

# Market Operator Generator Offer Procedure



Version 2.0  
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# 1 Purpose of Procedure

This procedure specifies the principles and key processes for the preparation and submission of *Generator Offers* to the Power System Controller when operating in the *I-NTEM*.

## 2 Scope

- 2.1 The procedure only applies to the *I-NTEM*.
- 2.2 This procedure is prepared under the authority of Section 4.4B(e) of the System Control Technical Code.
- 2.3 This procedure applies to any *settlements* statements prepared and issued by the *Market Operator* and to any *embedded generator* subject to dispatch by System Control even if not subject to I-NTEM settlement.
- 2.4 The procedure covers those parts of the commitment and dispatch process<sup>1</sup> that involve the submission of *Generator Offers* ('Offers') to the System Controller. The receipt of Offers by the System Controller forms an initial part of the commitment and dispatch process.
- 2.5 The principles for preparation and submission of Offers cover:
  - 2.5.1 The Offer template.
  - 2.5.2 The Default *Generator Offer* ('Default Offer').
  - 2.5.3 The mandatory Offer.
  - 2.5.4 The *gate closure* time.
- 2.6 *Gate closure* only occurs on business days.
- 2.7 The procedure does not cover other parts of the commitment and dispatch process.

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<sup>1</sup> The commitment and dispatch process is referred to in Section 4.4B(c) of the System Control Technical Code.

### 3 Roles and Responsibilities

Role / Title	Responsibility
Power and Water / Market Operator	<ul style="list-style-type: none"> <li>• Ensure that the requirements of Section 4.4B(e) have been correctly actioned.</li> <li>• Ensure that this procedure is fit for purpose.</li> <li>• Ensure compliance with this procedure.</li> <li>• Receive and process Offers in accordance with this procedure.</li> <li>• Advise <i>Generator</i> representatives of any instance that an Offer is not consistent with this procedure.</li> <li>• Review and revise the procedure from time to time and no later than the review date to maintain its relevance.</li> </ul>
<i>Generator</i> representative	<ul style="list-style-type: none"> <li>• Perform the duties required of a <i>Generator</i> Market Participant as required by this procedure.</li> </ul>

### 4 Definitions

The definitions of words recorded in the Glossary of the System Control Technical Code apply to this document, in addition to the words recorded in the table below, as shown in italics throughout the document.

DEFINITIONS		
No.	Term	Meaning
1	<i>Band 1</i>	<p>Band 1 for each <i>generating unit</i> comprises a quantity and a price.</p> <p>The Band 1 quantity is to reflect the <i>minimum stable load</i> recorded in the Generator Registration standing data of the <i>generating unit</i> or such increased amount where the increase has been notified to the Power System Controller via a formal GOTR submission.</p> <p>The Band 1 price is to be zero for a self-committed <i>generating unit</i> and is to be not less than zero for a fast start <i>generating unit</i>.</p>
2	<i>Band 2</i>	<p>Band 2 for each <i>generating unit</i> comprises a quantity and a price. Band 2 can only be scheduled if <i>Band 1</i> is fully scheduled.</p>

		<p>The Band 2 incremental quantity (beyond the Band 1 quantity) is to reflect the nominal dispatchable range of the <i>generating unit</i>. Any output that can only be dispatched as a result of an additional manual action is not part of Band 2.</p> <p>For a synchronous <i>generating unit</i> the quantity provided from <i>Band 1</i> and Band 2 combined must be equal to or greater than the Base Maximum Capacity recorded in the Generator Registration standing data of the <i>generating unit</i>, or such reduced amount where the reduction has been notified to the Power System Controller via a formal GOTR submission.</p> <p>The Band 2 price is not to be less than the <i>Band 1</i> price, except for fast-start <i>generating units</i> in which case the Band 2 price is to equal the Band 1 price.</p>
3	<i>Band 3</i>	<p>Band 3 for each <i>generating unit</i> comprises a quantity and a price. Band 3 can only be scheduled if <i>Band 2</i> is fully scheduled.</p> <p>The Band 3 quantity is only to be used to reflect the incremental increase in the <i>generating unit's</i> dispatchable range as a result of an additional manual action such as activation of wet mode or sprint capacity.</p> <p>The Band 3 price is not to be less than the <i>Band 2</i> price.</p>
4	<i>Base Maximum Capacity</i>	<p>The lowest maximum capacity of a <i>generating unit</i> when environmental operating conditions are most unfavourable. Any output above the capacity recorded through Generation Registration standing data is regarded as a real time extension of the <i>Band 3</i> offer.</p> <p>Refer to Secure System Guidelines Section 4 Determining Base Capacity.</p>
5	<i>Closed Cycle Mode</i>	<p>A mode of operation of a <i>generating unit</i> where either it must be running to allow another <i>generating unit</i> to operate, or another <i>generating unit</i> must be operating for it to operate.</p>
6	<i>Decommitment Order</i>	<p>The order in which a <i>Generator</i> nominates to have its fast start <i>generating units</i> come off-line after 18:00 on a given trading day. If there are any other on-line <i>generating units</i> belonging to the same <i>Generator</i> identified in the decommitment order, then the <i>generating unit</i> with the lowest decommitment order that is not required to remain on for security reasons is to be decommitted. The order is applied until all the <i>generating units</i> identified have been decommitted (or prevented from being taken off-line by security requirements), with any <i>generating units</i> with no</p>

