Bilateral Trades

5.2 Current Effective and Future Approved Facility Reserve Capacity Temperature Information

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Current Effective and Future Approved Facility Reserve Capacity Temperature Information					
Reference Number	<p>Internal reference for each Reserve Capacity Temperature Information Application / Change Request.</p> <p>This field is set and cannot be changed.</p>	Set field	Numeric	N/A	System Requirement
Date Submitted	<p>Date and time reference for each Reserve Capacity Temperature Information Application / Change Request.</p> <p>This field is set and cannot be changed.</p>	Set field	Numeric	DD/MM/YYYY	System Requirement
Application / Change Request Type	<p>Information on the type of Application / Change Request submitted by participant.</p> <p>This field is set and cannot be changed.</p>	Set field	Text	N/A	System Requirement
Effective Date	<p>Date each respective Reserve Capacity Temperature Information Application / Change Request is to become effective.</p> <p>This field is set and cannot be changed.</p>	Set field	Numeric	DD/MM/YYYY	System Requirement

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Status	Status of each Reserve Capacity Temperature Information Application / Change Request. This field is set and cannot be changed.	Set field	Text	N/A	System Requirement

5.3 Facility Reserve Capacity Temperature Information

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Facility Reserve Capacity Temperature Information					
Reserve Capacity Temperature Method	Displays the Reserve Capacity Temperature Method to be used in Reserve Capacity Obligation Quantity calculations and for Reserve Capacity Testing. This field is compulsory and one option must be selected: - BOM - SCADA - 41°C If the Energy Producing System is not temperature dependent or does not have SCADA nor BOM temperature measurements, then a value of 41 °C must be submitted.	Drop down list	Only one option may be selected	N/A	Clause of the WEM Rules 4.12.5.
RCOQ Temperature Location	Displays the Reserve Capacity Obligation Quantity (RCOQ) Temperature Location for the Facility. This field is available only if SCADA or BOM are selected as the Facility's Reserve Capacity Temperature Method. Participants must select one location from the menu.	Drop down list	Only one option may be selected	N/A	Clause of the WEM Rules 4.12.5.

6. Facility Technology Type

6.1 Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Facility Technology Type Standing Data					
<p>The nameplate capacity of each Facility Technology Type in the Facility, excluding Loads.</p> <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	<p>Nameplate capacity of each Facility Technology Type in the Facility, as per the output subject to ratings of any primary plant or equipment.</p> <p>For synchronous generators this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters.</p> <p>Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves.</p>	Text Box	Numeric	MW	Appendix 1(b)ii.
<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network for the following Facility Technology Types in the Facility under optimal conditions, expressed in MW:</p> <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	<p>Maximum sent-out capacity for each of the specified Facility Technology Types in the Facility.</p> <p>If the Facility Technology Type field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(b)vA. Appendix 1(b)vB. Appendix 1(b)vC.
<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply across the Electric Storage Resource Obligation Duration to the relevant Network from Electric Storage Resources in the Facility under optimal conditions, expressed in MW. [Appendix 1(b)vD.]</p>	<p>Only applicable if the Facility has an Electric Storage Resource (battery).</p> <p>Noting degradation of Electric Storage Resource capacity can occur, participants are recommended to update this value at least annually.</p> <p>If this field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(b)vD

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Details of the fuel or fuels that each Non-Intermittent Generating System in the Facility can use, including dual fuel capabilities and the process for changing fuels. [Appendix 1(b)xiv.]	<p>If the facility is multi-fuel, list fuels and provide information for AEMO to understand limitations and direct the facility under emergency conditions, e.g:</p> <ul style="list-style-type: none"> lead time requirements, change over duration, requirement for the facility to de-synchronise, maintain certain output level, limit operation (duration) under alternative fuel type approach to initiating a change over. <p>If the facility is a single fuel Facility then a file with commentary such as “No dual fuel capability or relevant changeover processes”</p> <p>b</p>	File Upload	A word document or pdf.	N/A	Appendix 1(b)xiv
The dependence of capacity on the type of fuel used by each Non-Intermittent Generating System in the Facility for each fuel described in Appendix 1(b)(xiv). [Appendix 1(b)xv.]	AEMO advises to leave this field blank, as we can refer to data provided under the dependence of sent out capacity on temperature at the location of the Facility [Appendix 1(b)vii.]	File upload	N/A	MW	Appendix 1(b)xv.
<p>The minimum time before each Facility Technology Type in the Facility can be restarted after it is shut down, excluding Loads (Minimum Restart Time).</p> <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	<p>As per description in the data field.</p> <p>If this field is not applicable, please leave field as zero.</p>	Input Stepper	Days, Hours, Minutes, Seconds	Refer to Format	Appendix 1(b)xix.