		<p>number specified being decommitted based on normal bid prices.</p> <p>Notes: This feature effectively moves these <i>generating units</i> to the top (what would normally be the highest price end) of the merit order for units to come off.</p> <p>Where a generating unit would, if not for the application of the decommitment order, be decommitted, that unit will not be able to set price.</p> <p>Normal scheduling and tie-break logic operates without regard for this order and will identify the next <i>generating unit</i> that would normally be taken off-line.</p>
7	<i>Default Offer</i>	<p>The Default <i>Generator Offer</i> that is approved from time to time by the Market Operator as part of the <i>Generator's</i> registration standing data.</p> <p>Note that the <i>Generator</i> may revise the Default Offer at any time by submitting a revised Default Offer to the Market Operator for approval. The Market Operator, in conjunction with the Power System Controller, will advise of the approval (or otherwise) of the Default Offer. The Default Offer commences from the day immediately following the date of approval by the Market Operator.</p>
8	<i>Gate closure</i>	1230 hours on the last business day before the nominated trading day.
9	<i>Generator</i>	A Market Participant who has registered with the Market Operator for the <i>I-NTEM</i> as a Generator.
10	<i>Generator Offer</i>	The information recorded on the Generator Offer template by a <i>Generator</i> for any one day of its proposed operation in the <i>I-NTEM</i> . For any one trading day, prior to <i>gate closure</i> , the <i>Generator</i> may progressively submit one or more versions of the Generator Offer to correct a previous version. The last version prior to <i>gate closure</i> is the active Generator Offer.
11	<i>GOTR</i>	<i>Generator Outage/Test Request</i>
12	<i>I-NTEM</i>	The Interim Northern Territory Electricity Market
13	<i>Minimum Stable Load</i>	The lowest MW output at which a <i>generating unit</i> freely operates before it is taken off-line. This is to be based on installed technology / plant performance characteristics, and is not to be adjusted to optimise a <i>generator unit's</i> dispatch in the market offer process.
14	<i>Open Cycle Mode</i>	A mode of operation of a <i>generating unit</i> where it operates independently of other <i>generating units</i> .

## 5 Principles

The following principles and key processes apply to the preparation and submission of *Generator Offers* before *gate closure*:

- 5.1 A *Generator Offer* is to be prepared using the template shown in Attachment A<sup>2</sup>. The template in Appendix A replaces the template shown in Attachment 4 of the System Control Technical Code, as provided for in clause 4.4B(f) of that Code.
- 5.2 A *Generator* must submit an Offer to the System Controller before *gate closure*.
- 5.3 In the first instance, the *Generator Offer* is to be submitted to the Power System Controller's nominated email address no later than *gate closure*, as detailed in Attachment B.
- 5.4 If the *Generator Offer* is not received in the Power System Controller's mail box by *gate closure*, then the *Default Offer* will be used in the commitment and dispatch process.
- 5.5 To be valid, a *Generator Offer* or *Default Offer* must comply with this procedure and attachments.
- 5.6 If any submitted *Generator Offer* or *Default Offer* fails to conform to the requirements of this procedure, the *Generator Offer* or *Default Offer* will be rejected by the *Power System Controller*. Where a *Generator Offer* is rejected under this situation, the *Generator* may submit a revised *Generator Offer* until *gate closure*.

## 6 References

#	Document	Date	Location
1	Systems Control Technical Code V6	30/03/2020	D2020/134187
2	Market Timetable V1.0	27/05/2016	D2016/93559
3	System Secure Guidelines V4.2	30/04/2020	D2020/197868
4	Consultation Paper – Revision of Generator Offer Procedure and Tie Break Procedure	12/06/2020	D2020/262247

## 7 Attachments

- 7.1 Attachment A: *Generator Offer* Template.
- 7.2 Attachment B: *Gate Closure* Details.