6.2 Semi-Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
<p>The nameplate capacity of each Facility Technology Type in the Facility, excluding Loads.</p> <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	<p>Nameplate capacity of each Facility Technology Type in the Facility, as per the output subject to ratings of any primary plant or equipment.</p> <p>For synchronous generators, this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters.</p>	Text Box	Numeric	MW	Appendix 1(c)ii

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves.</p> <p>If the Facility Technology Type field is not applicable please leave value as blank, do not enter zero.</p>				
<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network for the following Facility Technology Types in the Facility under optimal conditions, expressed in MW:</p> <ul style="list-style-type: none"> • Non-Intermittent Generating System • Intermittent Generating System • Electric Storage Resource 	<p>Maximum sent-out capacity for each of the specified Facility Technology Types in the Facility.</p> <p>If the Facility Technology Type field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix(c)vA. Appendix 1(c)vB. Appendix 1(c)vC.
<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply across the Electric Storage Resource Obligation Duration to the relevant Network from Electric Storage Resources in the Facility under optimal conditions, expressed in MW. [Appendix 1(c)vD.]</p>	<p>Only applicable if the Facility has an Electric Storage Resource (battery). If not applicable leave blank.</p> <p>Noting degradation of Electric Storage Resource capacity can occur, participants are recommended to update this value at least annually.</p> <p>If this field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(c)vD.
<p>Details of the fuel or fuels that each Non-Intermittent Generating System in the Facility can use, including dual fuel capabilities and the process for changing fuels. [Appendix 1(c)xv.]</p>	<p>If the facility is multi-fuel, list fuels and provide information for AEMO to understand limitations and direct the facility under emergency conditions, e.g:</p> <ul style="list-style-type: none"> • lead time requirements, change over duration, requirement for the facility to de-synchronise, maintain certain output level, limit operation (duration) under alternative fuel type • approach to initiating a change over. <p>If the facility is a single fuel facility then a file with commentary such as “No dual fuel capability or relevant changeover processes”</p> <p>If the facility has no fuel (e.g. solar, wind, hydro, battery) then the field can be left “blank”</p>	File Upload	A word document or PDF.	N/A	Appendix 1(c)xv.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The dependence of capacity on the type of fuel used by each Non-Intermittent Generating System in the Facility for each fuel described in Appendix 1(b)(xiv). [Appendix 1(b)xv.]	AEMO advises to leave this field blank, as we can refer to data provided under the dependence of sent out capacity on the temperature at the location of the Facility [Appendix 1(c)vii.]	File upload	N/A	MW	Appendix 1(b)xv.
The minimum time before each Facility Technology Type in the Facility can be restarted after it is shut down, excluding Loads (Minimum Restart Time). <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	As per description in the data field. If this field is not applicable, please leave field as zero.	Input Stepper	Days, Hours, Minutes, Seconds	Refer to Format	Appendix 1(c)xviii.

6.3 Non-Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The nameplate capacity of each Facility Technology Type in the Facility, excluding Loads. <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	Nameplate capacity of each Facility Technology Type in the Facility, as per the output subject to ratings of any primary plant or equipment. For synchronous generators, this is typically the nominal rating of the turbine(s), while non-synchronous is typically the aggregate of downstream plant/inverters. Where ratings are given in apparent power (MVA), this is the real power (MW) equivalent accounting for capability curves. If the Facility Technology Type field is not applicable please leave value as blank, do not enter zero.	Text	Numeric	MW	Appendix 1(d)ii.
The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network for the following Facility Technology Types in the Facility under optimal conditions, expressed in MW: <ul style="list-style-type: none"> Non-Intermittent Generating System Intermittent Generating System Electric Storage Resource 	Maximum sent-out capacity for each of the specified Facility Technology Types in the Facility. If the Facility Technology Type field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(d)vA. Appendix 1(d)vB. Appendix 1(d)vC.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply across the Electric Storage Resource Obligation Duration to the relevant Network from Electric Storage Resources in the Facility under optimal conditions, expressed in MW. [Appendix 1(d)vD.]	<p>Only applicable if the Facility has an Electric Storage Resource (battery). If not applicable leave blank.</p> <p>Noting degradation of Electric Storage Resource capacity can occur, participants are recommended to update this value at least annually.</p> <p>If this field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(d)vD.
Details of the fuel or fuels that each Non-Intermittent Generating System in the Facility can use, including dual fuel capabilities and the process for changing fuels. [Appendix 1(d)viii.]	<p>If the facility is multi-fuel, list fuels and provide information for AEMO to understand limitations and direct the facility under emergency conditions, e.g:</p> <ul style="list-style-type: none"> lead time requirements, change over duration, requirement for the facility to de-synchronise, maintain certain output level, limit operation (duration) under alternative fuel type approach to initiating a change over. <p>If the facility is a single fuel facility then a file with commentary such as “No dual fuel capability or relevant changeover processes”</p> <p>If the facility has no fuel (e.g. solar, wind, hydro, battery) then the field can be left “blank”</p>	File Upload	A word document or pdf.	N/A	Appendix 1(d)viii.

7. Separately Certified Component

7.1 Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
If the Facility has a Separately Certified Component that is a Non-Intermittent Generating System, the maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of:	As per the description in the data field.	Tick Box	Ticked = Yes, Unticked = No	N/A	Appendix 1(b)ix.1 Appendix 1(b)ix.2
41 degrees Celsius [Appendix 1(b)ix.1.]	The maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of 41 degrees Celsius If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(b)ix.1.
45 degrees Celsius [Appendix 1(b)ix.2.]	The maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of 45 degrees Celsius If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(b)ix.2.
If the Facility has a Separately Certified Component that is a Non-Intermittent Generating System, the maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System under optimal conditions. [Appendix 1(b)x.]	As per the description in the data field. If a field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(b)x.
If the Facility has a Separately Certified Component that is an Intermittent Generating System, the maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Intermittent Generating System under optimal conditions, expressed in MW. [Appendix 1(b)xA.]	As per the description in the data field. If a field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(b)xA
If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant	As per the description in the data field. If a field is not applicable please leave value as blank, do not enter zero.	Tick box	Ticked = Yes, Unticked = No	MW	Appendix 1(b)xi.1. Appendix 1(b)xi.2.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
Network from the Electric Storage Resource when it is operated normally at an ambient temperature of:					
*41 degrees Celsius [Appendix 1(b)xi.1.]	<p>If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 41 degrees Celsius.</p> <p>If a field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(b)xi.1.
*45 degrees Celsius [Appendix 1(b)xi.2.]	<p>If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent-out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 45 degrees Celsius.</p> <p>If a field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(b)xi.2.
*If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply across the Electric Storage Resource Obligation Duration, to the relevant Network from the Electric Storage Resource under optimal conditions, expressed in MW. [Appendix 1(b)xii.]	<p>Only applicable if the Facility has an Electric Storage Resource (battery). If not applicable leave blank.</p> <p>Noting degradation of Electric Storage Resource capacity can occur, participants are recommended to update this value at least annually.</p> <p>If this field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(b)xii.
*If the Facility has a Separately Certified Component that is an Electric Storage Resource, the minimum Charge Level capability of the Electric Storage Resource. [Appendix 1(b)xiii.]	<p>The minimum charge level in MWh is used in the refund calculation in clause 4.26.1F. Please note AEMO expects the value to be consistent with the minimum charge level provided under</p>	Text Box	Numeric	MWh	Appendix 1(b)xiii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
	<p>the respective Reserve Capacity certification process under clause 4.10.1(fA).</p> <p>If this field is not applicable please leave value as blank, do not enter zero.</p>				

7.2 Semi-Scheduled Facility

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
If the Facility has a Separately Certified Component that is a Non-Intermittent Generating System, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of:	As per description in the data field.	Tick Box	Ticked = Yes, Unticked = No	MW	Appendix 1(c)ix.1. Appendix 1(c)ix.2.
*41 degrees Celsius [Appendix 1(c)ix.1.]	<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of 41 degrees Celsius.</p> <p>If the field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(c)ix.1.
*45 degrees Celsius [Appendix 1(c)ix.2.]	<p>The maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Non-Intermittent Generating System when it is operated normally at an ambient temperature of 45 degrees Celsius.</p> <p>If the field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(c)ix.2.
If the Facility has a Separately Certified Component that is a Non-Intermittent Generating System, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to	<p>As per description in the data field.</p> <p>If the field is not applicable please leave value as blank, do not enter zero.</p>	Text Box	Numeric	MW	Appendix 1(c)x.