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<sup>2</sup> Note that the template in Attachment A replaces the template shown in Attachment 4 of the System Control Technical Code.

## 8 Records

This document is to be stored in Power and Water's Records Management System (TRIM) in accordance with the Document and Record Control Procedure.

## 9 Review

This document is to be reviewed in accordance with changes to the System Control Technical Code.

## 10 Document History

Date of Issue	Version	Prepared By	Description of Changes
01/03/2016	Draft 1.0	Andrew Roberts	Document published for consultation
2/06/2016	V1.0	Andrew Roberts	Approved after consultation
03/07/2020	Draft 2.0	Zaeen Khan	Document published for consultation
04/09/2020	V2.0	Zaeen Khan	Approved after consultation

For clarification on the use of this document, please contact Power and Water Corporation in the role of Market Operator (email: [market.operator@powerwater.com.au](mailto:market.operator@powerwater.com.au)).



# Attachment A: Generator Offer Template

A Generator Offer is to be submitted using the following pre-prepared template, available from the System Controller:

Template Version 12 - (03/07/2020)																									
For trading day commencing <input style="width: 100px; height: 20px;" type="text"/>		Issuer <input style="width: 100%; height: 20px;" type="text"/>																							
		Date of issue <input style="width: 100%; height: 20px;" type="text"/>																							
		Issue Version <input style="width: 100%; height: 20px;" type="text"/>																							
		Company <input style="width: 100%; height: 20px;" type="text"/>																							
Self-commitment units										Fast start units								Merit							
Standard Unit ID	off-load order	Time of sync (on-line)	Time of de-sync (off-line)	B1: minimum stable load	B1 OFFER	B2: incremental capacity	B2 OFFER	B3: incremental capacity	B3 OFFER	total offered capacity (check)	T1: Time to start	T2: Time to reach min load	Offload Order (after 1800 Hours)	T4: Time to reduce to zero	B1 minimum stable load	B2: incremental capacity	B2 OFFER - LONG RUN (Set 1)	B2 OFFER - SHORT RUN (Set 2)	B3: incremental capacity	B3 OFFER	total offered capacity (check)	Machines Offered	B2 - LONG RUN Merit	B2 - SHORT RUN Merit	B3 Merit
	Number	hhmm	hhmm	MW	\$/MWh	MW	\$/MWh	MW	\$/MWh	MW	mm	mm	Number	mm	MW	MW	\$/MWh	\$/MWh	MW	\$/MWh	MW	Unit ID	Number	Unit ID	Number
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
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17																									
18																									
19																									
20																									
21																									
22																									
23																									
24																									
Band totals						0.0	0.0	0.0		0.0				0.0	0.0			0.0		0.0					

**Generator Offer Template**

## Instructions for completing the Generator Offer ('Offer') template:

Ref #	Instruction (introduction)	Instruction detail
1	In preparing an Offer, the <i>Generator</i> should note:	<ul style="list-style-type: none"> <li>The trading day is the 24 hour period commencing half hour ending 0430 hrs on day 1 and ending 0400 hrs on day 2.</li> <li>The email address from which the Offer was sent will be used to relate the Company to the Offer.</li> <li>That email address will be nominated at the time of Registration of the <i>Generator</i> with the Market Operator.</li> <li>The Market Operator will assign a <i>Generator</i> ID at the time of Registration.</li> <li>The <i>Generator Offer</i> must only nominate one mode of operation for any one unit in a trading day. The choices are either self-commit mode or fast-start mode. The mode of a unit can change from one trading day to the next.</li> <li>The unit prices for capacity above minimum load contained in the <i>Generator Offer</i> "must approximate the dispatch cost that would be incurred or avoided as appropriate by such dispatch", in accordance with the provisions in clauses 4.4B(g) &amp; (h) of the System Control Technical Code.</li> <li>No two <i>generating units</i> in a <i>Generator Offer</i> are to have the same price in any band except where this procedure requires that a specific price be submitted with a band (e.g. zero).</li> </ul>
2	Please email the completed Offer to:	<a href="mailto:systemdispatch.PWC@powerwater.com.au">systemdispatch.PWC@powerwater.com.au</a>
3	Email subject line must contain: [mandatory]	<i>Generator Offer</i> <<user defined text>> [where <<user defined text>> is optional]
4	Offer to be an Attachment to the email:	file type must be '.xlsx'
5	Offer file name:	<<user defined text>> [that is, no restrictions are placed on the file name]
6	Offer date:	<ul style="list-style-type: none"> <li>The Offer date is the date shown in cell C3 in the Offer tab.</li> </ul>