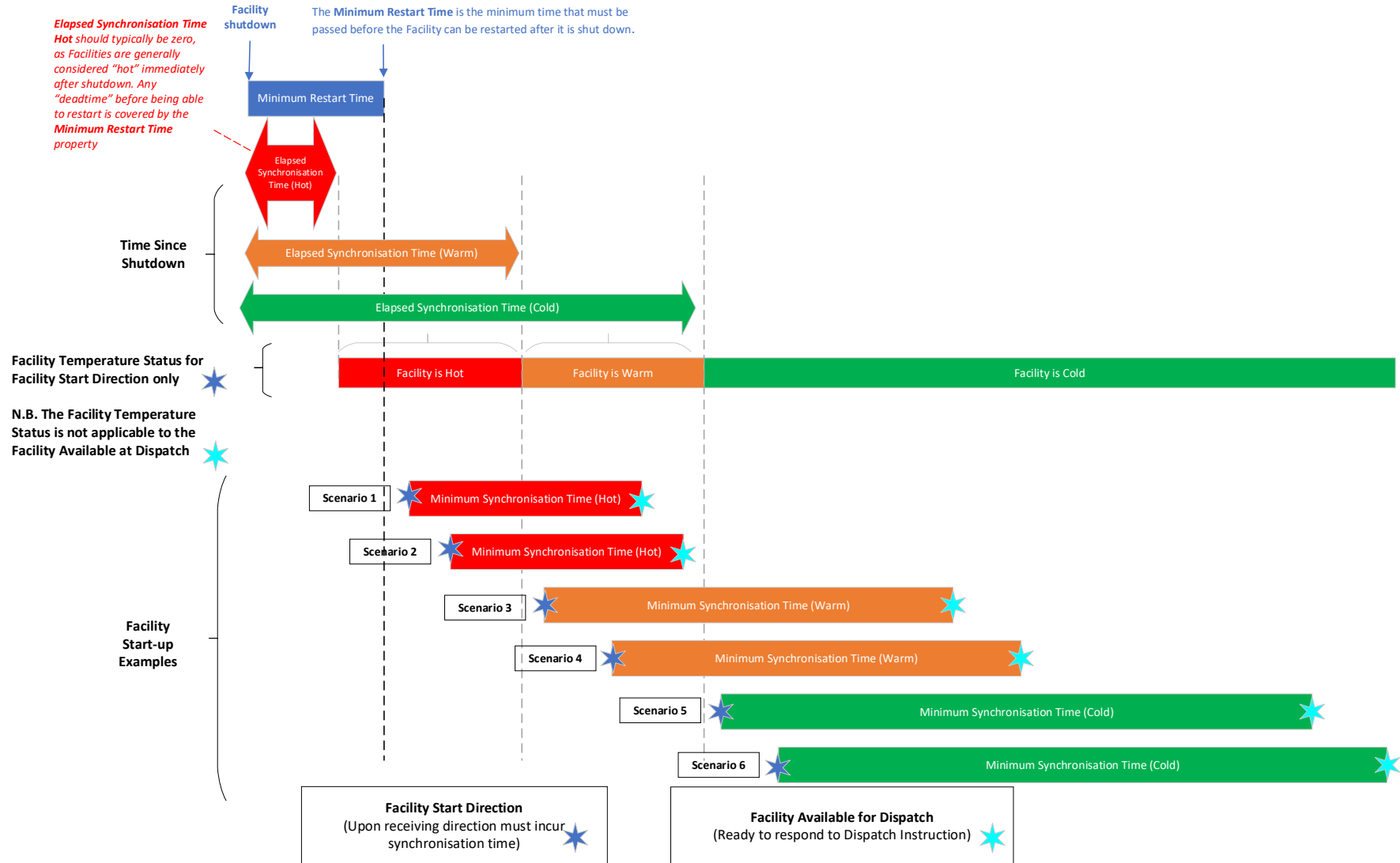
Data Field	Description	Field type	Format	Units	WEM Rule Requirement
the relevant Network from the Non-Intermittent Generating System under optimal conditions. [Appendix 1(c)x.]					
If the Facility has a Separately Certified Component that is an Intermittent Generating System, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Intermittent Generating System under optimal conditions, expressed in MW. [Appendix 1(c)xA.]	As per description in the data field. If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(c)xA.
If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of:	As per description in the data field. If the field is not applicable please leave value as blank, do not enter zero.	Tick box	Ticked = Yes, Unticked = No	MW	
*41 degrees Celsius [Appendix 1(c)xi.1.]	If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 41 degrees Celsius. If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(c)xi.1.
*45 degrees Celsius [Appendix 1(c)xi.2.]	If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply to the relevant Network from the Electric Storage Resource when it is operated normally at an ambient temperature of 45 degrees Celsius. If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MW	Appendix 1(c)xi.2.
*If the Facility has a Separately Certified Component that is an Electric Storage Resource, the maximum sent out capacity, net of embedded and Parasitic Loads, that can be available for supply	As per description in the data field.	Text Box	Numeric	MW	Appendix 1(c)xii.