		<ul style="list-style-type: none"> <li>The Offer date is the date of the trading day (NOT the date of the email submission).</li> <li>If this date is missing the email will be rejected (see below).</li> </ul>
7	Email to be submitted no later than:	<ul style="list-style-type: none"> <li>1230 hours on any one business day.</li> <li>Note that Offers for days in advance may be made on the last business day in the week provided the Offers are correctly dated.</li> </ul>
8	Number of Offers for a trading day:	<ul style="list-style-type: none"> <li>Only one Offer is required for each trading day.</li> <li>If two Offers are submitted for the one trading day, only the latest Offer prior to 1230 hours will be processed for that trading day.</li> </ul>
9	Rules for completing Offer template:	
	9.1	A blank field means that no Offer is made - no entry is otherwise required in that field
	9.2	For self-commitment <i>generating units</i> , the <i>Band 3</i> price is to be equal to or greater than the <i>Band 2</i> price. The <i>Band 2</i> price is to be equal to or greater than the <i>Band 1</i> price. The <i>Band 1</i> price is to be zero \$/MWh.
	9.3	For self-commitment <i>generating units</i> , the <i>Band 3</i> quantity (if any) is to be incremental on the <i>Band 2</i> quantity. The <i>Band 2</i> quantity is to be incremental on the <i>Band 1</i> quantity. The <i>Band 1</i> quantity is to represent the <i>minimum stable load</i> of the unit. <i>Band 3</i> capacity is not required if all capacity is shared between <i>Band 1</i> and <i>Band 2</i> . <i>Band 2</i> capacity is not required if all capacity is allocated to <i>Band 1</i> for a special purpose (eg testing).
	9.4	For self-commitment <i>generating units</i> , the time to synchronise and time to de-synchronise is to be provided in columns G and H respectively.
	9.5	For self-commitment <i>generating units</i> with a <i>Band 1</i> quantity exceeding zero an Off-Load Order must be provided. This applies to <i>generating units</i> operating in either the <i>open cycle mode</i> or the <i>closed cycle mode</i> . The order for taking the unit off-line is to be provided in column E. Column E has two sequences, an alpha sequence and a numeric sequence (with alpha suffix). <b>Alpha sequence:</b> This sequence is used when the <i>generating units</i> are self-committed in the <i>open cycle</i>

		<p><i>mode</i>. The Off-load Order commences with character 'A' and then 'B' and so on, with no limit to the number of characters. The <i>generating unit</i> assigned character A is off-loaded first in the sequence. <i>Generating units</i> that are assigned alpha characters are off-loaded before <i>generating units</i> that are assigned numeric characters.</p> <p><b>Numeric sequence (with alpha suffix):</b> This sequence is used when <i>generating units</i> are used in the <i>closed cycle mode</i>. The order starts at numeric number 1 (first off-line), 2 means next off line and so on, with no limit to the order number. In addition, an alpha character (as a suffix) may accompany the numeric number, but only for special reasons: The only acceptable alpha character is: a = open cycle <i>minimum stable load</i>.</p> <p>The following examples are provided for the removal of doubt:</p> <ul style="list-style-type: none"> <li>• <i>the generating unit will be requested to be de-synchronised by the System Controller</i></li> <li>• <i>the generating unit will be requested to go onto open cycle mode and its output will then be reduced to its minimum load (by AGC) to the quantity provided in the standing data.</i></li> </ul> <p>In both these examples, the System Controller will assume that the steam unit will remain on-line coupled to the remaining <i>generating unit</i> unless otherwise advised by the <i>Generator</i>.</p>
	9.6	<p>For fast start <i>generating units</i>, the Band 1 price must be not less than zero and is to be equal to the Band 2 (set 1) price, or the Band 2 (set 2) price, depending on the mode of dispatch. As such, no price offer is required for Band 1. The Band 3 price is to be equal to or greater than the Band 2 price.</p> <p>For each fast start <i>generating unit</i>:</p> <p>(a) there must be a T1, T2 and T4 time. Note that the T3 time has now been removed.</p> <p>(b) there must be a set 1 and set 2 price.</p>
	9.7	<p>For fast start <i>generating units</i>, the <i>Band 3</i> quantity (if any) is to be incremental on the <i>Band 2</i> quantity. The <i>Band 2</i> quantity is to be incremental on the <i>Band 1</i> quantity. The <i>Band 1</i> quantity is to represent the</p>

		<p><i>minimum stable load</i> of the unit. <i>Band 3</i> capacity is to be zero if no separately dispatchable quantity is available. <i>Band 2</i> capacity is not required if all capacity is allocated to <i>Band 1</i> for a special purpose (eg testing).</p> <p>For the removal of doubt, Band 2 capacity is always required for fast start <i>generating units</i>.</p>
	9.8	Units that can operate in combined cycle mode and/or in open cycle mode are to be offered as individual units. The recognition of their combined cycle relationship will be recorded in the standing data.
	9.9	A <i>decommitment order</i> may optionally be specified for any fast start <i>generating unit</i> . The first <i>generating unit</i> to be decommitted is to be numbered 1, with the next <i>generating unit</i> to be decommitted numbered 2, and the number increasing by one for each subsequent <i>generating unit</i> . It is not required that all, or any, <i>generating units</i> be included in the <i>decommitment order</i> .
	9.10	The total capacity offered for any one <i>synchronous generating unit</i> must be equal to or greater than the <i>Base Maximum Capacity</i> quantity registered in the standing data with the Market Operator, unless the <i>Generator</i> has submitted a <i>GOTR</i> advising of the temporary reduction in capacity.
	9.11	<p>The self-commitment synchronisation and de-synchronisation times:</p> <ul style="list-style-type: none"> <li>(a) are the time of a trading interval - that is, the half-hour ending hh:mm</li> <li>(b) represent the time of synchronising of the unit at the beginning of the trading interval (the unit ramps up during the trading interval) and is at its band 1 level by the end of the trading interval</li> <li>(c) represent the time of de-synchronising of the unit at the end of the trading interval (the unit ramps down during the trading interval) and is de-synchronised at or before the end of the trading interval</li> <li>(d) to be left blank only if the unit is on-line prior to the trading day and offered for all 48 trading intervals in the nominated trading day.</li> </ul>

	9.12	For fast start <i>generating units</i> , the run time duration for set 1 and set 2 prices are defined as: set 1 (Long Run): longer than 4 hours up to 24 hours set 2 (Short Run): 4 hours or less.
10	Rejection of Offer:	<p>An Offer will be rejected if it contains an error (as a result of a few simple tests). Examples of errors include:</p> <ul style="list-style-type: none"> <li>• Email subject line can't be recognised.</li> <li>• No email '.xlsx' attachment detected.</li> <li>• Generating unit ID has not been registered with Market Operator.</li> <li>• Offer date not provided; Offer date relates to a past trading day.</li> <li>• Offer template rule breach &gt;&gt;&gt; in this case the attachment will be returned with the faulty cell highlighted in yellow.</li> <li>• Offered capacity for bands 1 and 2 (B1+B2) is equal to more than the registered standing data for <i>Base Maximum Capacity</i></li> </ul>
11	Offer template notes:	<ul style="list-style-type: none"> <li>• The Unit IDs to be used in column C of the Offer template are listed in template data.</li> </ul>
12	Standing data:	<ul style="list-style-type: none"> <li>• Standing Data is to be provided to the Market Operator at time of Registration.</li> <li>• Any changes to Standing Data (if it can't meet the Standing Data on a temporary basis (e.g., band 1 and band 2 capacity not meeting BMC) are to be provided in a <i>Generator Outage/Test Request (GOTR)</i>. <ul style="list-style-type: none"> <li>○</li> </ul> </li> </ul>
13	Default <i>Generator Offer</i> :	<ul style="list-style-type: none"> <li>• The Default <i>Generator Offer</i> is to be provided to the Market Operator at time of registration and subsequently when a change to the offer is requested.</li> <li>• A special one off Offer (which will be known as the Default <i>Generator Offer</i>) is to be provided at the time the <i>Generator</i> registers with the Market Operator. This is nominally a one-off event.</li> </ul>

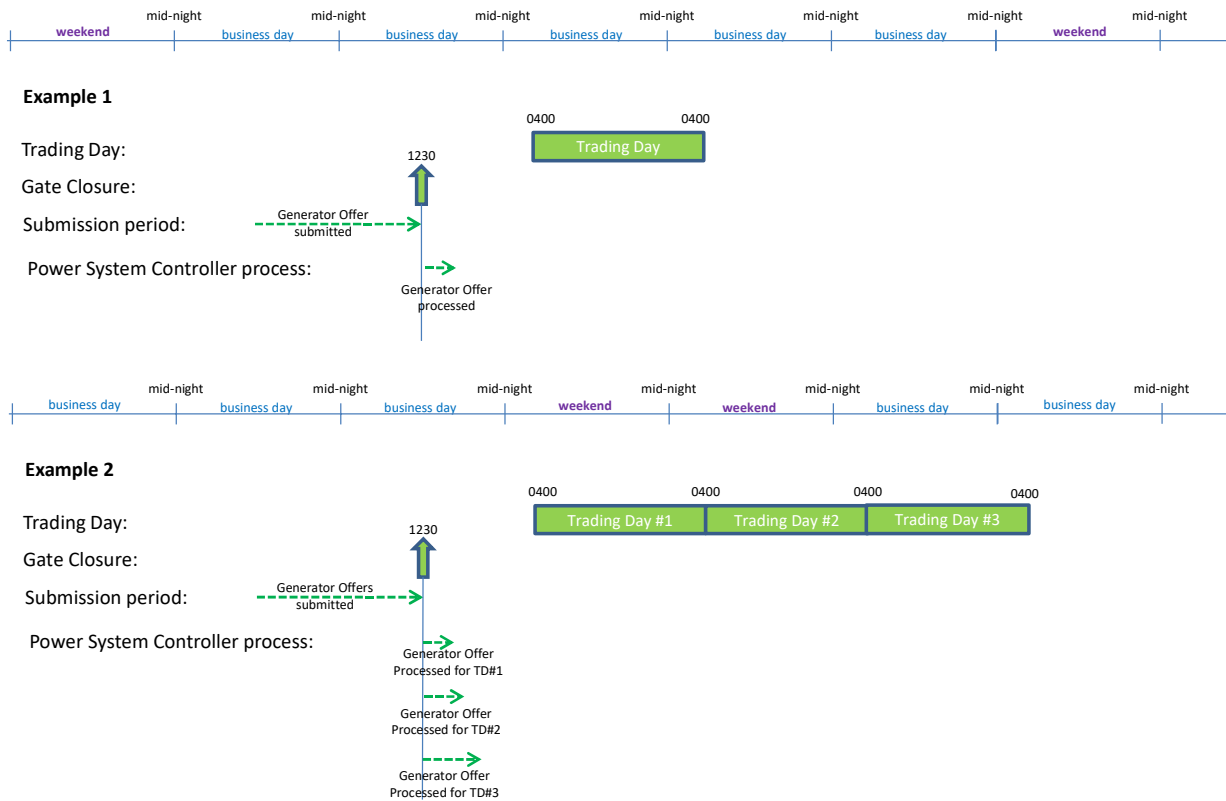
		<ul style="list-style-type: none"><li>• The Default <i>Generator Offer</i> can be changed at any time after the initial Default <i>Generator Offer</i> is registered.</li><li>• The Default <i>Generator Offer</i> is separate to a Generator's Offer for any trading day.</li><li>• A Default <i>Generator Offer</i> will be used if a valid <i>Generator Offer</i> submitted fails to reach the designated System Control email inbox by <i>gate closure</i> (1230 hours on a business day). In this situation, the Default <i>Generator Offer</i> to be used for a trading day will be the Default <i>Generator Offer</i> held by System Control at the time of <i>gate closure</i> for that trading day.</li><li>• An update to the Default <i>Generator Offer</i> may be emailed to the Market Operator at any time.</li></ul>
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# Attachment B: Gate Closure Details

An explanation of the *gate closure* arrangements is provided below.

## Generator Offer Examples

Before gate closure



**Diagram 1 – Examples of Offers submissions before *gate closure***

A *Generator Offer* must be submitted by email prior to 1230 hours on the day ahead of the nominated trading day in which *gate closure* applies. If no *Generator Offer* is received by the System Controller for the nominated trading day, the commitment and dispatch process will automatically select that default *Generator Offer* as its replacement.

Whilst it would be expected that *Generator Offer* would be made relatively close to the time of *gate closure*, there is no earliest time specified for the transmission of the Offer.

More than one *Generator Offer* may be submitted prior to the *gate closure* time. Each of the *Generator Offers* must be sequentially incremented in their version number. At *gate closure*, System Control will only use the *Generator Offer* with the highest version number for the pre-dispatch process.

The latest *Generator Offer* to be received prior to *gate closure* will be treated as the active *Generator Offer* by System Control.

System Control will use the active *Generator Offer* in the pre-dispatch process.