Data Field	Description	Field type	Format	Units	WEM Rule Requirement
across the Electric Storage Resource Obligation Duration, to the relevant Network from the Electric Storage Resource under optimal conditions, expressed in MW. [Appendix 1(c)xii.]	If the field is not applicable please leave value as blank, do not enter zero.				
*If the Facility has a Separately Certified Component that is an Electric Storage Resource, the minimum Charge Level capability of the Electric Storage Resource. [Appendix 1(c)xiii.]	Minimum Charge Level in MWh If the field is not applicable please leave value as blank, do not enter zero.	Text Box	Numeric	MWh	Appendix 1(c)xiii.

8. Appendices

8.1 Appendix 1 - Start-Up Times

Illustration of how minimum restart time, elapsed times and synchronisation times used by AEMO.



8.2 Appendix 1 - Start-Up Times Examples of Scenario 1 to 6

Examples of how minimum restart time, elapsed times and synchronisation times are interpreted and used by AEMO for scenarios 1 to 6 (in section 8.1).

Minimum Restart Time (mins)	15
Elapsed Time Hot (mins)	0
Elapsed Time Warm (mins)	60
Elapsed Time Cold (mins)	120

Facility offline	8:00 AM
Facility is Hot	8:00 AM
Facility is Warm	9:00 AM
Facility is Cold	10:00 AM

Hot Synch Time (mins)	20
Warm Resynch Time (mins)	40
Cold Resynch Time (mins)	60

Scenario	Direction issued at	Description
1	8:20 AM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time warm has not passed, therefore Facility still in the Hot state. Hot Synchronisation time of 20 minutes applies. Direction issued, expect Facility to be ready for dispatch by 08:40 AM.
2	8:50 AM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time warm has not passed, therefore Facility still in the Hot state. Hot Synchronisation time of 20 minutes applies. Direction issued, expect Facility to be ready for dispatch by 09:10 AM.
3	9:30 AM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time warm has passed, therefore Facility in the Warm state. Warm Synchronisation time of 40 minutes applies. Direction issued, expect Facility to be ready for dispatch by 10:10 AM.
4	9:45 AM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time warm has passed, therefore Facility in the Warm state. Warm Synchronisation time of 40 minutes applies. Direction issued, expect Facility to be ready for dispatch by 10:25 AM.
5	10:15 AM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time cold has passed, therefore Facility in the Cold state. Cold Synchronisation time of 60 minutes applies. Direction issued, expect Facility to be ready for dispatch by 11:15 AM.
6	2:30 PM	Minimum re-start time has passed, Facility ready to be directed. Elapsed time cold has passed, therefore Facility in the Cold state. Cold Synchronisation time of 60 minutes applies. Direction issued, expect Facility to be ready for dispatch by 3:30 PM.

8.3 Appendix 2 - Minimum Physical Responses Time to a Dispatch Instruction

The minimum physical response time before the Facility can begin to respond to a Dispatch Instruction, when the Facility is running represents the time lag between the Facility Power Plant Controller (PPC) receiving the desired MW signal from AEMO and responding – i.e. $t_2 - t_1$ in the figure below:

