



Energy
Market
Company

MARKET OPERATIONS MARKET MANUAL

Standing Offers, Offer Variations and
Standing Capability Data
(Chapter 6 Market Rules)

2011

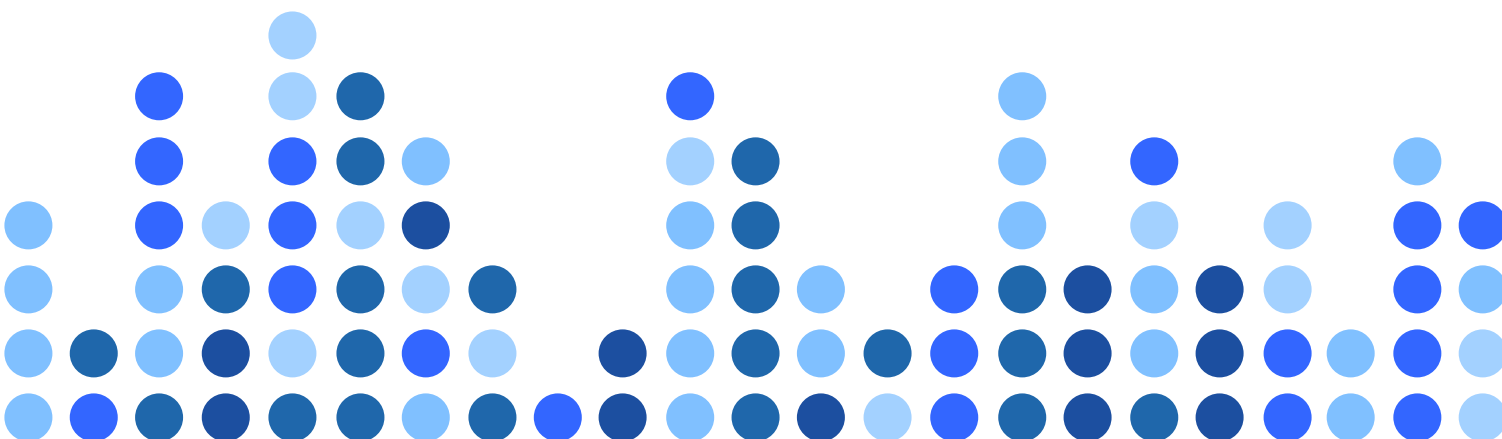


Table of Contents

1	Definitions	3
2	Standing offers	4
2.1	What is a “standing offer”?.....	4
2.2	Methods for submission of standing offers	4
2.3	Description of submission process for standing offers	5
2.4	Timeline for standing offer submission	8
2.5	Triggers for standing offer submission.....	9
2.6	Required form of a standing offer	9
2.7	Rules for validation of standing offers.....	12
2.8	Use of validated standing offers	18
2.9	Intertie submissions	18
3	Offers variations	19
3.1	What is an “offer variation”?.....	19
3.2	Method for submission of offer variations	19
3.3	Description of submission process of offer variations.....	19
3.4	Timeline for offer variation submission	22
3.5	Triggers for mandatory offer variation submission.....	22
3.6	Required form of an offer variation	23
3.7	Process for validation of an offer variation.....	26
3.8	Use of validated offer variations	27
3.9	Intertie submissions	27
4	Standing capability data	28
4.1	Process for submission of standing capability data	28
4.2	Timeline for standing capability data submission	31
4.3	Triggers for standing capability data submission.....	31
4.4	Required form of standing capability data	31
4.5	Forms used by the EMC to update standing capability data, network model data and system requirement data into the market clearing engine	33
5	Electronic Communications System	50
5.1	Protocols and procedures for the use of the electronic communications system used for the submission of standing offers and offer variations	50
5.2	Communication protocols for standing offers and offer variations when the electronic communications system has failed.....	50
6	Contact Details for EMC Helpdesk	51

1 **Definitions**

All terms in italics used in this *market manual* shall have the same meaning as ascribed to them under the Singapore Electricity Market Rules.

2 Standing offers

2.1 What is a “standing offer”?

A *standing offer* refers to an *energy offer*, *reserve offer* or *regulation offer* required to be submitted to the *EMC* in respect of a *generation registered facility* or a *reserve offer* required to be submitted to the *EMC* in respect of a *load registered facility*. Unless the context otherwise requires, references to “*standing offer*” in this *market manual* also include references to “*revised standing offer*”.

A *standing offer* –

- shall be submitted to the *EMC* by the *market participant’s dispatch coordinator* via the *electronic communications system* or secure email;
- shall contain *offers* that comply with the data format in Section 2.6, for each *dispatch period* in each of the seven days of the week;
- may be revised at any time by the *dispatch coordinator* by modifying *offers* comprising the *standing offer* for one or more *dispatch periods* within the seven days covered by the *standing offer*;
- shall, if accepted by the *EMC*, be stored by the *EMC* and be used in the scheduling process unless and until revised by the *dispatch coordinator* and accepted by the *EMC*;
- shall be used in the production of any *market outlook scenarios*, *pre-dispatch schedule scenarios*, *short-term schedules* or *real-time schedules* for those *dispatch periods* for which no valid *offer variations* are held by the *EMC*.

2.2 Methods for submission of standing offers

A *standing offer* may be submitted to the *EMC* in accordance with this *market manual* via:

- the *electronic communications system*, using PowerBid, WebOffer or any other application that is provided or permitted by the *EMC*; or
- secure email in a CSV file format; or
- any other means, in such file format, as may be permitted by the *EMC*.

The **NEMS¹ system** refers to the set of computer systems used by the *EMC* for the purpose of forecasting and scheduling *generation* and *load* in the *wholesale electricity markets*.

PowerBid is an application compatible with the NEMS system that *market participants* may use to create and submit an *offer* to the *EMC*.

¹ NEMS refers to National Electricity Market of Singapore

WebOffer² is a Web-based offer mechanism compatible with the EMC's NEMS system that *market participants* may use to create and submit an *offer* to the EMC.

CSV (comma delimited) file format shall be used for *intertie* submissions. *Market participants* can also use it to make *standing offer* submissions in the event of an *electronic communications system* failure.

2.3 Description of submission process for standing offers

2.3.1 Submission process for standing offers

A *dispatch coordinator* may submit a *standing offer* for a *registered facility* to the EMC via the *electronic communications system* using PowerBid or WebOffer or any other application that is provided or permitted by the EMC.

If a *dispatch coordinator* is unable to submit a *standing offer* to the EMC via the *electronic communications system* using PowerBid or WebOffer for any reason whatsoever, the *dispatch coordinator* shall notify the EMC Helpdesk via phone (see section 6 for contact details).

If the *dispatch coordinator* is able to successfully obtain any *standing offer* file generated by PowerBid in XML Format for the relevant *market participant*, the *dispatch coordinator* shall submit those files via secure email to the EMC. If the *dispatch coordinator* is not able to successfully obtain any *standing offer* file generated by PowerBid in XML Format for the relevant *market participant*, the *dispatch coordinator* shall submit the *standing offer* in the CSV (comma delimited) file format (as prescribed by the EMC³) via secure email to the EMC.

For WebOffer, the *dispatch coordinator* shall submit the *standing offer* in the CSV (comma delimited) file format (as prescribed by the EMC³) via secure email to the EMC in the event when the *electronic communications system* fails.

Upon receipt of the *standing offer*, the EMC shall timestamp and validate the *standing offer* and within five minutes of such receipt:

- confirm the receipt of the *standing offer*;
- notify the status of the *standing offer*; and
- give reasons for any rejections of the *standing offer*

via the *electronic communications system* to the *dispatch coordinator*.

A *dispatch coordinator* that does not receive the confirmation or notification shall immediately notify the EMC Helpdesk via phone. The EMC shall, where the problem lies with the EMC's *electronic communications system*, take steps to rectify the problem as soon as possible and inform the *dispatch coordinator* once the problem with the *electronic communications system* has been resolved.

² The advantages of WebOffer over PowerBid lie in at least two areas. Firstly, the MPs need not to configure SoniqMQ and PowerBid to interact with EMC's system; the Internet browser and network accessibility shall be the only requirements. Hence, it allows easy addition of new MPs. Secondly, it also allows MPs to view their offer submission that is submitted into NEMS system.

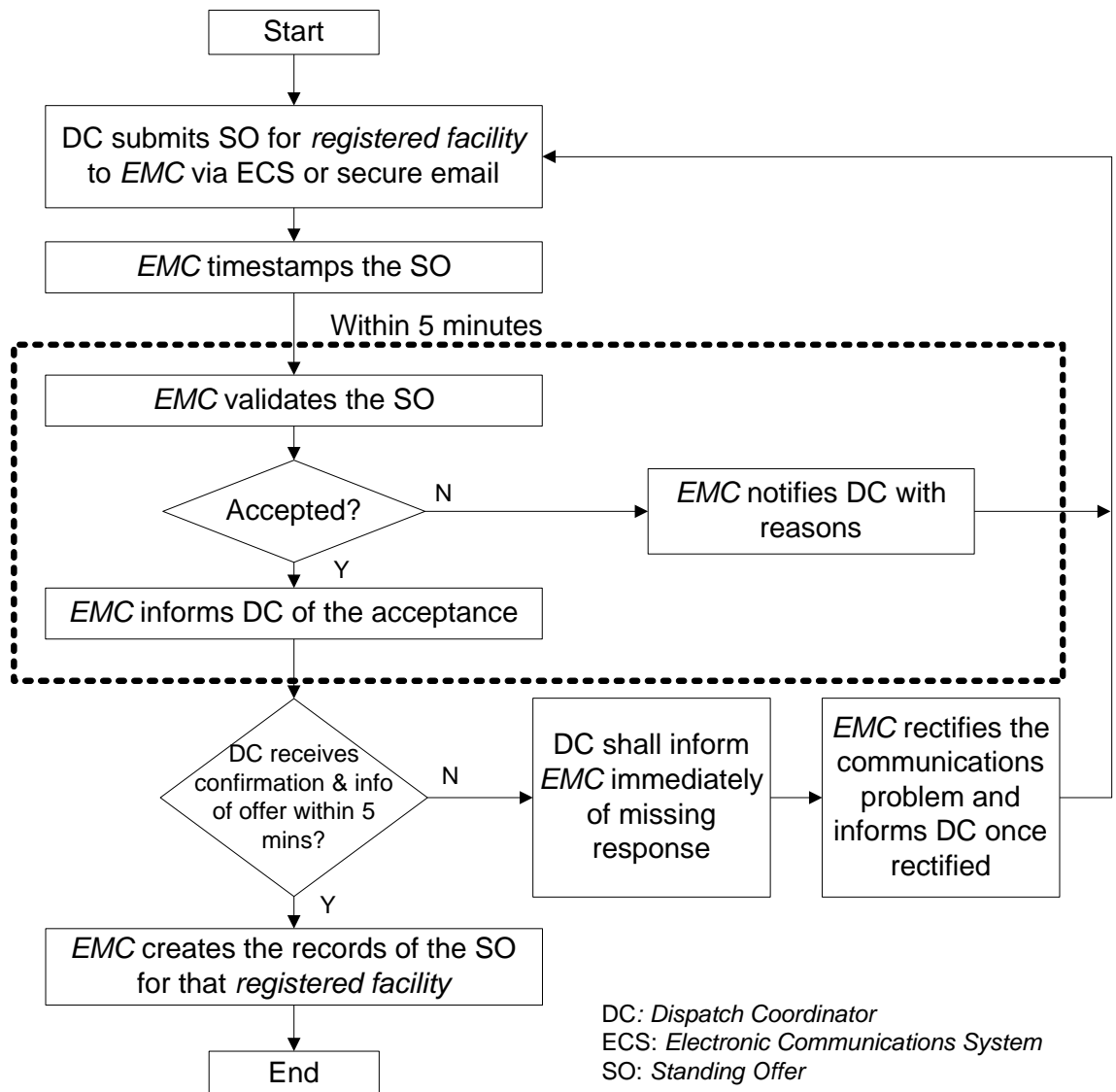
³ The prescribed CSV (comma delimited) file format is available from the EMC. See section 5.2 for more information on how to obtain the prescribed CSV (comma delimited) file format.

If the *EMC* permits a *market participant* to submit *standing offers* via the *electronic communications system* through the use of any alternative application (other than PowerBid and WebOffer), the submission of *standing offers* through the use of such alternative application must comply with all such requirements as the *EMC* may impose from time to time.

Submission of a revised *standing offer* must be made at least 65 minutes before the first *dispatch period* (gate closure) to which that revised *standing offer* is intended to apply. Any revised *standing offers* submitted after gate closure shall be reported to the *market surveillance and compliance panel*.

A flowchart outlining the submission process in respect of *standing offers* is set out in the following section.

2.3.2 Standing offer process flowchart



2.4 Timeline for standing offer submission

Day	Time of Day	Event	Period Covered	Frequency
Prior to facility registration	Any	First <i>standing offer</i> submitted	Until superseded	Once
Any time, until D	T-65 minutes ("gate closure")	Last time at which a valid revised <i>standing offer</i> may be submitted without being reported to the <i>market surveillance and compliance panel</i>	Until superseded	Ongoing/as required
Any time, until D	T-5 minutes	Last time at which a valid revised <i>standing offer</i> is guaranteed to be used in the <i>real-time scheduling</i> process but which shall be reported to the <i>market surveillance and compliance panel</i> if that <i>standing offer</i> was submitted after gate closure	Until superseded	Ongoing/as required

"D" refers to a trading day; and

"T" refers to the beginning of a dispatch period on trading day D.

2.5 Triggers for standing offer submission

A *standing offer* must be submitted prior to registration of a facility with the EMC.

A revised *standing offer* must be submitted when any of the following conditions arises:

- (1) The *registered facility* is not *synchronised* with the *transmission system* and there are no *offer variations*. The *dispatch coordinator* for that *registered facility* shall submit to the EMC a revised *standing offer* where all quantities *offered* for any of *energy*, *reserve* and *regulation* that the *registered facility* is registered to provide shall be zero. These *offer* quantities should be submitted for all *dispatch periods* until the earliest *dispatch period* when it would be possible for that *registered facility* to be *synchronised*.
- (2) The *standing capability data* associated with a *registered facility* is revised and approved. The *dispatch coordinator* for that *registered facility* shall, to the extent necessary for consistency with the revised and approved *standing capability data*, revise and re-submit to the EMC all *standing offers* that apply subsequent to the time at which the revised and approved *standing capability data* takes effect.

2.6 Required form of a standing offer

The *standing offer* submitted by a *market participant* must comply with the data formats described in this *market manual*. If a *standing offer* submission fails to comply with the data requirements, the EMC shall reject the submission and notify the *market participant* within five minutes of receipt of the *standing offer* submission.

There are three types of *standing offers*:

- *energy standing offer*
- *reserve standing offer*
- *regulation standing offer*.

There are three classes of *reserve standing offer*⁴:

- *primary reserve*;
- *secondary reserve*;
- *contingency reserve*.

The *reserve standing offer* may be submitted for either a *generation registered facility* or a *load registered facility*.

The following tables show the data format for *energy*, *reserve* and *regulation standing offers*.

⁴ As referred to in section A.2 of Appendix 5A of the *market rules*.

Table 1 Data format of energy standing offers

Item No	Field	Data Format	Remarks
1	Participant ⁵	Alphanumeric	
2	Type ⁶	Alphanumeric	The value must be: EGO ⁷
3	Unit	Alphanumeric	
4	Day	Mon to Sun	
5	Period	1 to 48	
6	Ramp Up	0 to 99999999999.9	This value is expressed in MW/minute.
7	Ramp Down	0 to 99999999999.9	This value is expressed in MW/minute.
8	Capacity ⁸	0 to 9999999999.9	This value is expressed in MW.
9	Band 1: Price	-9999999999.99 to 9999999999.99	<i>Energy standing offers require 10 price-quantity pairs⁹.</i>
10	Band 1: Quantity	0 to 9999999999.9	Prices are expressed in \$/MWh. Quantities are expressed in MW.

Table 2 Data format of all classes of reserve standing offers

⁵ This field is only applicable to WebOffer.

⁶ This field is only applicable to WebOffer.

⁷ "EGO" refers to *energy offer*.

⁸ "Capacity" refers to the maximum combined capacity referred to in section 5.2.2.5 of Chapter 6 of the *market rules*.

⁹ For *energy standing offers* for a *generation registered facility* that is an *embedded generation facility* (notwithstanding sections 5.2.4.3 and 5.2.6 of the *market rules*):

(i) subject to section 5.2.5 of Chapter 6 of the *market rules*, the quantity (if any) in the first *price-quantity pair* shall be the quantity of *electricity* that the *embedded generation facility* is intended to *generate* for the associated *load* of its *EGF group*; and

(ii) the price in the first *price-quantity pair* shall be set to equal 95% of CDC, where CDC shall be as specified in section J.2 of Appendix 6J of the *market rules*.

Item No	Field	Data Format	Remarks
1	Participant ¹⁰	Alphanumeric	
2	Type ¹¹	Alphanumeric	The value must be: RVO ¹²
3	Unit	Alphanumeric	
4	Day	Mon to Sun	
5	Period	1 to 48	
6	Reserve Proportion ¹³	0 to 99.999	<i>Dispatch coordinators of generation registered facilities must take special note of section 5.3.8 of Chapter 6 of the market rules when specifying the reserve proportion.</i>
7	Reserve Class ¹⁴	PRI / SEC / CON ¹⁵	
8	Band 1: Price	0 to 99999999999.99	<i>A reserve standing offer for any reserve class requires 1 to 5 price-quantity pairs. Prices are expressed in \$/MWh. Quantities are expressed in MW.</i>
9	Band 1: Quantity	0 to 9999999999.9	

¹⁰ This field is only applicable to WebOffer.

¹¹ This field is only applicable to WebOffer.

¹² "RVO" refers to *reserve offer*.

¹³ This field is not applicable for *standing offers* in respect of *load registered facilities*.

¹⁴ This field is only applicable to WebOffer.

¹⁵ PRI – primary *reserve*; SEC – secondary *reserve*; CON – contingency *reserve*.

Table 3 Data format of regulation standing offers

Item No	Field	Data Format	Remarks
1	Participant ¹⁶	Alphanumeric	
2	Type ¹⁷	Alphanumeric	The value must be: RGO ¹⁸
3	Unit	Alphanumeric	
4	Day	Mon to Sun	
5	Period	1 to 48	
6	Band 1: Price	0 to 99999999999.99	<i>A regulation standing offer requires 1 to 5 price-quantity pairs.</i>
7	Band 1: Quantity	0 to 9999999999.9	Prices are expressed in \$/MWh. Quantities are expressed in MW.

2.7 Rules for validation of standing offers

The validation of *standing offers* ensures that data submitted is (among other things) in the form required for the *market clearing engine*. Upon receiving *standing offers* in the manner prescribed in the provisions of this section 2 above, the NEMS system performs the following validation steps:

1. confirmation that the *standing offers* submission batch record is “well-formed”;
2. confirmation that each *standing offer* record is “well-formed”;
3. validation of the *standing offer* record against the *standing capability data*, the relevant price limits, the relevant quantity limits, and any other applicable requirements set out in the *market rules*.

A “well formed” *standing offer* submission batch record or *standing offer* record means that the record meets the applicable requirements specified in this *market manual*.

Market participants may use PowerBid or WebOffer to submit *standing offers*. PowerBid or WebOffer automatically generates the *standing offer* submission batch in the correct format and this shall be visible to the user.

A *market participant* who is using an alternative application or wishes to develop an alternative application through which a *standing offer* should be submitted via the *electronic communications system* should ensure that the submissions produced by their application meet the applicable requirements specified in this *market manual*.

In steps two and three above, the NEMS system shall validate each *standing offer* submission record according to each of rules one to twelve below as applicable.

¹⁶ This field is only applicable to WebOffer.

¹⁷ This field is only applicable to WebOffer.

¹⁸ “RGO” refers to *regulation offer*.

Rule 1: Validate that all relevant *price-quantity pairs* are populated i.e. not null

Example 1: Invalid

Quantity_1	Price_1	Quantity_2	Price_2 ...
50.0	10.00		

Example 2: Valid

Quantity_1	Price_1	Quantity_2	Price_2 ...
10.0	50.00	0.0	0.00

Rule 2: Validate that the ramp rates for *energy offers* are not greater than the relevant *standing capability data* maximum values

This rule only relates to *energy offers*. There are no ramp rate validations for *reserve offers* or *regulation offers*.

For an *energy offer*, the *energy* ramp-up and *energy* ramp-down values in the *energy offer* must be less than or equal to the maximum *energy* ramp-up and maximum *energy* ramp-down rates of the *registered facility* respectively.

Each of the *energy* ramp-up and *energy* ramp-down values in the *energy offer* must be expressed in MW/minute to one decimal place and must not be less than 0.0MW/minute.

Example 1: Invalid

Assume Unit A's *standing capability data* specifies that its maximum *energy* ramp-up rate is 10MW/minute and its maximum *energy* ramp-down rate is 15 MW/minute.

Unit A's *energy offer* would be invalid if:

Max_ramp_up	Max_ramp_down
15.0	10.0

Example 2: Valid

Assume Unit A's *standing capability data* specifies that its maximum *energy* ramp-up rate is 10MW/minute and its maximum *energy* ramp-down rate is 15 MW/minute.

Unit A's *energy offer* would be not be invalid if:

Max_ramp_up	Max_ramp_down
7.0	10.0

Rule 3: Validate that the total quantity *offered* does not exceed the *standing capability data* maximum values for *generation capacity*

- For an *energy offer*, the total quantity of *energy offered* for a *dispatch period* (i.e. the sum of all 10 quantity fields in the *energy offer*) must not exceed:
 - the *registered facility's* maximum *generation capacity* indicated in its *standing capability data* for that *dispatch period*; and
 - the *registered facility's* stated maximum combined capacity for *energy, reserve and regulation* for that *dispatch period*.

Example 1: Invalid

Unit A's maximum *generation capacity* indicated in its *standing capability data* is 130MW. Unit A's stated maximum combined capacity for *energy, reserve and regulation* is 80MW. Unit A's *energy offer* would be invalid if:

Quantity_1	Quantity_2	Quantity_3	...
50.0	40.0	40.0	

Example 2: Valid

Unit A's maximum *generation capacity* indicated in its *standing capability data* is 130MW. Unit A's stated maximum combined capacity for *energy, reserve and regulation* is 80MW. Unit A's *energy offer* would be valid if:

Quantity_1	Quantity_2	Quantity_3	...
50.0	10.0	10.0	

Rule 4: Validate that the total quantity *offered* does not exceed the *standing capability data* maximum values for *reserve and regulation capacity*

- For a *reserve offer*, the total quantity of *reserve offered* for a *reserve class* for a *dispatch period* (i.e. the sum of all 5 quantity fields in the *reserve offer*) must not exceed the *registered facility's* maximum *reserve capacity* for that *reserve class* indicated in its *standing capability data* for that *dispatch period*.
- For a *regulation offer*, the total quantity of *regulation offered* for a *dispatch period* (i.e. the sum of all 5 quantity fields in the *regulation offer*) must not exceed the *registered facility's* maximum *regulation capacity* indicated in its *standing capability data* for that *dispatch period*.

Example 1: Invalid

Unit A's maximum *reserve capacity* for a given *reserve class* indicated in its *standing capability data* is 10MW. Unit A's *reserve offer* for that *reserve class* would be invalid if:

Quantity_1	Quantity_2	Quantity_3	...

5.0	4.0	4.0	
Unit A's maximum <i>regulation</i> capacity indicated in its <i>standing capability data</i> is 10MW. Unit A's <i>regulation offer</i> would be invalid if:			
Quantity_1	Quantity_2	Quantity_3	...
5.0	4.0	4.0	
Example 2: Valid			
Unit A's maximum <i>reserve</i> capacity for a given <i>reserve class</i> indicated in its <i>standing capability data</i> is 10MW. Unit A's <i>reserve offer</i> for that <i>reserve class</i> would be valid if:			
Quantity_1	Quantity_2	Quantity_3	...
5.0	4.0	1.0	
Unit A's maximum <i>regulation</i> capacity indicated in its <i>standing capability data</i> is 10MW. Unit A's <i>regulation offer</i> would be valid if:			
Quantity_1	Quantity_2	Quantity_3	...
5.0	4.0	1.0	

Rule 5: Validate that prices are increasing or decreasing as appropriate	
<ul style="list-style-type: none"> For each <i>offer</i>, all <i>price-quantity pairs</i> must be stated in increasing order of price (i.e., the price in each <i>price-quantity pair</i> must be greater than the price in the preceding <i>price-quantity pair</i>). 	
Example 1: Invalid	
In Unit A's <i>offer</i> :	
Price_1	Price_2...
50.00	40.00
Example 2: Valid	
In Unit A's <i>offer</i> :	
Price_1	Price_2...
40.00	50.00

Rule 6: Validate that non-zero prices are attached to non-zero quantities

A *price-quantity pair* in an *offer* must specify a price value of zero if it has a quantity value of zero.

Example 1: Invalid

Quantity_1	Price_1	Quantity_2	Price_2...
50.0	100.00	0.0	50.00

Example 2: Valid

Quantity_1	Price_1	Quantity_2	Price_2...
50.0	100.00	0.0	0.00

The above provisions of this Rule 6 do not apply to the first *price-quantity pair* of an *energy offer* for a *generation registered facility* that is an *embedded generation facility*. The price in such first *price-quantity pair* shall be set to equal 95% of CDC, where CDC shall be as specified in section J.2 of Appendix 6J of the *market rules*.

Rule 7: Validate that quantity values are within market boundaries

All *offered* quantities must lie within the market boundaries.

- The quantity value of each *price-quantity pair* shall be validated against lower and upper limits for quantity. At present, the *market rules* only define a lower limit of zero for quantities. The upper limit is constrained by the maximum quantities that are validated in Rule 3 or Rule 4.
- The quantity value of each *price-quantity pair* shall be expressed up to one decimal place only, in accordance with the *market rules*.

Rule 8: Validate that price values are within market boundaries

All *offered* prices must be within the market boundaries.

- For *energy offers*, the upper and lower limits on *energy prices* are EnergyPriceMax and EnergyPriceMin respectively.
- For *reserve offers*, the respective upper limit on *reserve prices* for each reserve class is as follows: (1) for primary *reserve* – Res1PriceMax; (2) for secondary *reserve* – Res2PriceMax; and (3) for contingency *reserve* – Res3PriceMax. The lower limit on *reserve prices* is zero.
- For *regulation offers*, the upper limit on *regulation prices* is RegPriceMax. The lower limit on *regulation prices* is zero.

The above provisions of this Rule 8 does not apply to the first *price-quantity pair* of an *energy offer* for a *generation registered facility* that is an *embedded generation facility*. The price in such first *price-quantity pair* shall be set to equal 95% of CDC, where CDC shall be as specified in section J.2 of Appendix 6J of

the *market rules*.

Rule 9: Validate that the *reserve class* is correctly specified

- For *reserve offers*, the *reserve class* should be specified accordingly as per item 7 in table 2.

Rule 10: Validate the facility and its eligibility for the type (and class) of service referred to in the *offer* submitted

This rule concerns the validation of an *offer* made for a facility against that facility's registration and its *standing capability data*. Two main checks are performed. The first check ensures that the facility referenced in the offer submission is a *registered facility*. The second check ensures that the facility is registered to provide the type of service referenced in the *offer* submission (*energy*, *reserve* or *regulation*) and, in the case of *reserve offer*, the *reserve class* referenced in the *offer* submission.

Rule 11: Validate that the *reserve proportion* is within the *standing capability data* limits

The *reserve proportion* must be stated for *reserve offers* made for each *generation registered facility*. The *reserve proportion* stated in each *reserve offer* must be within the *standing capability data* limits of the *generation registered facility*.

For *reserve offers* made for a *generation registered facility*, the *reserve proportion* must not be less than zero and must not exceed the *reserve proportion* defined in the *standing capability data* of the *generation registered facility*.

This Rule 11 does not apply to *reserve offers* made for *load registered facilities*.

Rule 12: Validate that the *offer* submission is not a duplicate of the last submitted valid *standing offer*

The *offer* submission should not be a duplicate of the last submitted valid *standing offer*. This could occur where the participant erroneously creates and submits the same submission more than once.

2.8 Use of validated standing offers

Once a *standing offer* or revised *standing offer* has been successfully validated, it shall be used in the production of *market schedules* for those *dispatch periods* where no valid *offer variations* are held by the *EMC*. If however there is a valid *offer variation* applicable for the given *dispatch period*, then such *offer variation* shall be used instead. The foregoing is however subject to the following exceptions:

(a) if the *offer* for a *dispatch period* was accepted as valid less than five minutes before the production of a *market schedule* containing that *dispatch period*, that *offer* is not guaranteed to be used by the *EMC* in the production of that *market schedule*; and

(b) if an *offer variation* for a *dispatch period* was submitted after that *dispatch period* had begun, the *EMC* shall not use that *offer variation* in the production of any *market schedule* containing that *dispatch period*.

2.9 Intertie submissions

The *intertie* submissions shall be taken as zero MW unless the *EMC* is otherwise informed by the *PSO*. The *EMC* requires two *business days* notice to incorporate any *intertie* submissions that is provided by the *PSO*. The *EMC* shall confirm receipt and update these into the *market clearing engine* as soon as practical.

3 Offers variations

3.1 What is an “offer variation”?

Offer variation refers to an *energy offer*, a *reserve offer* or a *regulation offer* submitted to the *EMC* in respect of a *generation registered facility* or a *reserve offer* submitted to the *EMC* in respect of a *load registered facility* that varies the terms of a previous *energy offer*, *reserve offer* or *regulation offer*, as the case may be, submitted to the *EMC* in respect of that *generation registered facility* or *load registered facility* for the same *dispatch period*.

The *offer variation* is used as a means to make an *offer* which is different from the current *standing offer*. The *offer variation* applies to a specific *dispatch period* on a specific date only, without affecting the applicability of the existing *standing order* for other dates or other *dispatch periods*.

3.2 Method for submission of offer variations

An *offer variation* may be submitted to the *EMC* in accordance with this *market manual* via:

- the *electronic communications system*, using PowerBid, WebOffer or any other application that is provided or permitted by the *EMC*; or
- secure email in a CSV file format; or
- any other means, in such file format, as may be permitted by the *EMC*.

3.3 Description of submission process of offer variations

3.3.1 Submission process for offer variations

A *dispatch coordinator* may submit an *offer variation* for a *registered facility* to the *EMC* via the *electronic communications system* using PowerBid or WebOffer or any other application that is provided or permitted by the *EMC*.

If a *dispatch coordinator* is unable to submit an *offer variation* to the *EMC* via the *electronic communications system* using PowerBid or WebOffer for any reason whatsoever, the *dispatch coordinator* shall notify the *EMC* Helpdesk via phone (see section 6 for contact details).

If the *dispatch coordinator* is able to successfully obtain any *offer variation* file generated by PowerBid in XML Format for the relevant *market participant*, the *dispatch coordinator* shall submit those files via secure email to the *EMC*. If the *dispatch coordinator* is not able to successfully obtain any *offer variation* file generated by PowerBid in XML Format for the relevant *market participant*, the *dispatch coordinator* shall submit the *offer variation* in the CSV (comma delimited) file format (as prescribed by the *EMC*¹⁹) via secure email to the *EMC*.

¹⁹ The prescribed CSV (comma delimited) file format is available from the *EMC*. See section 5.2 for more information on how to obtain the prescribed CSV (comma delimited) file format.

For WebOffer, the *dispatch coordinator* shall submit the *standing offer* in the CSV (comma delimited) file format (as prescribed by the *EMC*²⁰) via secure email to the *EMC* in the event when the *electronic communications system* fails

Upon receipt of the *offer variation*, the *EMC* shall timestamp and validate the *offer variation* and within five minutes of such receipt:

- confirm the receipt of the *offer variation*;
- notify the status of the *offer variation*; and
- give reasons for any rejections of the *offer variation*,

via the *electronic communications system* to the *dispatch coordinator*.

A *dispatch coordinator* that does not receive the confirmation or notification shall immediately notify the *EMC* Helpdesk via phone. The *EMC* shall, where the problem lies with the *EMC*'s *electronic communications system*, take steps to rectify the problem as soon as possible and inform the *dispatch coordinator* once the problem with the *electronic communications system* has been resolved.

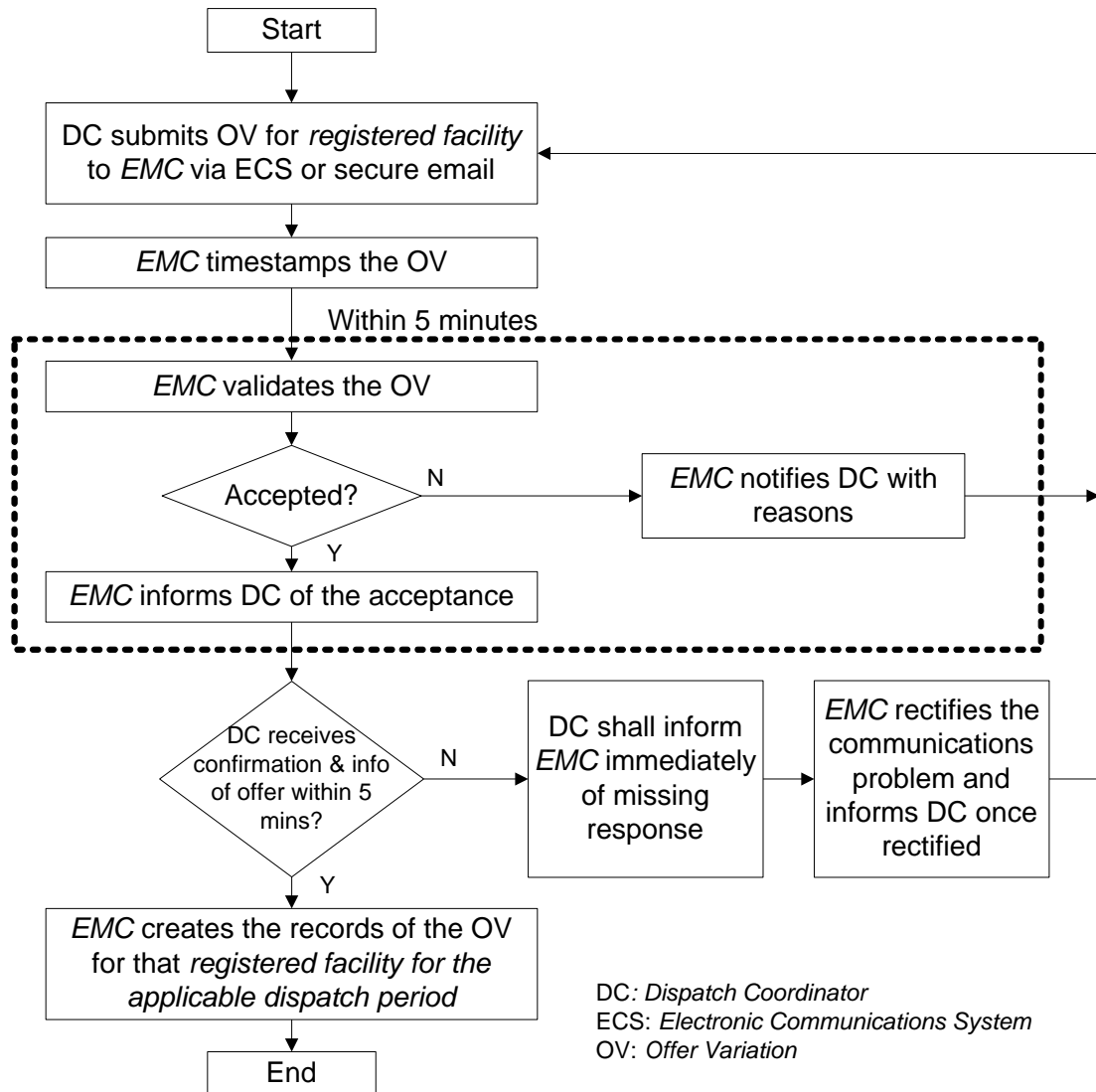
Submission of an *offer variation* must be made at least 65 minutes before the *dispatch period* (gate closure) to which that *offer variation* is intended to apply. Any *offer variation* submitted after gate closure shall be reported to the *market surveillance and compliance panel*.

If the *EMC* permits a *market participant* to submit *offer variations* via the *electronic communications system* through the use of any alternative application (other than PowerBid and WebOffer), the submission of *offer variations* through the use of such alternative application must comply with all such requirements as the *EMC* may impose from time to time.

A flowchart outlining the submission process in respect of *offer variation* is set out in the following section.

²⁰ The prescribed CSV (comma delimited) file format is available from the *EMC*. See section 5.2 for more information on how to obtain the prescribed CSV (comma delimited) file format.

3.3.2 Offer variation submission process flowchart



3.4 Timeline for offer variation submission

Day	Time of Day	Event	Period Covered	Frequency
D – 8 days	09:00	The <i>EMC</i> begins accepting <i>offer variations</i> for <i>dispatch periods</i> during <i>trading day D</i>	D	Ongoing
D-8 days to D	From 09:00 on D-8, within 5 minutes of receipt	Notification of acceptance/rejection of <i>offer variation</i>	D	Ongoing
D	T-65 minutes (“gate closure”)	Last time at which an <i>offer variation</i> may be submitted without being reported to the <i>market surveillance and compliance panel</i>	T + 30 minutes	Ongoing
D	T-5 minutes	Last time at which an <i>offer variation</i> is guaranteed to be used in the <i>real-time scheduling</i> process but which shall be reported to the <i>market surveillance and compliance panel</i> if the <i>offer variation</i> was submitted after gate closure	T + 30 minutes	Ongoing

“D” refers to a trading day; and

“T” refers to the beginning of a dispatch period on trading day D.

3.5 Triggers for mandatory offer variation submission

Offer variation(s) must be submitted by the *dispatch coordinator* of a *registered facility* to the *EMC* when any of the following conditions arise -

- (1) For a *dispatch period* in the current *market outlook horizon*, if the quantity currently *offered* in a valid *offer* for a *registered facility* exceeds the quantity that the *registered facility’s dispatch coordinator* reasonably expects to be available from the *registered facility* by more than the greater of:

- 10 MW; or
- 5 percent of the quantity currently *offered*,

an *offer variation* must be immediately submitted by the *dispatch coordinator* of the *registered facility* to the *EMC* for the above *dispatch period*.

In the case where a *generation registered facility* has been derated, the *dispatch coordinator* must immediately submit an *offer variation* reflecting the reduced capacity of the facility to the *EMC*. It is essential to note that in such a case it is not necessary for the maximum *generation capacity* and maximum combined *generation capacity* and

reserve capacity in the standing capability data of the generation registered facility to be revised.

- (2) For each *dispatch period* that the *registered facility* is not *synchronised* with the *transmission system* – until the earliest *dispatch period* in which it would be possible for the *registered facility* to be *synchronised*.

In such a case, if there are existing *offer variations* for any such *dispatch periods*, the *dispatch coordinator* for that *registered facility* shall submit to the *EMC* an *offer variation* for each such *dispatch period* so that all *offered quantities for energy, reserve and regulation* are zero.

- (3) The *dispatch coordinator* for that *registered facility* shall, to the extent necessary for consistency with the revised *standing capability data*, revise and re-submit to the *EMC* a revised standing offer (as per section 2.5) and all *offer variations* that apply subsequent to the time at which the revision to the *standing capability data* applies.

3.6 Required form of an offer variation

The *offer variation* data format is very similar to the data format for a *standing offer*. There are also three *offer variation* types, that is, *energy, reserve and regulation offer variations*. The difference between a *standing offer* and an *offer variation* is that the latter shall only be applied to a specific *dispatch period*. The “day” field in the *standing offer* submission is therefore replaced by a “date” field in the case of an *offer variation*.

The data formats for an *offer variation* for each of *energy, reserve and regulation* are set out in the tables below.

Table 4 Data format of energy offer variation

Item No	Field	Data Format	Remarks
1	Participant ²¹	Alphanumeric	
2	Type ²²	Alphanumeric	The value must be: EGO ²³
3	Unit	Alphanumeric	
4	Date	dd/mm/yyyy	
5	Period	1 to 48	
6	Ramp Up	0 to 999999999999.9	This value is expressed in MW/minute.
7	Ramp Down	0 to 999999999999.9	This value is expressed in MW/minute.
8	Capacity ²⁴	0 to 9999999999.9	This value is expressed in MW.
9	Band 1: Price	-99999999999.99 to 99999999999.99	<i>An energy offer variation requires 1 to 10 price-quantity pairs²⁵.</i>
10	Band 1: Quantity	0 to 9999999999.9	Prices are expressed in \$/MWh. Quantities are expressed in MW.

²¹ This field is only applicable to WebOffer.

²² This field is only applicable to WebOffer.

²³ "EGO" refers to *energy offer*.

²⁴ "Capacity" refers to the maximum combined capacity referred to in section 5.2.2.5 of Chapter 6 of the *market rules*.

²⁵ For an *energy offer variation* for a *generation registered facility* that is an *embedded generation facility* (notwithstanding sections 5.2.4.3 and 5.2.6 of the *market rules*):

(i) subject to section 5.2.5 of Chapter 6 of the *market rules*, the quantity (if any) in the first *price-quantity pair* shall be the quantity of *electricity* that the *embedded generation facility* is intended to *generate* for the associated *load* of its *EGF group*. and

(ii) the price in the first *price-quantity pair* shall be set to equal 95% of CDC, where CDC shall be as specified in section J.2 of Appendix 6J of the *market rules*.

Table 5 Data format of all classes of reserve offer variation

Item No	Field	Data Format	Remarks
1	Participant ²⁶	Alphanumeric	
2	Type ²⁷	Alphanumeric	The value must be: RVO ²⁸
3	Unit	Alphanumeric	
4	Date	dd/mm/yyyy	
5	Period	1 to 48	
6	Reserve Proportion ²⁹	0 to 99.999	<i>Dispatch coordinators of generation registered facilities must take special note of section 5.3.8 of Chapter 6 of the market rules when specifying the reserve proportion.</i>
7	Reserve Class ³⁰	PRI / SEC / CON ³¹	
8	Band 1: Price	0 to 99999999999.99	<i>A reserve offer variation for any reserve class requires 1 to 5 price-quantity bands. Prices are expressed in \$/MWh. Quantities are expressed in MW.</i>
9	Band 1: Quantity	0 to 9999999999.9	

²⁶ This field is only applicable to WebOffer.

²⁷ This field is only applicable to WebOffer.

²⁸ "RVO" refers to *reserve offer*.

²⁹ For Load Registered Facility, this field is not applicable.

³⁰ This field is only applicable to WebOffer.

³¹ PRI – primary *reserve*; SEC – secondary *reserve*; CON – contingency *reserve*.

Table 6 Data format of regulation offer variation

Item No	Field	Data Format	Remarks
1	Participant ³²	Alphanumeric	
2	Type ³³	Alphanumeric	The value must be: RGO ³⁴
3	Unit	Alphanumeric	
4	Date	dd/mm/yyyy	
5	Period	1 to 48	
6	Quantity 1	0 to 999999999.9	A regulation offer variation requires 1 to 5 price-quantity pairs. Prices are expressed in \$/MWh. Quantities are expressed in MW.
7	Price 1	0 to 999999999.99	

3.7 Process for validation of an offer variation

All the validation rules mentioned in Section 2.7 shall also apply to the validation of an *offer variation*. However, there shall be an additional rule thirteen for validation for an *offer variation*, which is shown below.

Rule 13: Validate that the submission date is within the valid timeframe

A submission of an *offer variation* after the start of a *dispatch period* to which the *offer variation* applies is not permitted. In practice this rule prevents *market participants* from submitting an *offer variation* after the submission cut-off time for the current *trading period* or any prior *trading period*.

The submission date must be greater than or equal to the current date.

If the submission date is the current date the submission period must not start prior to the current time less the submission cut-off time.

If the period is the first period the current time must be prior to midnight less the submission cut-off time.

³² This field is only applicable to WebOffer.

³³ This field is only applicable to WebOffer.

³⁴ "RGO" refers to *regulation offer*.

3.8 Use of validated offer variations

The use of validated *offer variations* by the *EMC* in the production of a *market schedule* is described in Section 2.8 above.

3.9 Intertie submissions

The *intertie* submissions shall be taken as zero MW unless the *EMC* is otherwise informed by the *PSO*. The *EMC* requires two *business days* notice to incorporate any *intertie* submissions that is provided by the *PSO*. The *EMC* shall confirm receipt and update these into the *market clearing engine* as soon as practical.

4 Standing capability data

4.1 Process for submission of standing capability data

4.1.1 Initial standing capability data submission

When a *market participant* applies to register a facility under section 5 of Chapter 2, it shall at the same time submit that facility's initial *standing capability data* to the *PSO* for approval.

If the initial *standing capability data* is approved by the *PSO*, the *PSO* shall forward the *standing capability data* to the *EMC*. Upon receipt of the initial *standing capability data*, the *EMC* shall confirm its receipt to both the *PSO* and the *market participant*. This confirmation of receipt shall be by way of email or facsimile transmission and shall be given as soon as practical.

If the *market participant* or the *dispatch coordinator* (as the case may be) does not receive such confirmation of receipt from the *EMC*, the *market participant* or the *dispatch coordinator* (as the case may be) shall immediately inform the *EMC* of the non-receipt by way of email or facsimile transmission.

If the *PSO* rejects the initial *standing capability data*, the *PSO* shall notify the *market participant* of the *PSO*'s rejection and the reasons for its rejection as soon as practical.

4.1.2 Revised standing capability data submission

If there is a change in the physical capability of a *registered facility*, its *dispatch coordinator* shall submit revised *standing capability data* as necessary to reflect the change, to the *PSO* for approval.

If the *PSO* requires a *dispatch coordinator* to provide revised *standing capability data* under section 9.6.5 of Chapter 5, it shall do so within the time specified by the *PSO*.

If the revised *standing capability data* is approved by the *PSO*, the *PSO* shall forward the *standing capability data* to the *EMC*. Upon receipt of the revised *standing capability data*, the *EMC* shall confirm its receipt to both the *PSO* and the *dispatch coordinator*. This confirmation of receipt shall be by way of email or facsimile transmission and shall be given as soon as practical.

If the *PSO* rejects the revised *standing capability data*, the *PSO* shall notify the *dispatch coordinator* of the *PSO*'s rejection and the reasons for its rejection.

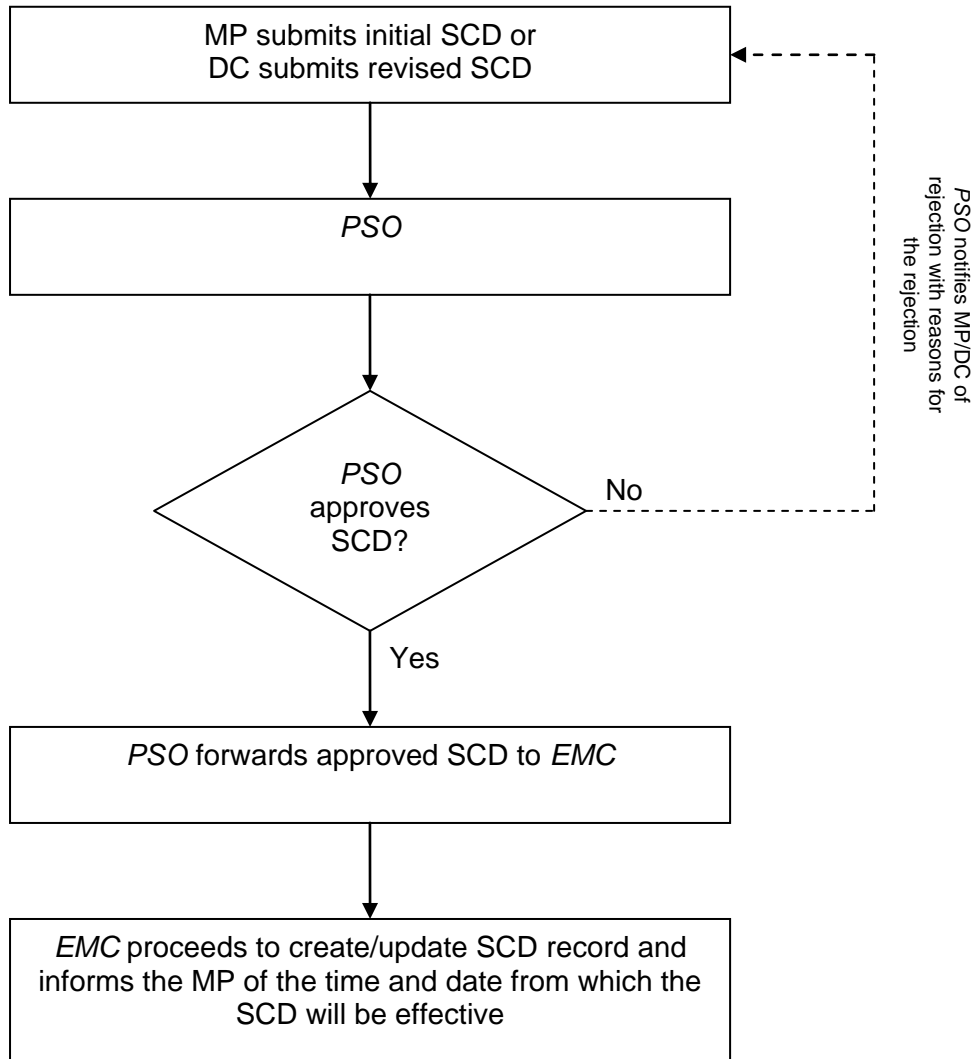
4.1.3 Effective use of initial and revised standing capability data in the market clearing engine

The *EMC* shall, as soon as practicable and upon receiving any approved *standing capability data* in respect of a facility from the *PSO*, create or update its records of that facility's *standing capability data* to be used by the

market clearing engine. Typically, it takes ten *business days*³⁵ for approved initial *standing capability data* to be updated into the NEMS system upon the *EMC*'s receipt of the same from the *PSO*. The *EMC* shall notify the applicable *market participant* of the date and time on which the revised *standing capability data* shall be effective.

³⁵ In the event where receipt of approved data is incomplete or is not in the required form, the date for effective use of the *standing capability data* shall be delayed. Hence, market participants are advised to ensure that the *standing capability data* submitted uses the latest business forms and the data provided is complete, clear and correct.

4.1.4 Submission process flowchart for initial and revised standing capability data



MP: Market Participant
DC: Dispatch Coordinator
SCD: Standing Capability Data

4.2 Timeline for standing capability data submission

Day	Time of Day	Event	Period Covered	Frequency
Prior to facility registration	At the same time as the submission of an application for registration of the facility is submitted to the EMC	Provide initial <i>standing capability data</i> where such data shall have been provided to the <i>PSO</i> by a <i>market participant</i> , and approved by the <i>PSO</i> , in accordance with the <i>system operation manual</i> .	From first day of participation and until superseded.	Once
Before D, trading day	Any time	Provide revised <i>standing capability data</i> where such data shall have been provided to the <i>PSO</i> by a <i>dispatch coordinator</i> , and approved by the <i>PSO</i> , in accordance with the <i>system operation manual</i> .	From day D until superseded	As required

“D” refers to a trading day

4.3 Triggers for standing capability data submission

Initial *standing capability data* must be submitted to the *PSO* at the same time as when the application for registration of a facility is submitted to the *EMC*. The *PSO* will then approve such data and pass it on to the *EMC*.

4.4 Required form of standing capability data

The *standing capability data* is derived from the following data sources:

SNo	Type of <i>standing capability data</i>	Data Sources
1	Facilities Data	Facility registration forms <i>System Operation Manual (SOM)</i>
2	Network Model Data	<i>Transmission Licensee</i> PSO - Energy Management System (EMS) <i>System Operation Manual (SOM)</i>
3	System Requirement Data	<i>System Operation Manual (SOM)</i> Agreed PSO – EMC forms <i>Market rules</i>

All registered facilities and transmission licensees shall submit their *standing capability data* to the PSO via the facility registration forms found in the *system operation manual*. The data from these forms are mapped to the forms used by the EMC to enter data into the *market clearing engine* shown below.

4.5 Forms used by the EMC to update standing capability data, network model data and system requirement data into the market clearing engine

4.5.1 Ancillary service provider (reserve) form

Ancillary Provider Details		
Field Names on Data Admin Screen	DATA	Unit
ANCILLARY TYPE		N/A
FACILITY		N/A
ANCILLARY GROUP		N/A
MAX. RATING		MW
RSRV GENERATION MAX		MW
RESPONSE DELAY		Sec
RSV. PROPORTION		%
LOW LOAD		N/A
LOW LOAD RESERVE		N/A
MEDIUM LOAD RESERVE		N/A
HIGH LOAD RESERVE		N/A

4.5.2 Ancillary service provider (regulation) form

Ancillary Provider Details		
Field Names on Data Admin Screen	DATA	Unit
ANCILLARY TYPE		N/A
FACILITY		N/A
ANCILLARY GROUP		N/A
MAX. RATING		MW
REGULATION MIN		MW
REGULATION MAX		MW

4.5.3 Ancillary service form

Ancillary Service Details		
Field Names on Data Admin Screen	DATA	Unit
ANCILLARY TYPE		N/A
NAME		N/A
RESERVE CLASS CODE		N/A
DESCRIPTION		N/A
MINIMUM RISK		MW
RESPONSE PERIOD		Sec
MAXIMUM PRICE		\$
PENALTY		N/A
MAXIMUM IL PROPORTION		%

4.5.4 Ancillary zone form³⁶

Ancillary Zone Details		
Field Names on Data Admin Screen		
RESERVE CLASS		N/A
ANCILLARY ZONE		N/A
ANCILLARY ZONE LIMIT		MW

³⁶ For generators, this form is not applicable

4.5.5 Branch (Line) form

Branch Details		
Field Names on Data Admin Screen	DATA	Unit
B1		N/A
B2		N/A
B3		N/A
BRANCH TYPE	Line/ Transformer	N/A
RESISTANCE		p.u.
REACTANCE		p.u.
FIXED LOSS		MW
MAX. RATING FORWARD		MVA
MAX. RATING REVERSE		MVA
REDUND. FACTOR FWD	1	N/A
REDUND. FACTOR REV.	1	N/A
THERMAL RATING FWD.		MVA
THERMAL RATING REV.		MVA
PENALTY		N/A
CONNECTOR FROM		N/A
CONNECTOR TO		N/A
BUS FROM		N/A
BUS TO		N/A

4.5.6 Branch (Transformer) form

Branch Details		
Field Names on Data Admin Screen	DATA	Unit
B1		N/A
B2		N/A
B3		N/A
BRANCH TYPE	Line/ Transformer	N/A
RESISTANCE		p.u.
REACTANCE		p.u.
FIXED LOSS		MW
MAX. RATING FORWARD		MVA
MAX. RATING REVERSE		MVA
REDUND. FACTOR FWD	1	N/A
REDUND. FACTOR REV.	1	N/A
THERMAL RATING FWD.		MVA
THERMAL RATING REV.		MVA
PENALTY		N/A
CONNECTOR FROM		N/A
CONNECTOR TO		N/A
BUS FROM		N/A
BUS TO		N/A
PST INDICATOR		N/A

4.5.7 Bus form

Bus Details		
Field Names on Data Admin Screen	DATA	Unit
B1		N/A
B2		N/A
B3		N/A
REFERENCE NODE PRIORITY		N/A
FICTIONAL IND		N/A
EXCESS PENALTY		N/A
DEFICIT PENALTY		N/A

4.5.8 Connector form

Connector Details		
Field Names on Data Admin Screen	DATA	Unit
B1		N/A
B2		N/A
B3		N/A

4.5.9 Generation Registered Facility form

Facility Details		
Field Names on Data Admin Screen	DATA	Unit
FACILITY TYPE	UNIT	N/A
UNIT TYPE	REGISTERED	N/A
B1		N/A
B2		N/A
B3		N/A
FACILITY NAME		N/A
INTERTIE INDICATOR	Y / N	N/A
NODE NAME		N/A
MAXIMUM RATING		MW
NORMAL RAMP DOWN		MW/m
REGULAT. RAMP DOWN		MW/m
NORMAL RAMP UP		MW/m
REGULATED RAMP UP		MW/m
PRIMARY RISK	Y / N	N/A
SECONDARY RISK	Y / N	N/A
FAILURE PROBABILITY		%
DAMPING GENERATOR	Y / N	N/A
PENALTY NAME		N/A

4.5.10 Generation Settlement Facility form

Facility Details		
Field Names on Data Admin Screen	DATA	Unit
FACILITY TYPE	UNIT	N/A
UNIT TYPE	SETTLEMENT	N/A
B1		N/A
B2		N/A
B3		N/A
FACILITY NAME		N/A
NODE NAME		N/A
MAXIMUM RATING		MW
NORMAL RAMP DOWN		MW/m
REGULAT. RAMP DOWN		MW/m
NORMAL RAMP UP		MW/m
REGULATED RAMP UP		MW/m
PRIMARY RISK †	Y / N	N/A
SECONDARY RISK †	Y / N	N/A
FAILURE PROBABILITY		%
DAMPING GENERATOR	Y / N	N/A

4.5.11 Dispatch Load registered facility form

Facility Details		
Field Names on Data Admin Screen	DATA	Unit
FACILITY TYPE	Dispatch Load ³⁷	N/A
B1		N/A
B2		N/A
B3		N/A
INTERTIE INDICATOR	Y/N	N/A.
NODE NAME		
MAXIMUM RATING		MVA
IL RECORDER ID		

4.5.12 Offtake Load registered facility form

Facility Details		
Field Names on Data Admin Screen	DATA	Unit
FACILITY TYPE	Offtake load	N/A
B1		N/A
B2		N/A
B3		N/A
SETTLEMENT ACCT.		N/A.
MAXIMUM RATING		MVA
UNIT TRANSFORMER INDICATOR	Y/N	N/A

³⁷ Note that Interruptible Load (IL) belongs to Dispatch Load (DPL) facility type.

4.5.13 Node form

Node Details		
Field Names on Data Admin Screen	DATA	Unit
NODE NAME		N/A
NODE TYPE	GPOS/ LPOS/ IPOS/ DPOS	N/A
SETTLEMENT ACCT.		N/A

4.5.14 Participant and Accounts form – Embedded Generator

Participant Details		
Field Names on Data Admin Screen	DATA	Unit
PARTICIPANT NAME		N/A
LICENCE NUMBER		N/A
PRUDENTIAL LIMIT		\$
Settlement Accounts		
ACCOUNT NAME		N/A
ACCOUNT ID		N/A
PARTICIPANT TYPE	Embedded Generator	N/A
UNDER A RETAILER	Y/N	N/A
RETAILER VALUE		N/A
NET SETTLEMENT		N/A
PRICE NEUTRALISATION		N/A

4.5.15 Participant and Accounts form – All other genres

Participant Details		
Field Names on Data Admin Screen	DATA	Unit
PARTICIPANT NAME		N/A
LICENCE NUMBER		N/A
PRUDENTIAL LIMIT		\$
Settlement Accounts		
ACCOUNT NAME		N/A
ACCOUNT ID		N/A
PARTICIPANT TYPE	Broker/ EMC Internal Account/ Generator/ Interruptible Load/ MSSL/ PSO/ PowerGrid/ Retailer	N/A

4.5.16 Participation factors form

Day Types		
Field Names on Data Admin Screen	DATA	Unit
NAME		N/A
Custom Day Calendar		
SCHEDULED DATE		Date

4.5.17 Penalty and tranches form

Penalty Details		
Field Names on Data Admin Screen	DATA	Unit
PENALTY NAME		N/A
PENALTY TYPE	Ancillary Service/ Bus Deficit/ Bus Excess/ Branch/ Facility/ Security Constraint	N/A
Penalty Tranches		
TRANCHE		N/A
QUANTITY		MW
AMOUNT		\$

4.5.18 Reserve group and effectiveness form

Reserve Group Details		
Field Names on Data Admin Screen	DATA	Unit
RESERVE CLASS		N/A
RESERVE GROUP		N/A
ANCILLARY TYPE		N/A
Group Effectiveness		
QUANTITY		MW
EFFECTIVENESS		N/A

4.5.19 SCADA unit form - normal facility

Scada Unit Details		
Field Names on Data Admin Screen	DATA	Unit
UNIT TYPE	Independent	N/A
B1		N/A
B2		N/A
B3		N/A
MAPPING	R	N/A
MNN BUS		N/A
ALT BUS		N/A
DEFAULT BRANCH		N/A
UNIT TRANSFORMER MAPPING TYPE	NM/ DM	N/A
FACILITY		N/A

4.5.20 SCADA unit form - CCP - GT

Scada Unit Details		
Field Names on Data Admin Screen	DATA	Unit
UNIT TYPE	Independent	N/A
B1		N/A
B2		N/A
B3		N/A
MAPPING	I	N/A
MNN BUS		N/A
ALT BUS		
DEFAULT BRANCH		
PPF		N/A
UNIT TRANSFORMER MAPPING	DM/ NM	N/A
UNIT TRANSFORMER		N/A
DEPENDENT UNIT		N/A
FACILITY		N/A

4.5.21 SCADA unit form - CCP - ST

Scada Unit Details		
Field Names on Data Admin Screen	DATA	Unit
UNIT TYPE	Dependent	N/A
B1		N/A
B2		N/A
B3		N/A
MAPPING	I	N/A
MNN BUS		N/A
ALT BUS		N/A
DEFAULT BRANCH		N/A
UNIT TRANSFORMER MAPPING TYPE	DM/ NM	N/A
UNIT TRANSFORMER		N/A

4.5.22 Control parameters form

Control Parameters		
Field Names on Data Admin Screen	DATA	Unit
8 SECOND RISK ADJUSTMENT FACTOR – INTERTIE ON		N/A
30 SECOND RISK ADJUSTMENT FACTOR – INTERTIE ON		N/A
10 MINUTE RISK ADJUSTMENT FACTOR – INTERTIE ON		N/A
8 SECOND FREQUENCY DEVIATION -INTERTIE OFF		N/A
30 SECOND FREQUENCY DEVIATION -INTERTIE OFF		N/A
10 MINUTE FREQUENCY DEVIATION -INTERTIE OFF		N/A
8 SECOND ESTIMATED LOAD DAMPING		N/A
30 SECOND ESTIMATED LOAD DAMPING		N/A
10 MINUTE ESTIMATED LOAD DAMPING		N/A
8 SECOND ESTIMATED GT OUTPUT DAMPING		N/A
30 SECOND ESTIMATED GT OUTPUT DAMPING		N/A
10 MINUTE ESTIMATED GT OUTPUT DAMPING		N/A
ESTIMATED INTERTIE CONTRIBUTION		N/A
DPR AUTOMATIC RUN FLAG		N/A
DAR AUTOMATIC RUN FLAG		N/A
WAR AUTOMATIC RUN FLAG		N/A
DPR AUTOMATIC APPROVAL FLAG		N/A
DAR AUTOMATIC APPROVAL FLAG		N/A
WAR AUTOMATIC APPROVAL FLAG		N/A
LOAD FORECAST LOSS ADJUSTMENT FACTOR		%
LOAD SENSITIVITY FACTOR		MW
RESERVE ENVELOPE HIGH RESERVE		N/A
RESERVE ENVELOPE MEDIUM RESERVE		N/A

4.5.23 Scheduled parameters – Station Load Factor

Scheduled Parameters – Parameter Details		
Field Names on Data Admin Screen	DATA	Unit
PARAMETER NAME	STATION LOAD FACTOR	N/A
START PERIOD		Date, Period
VALUE		%

4.5.24 Scheduled parameters – Risk Adjustment Factors

Scheduled Parameters – Parameter Details		
Field Names on Data Admin Screen	DATA	Unit
PARAMETER NAME	8 Second RAF/ 30 Second RAF/ 10 minute RAF	N/A
START PERIOD		Date, Period
VALUE		N/A

4.5.25 Scheduled Tap Position

Scheduled Tap Position		
Field Names on Data Admin Screen	DATA	Unit
B1		N/A
B2		N/A
B3		N/A
START PERIOD		Date, Period
END PERIOD		Date, Period
TAP MIN		N/A
TAP MAX		N/A
TAP POSITION		N/A
USE NWSTAT	Y/N	N/A
COMMENT		N/A

4.5.26 Regulation Requirement

Regulation Requirement		
Field Names on Data Admin Screen	DATA	Unit
EFFECTIVE DATE		Date
EFFECTIVE PERIOD		Period
COMMENTS		N/A
REGULATION FOR EACH CORRESPONDING PERIOD 1-48		MW

5 Electronic Communications System

5.1 Protocols and procedures for the use of the electronic communications system used for the submission of standing offers and offer variations

Offer submissions to the *EMC*, using PowerBid, is currently a three step process:

- a. A web request is made to the *EMC*'s trading website (www.sem.emcsg.com) to generate a unique batch number that shall identify the submitted *offer* batch. This request is over SSL as the trading website is a secure web site.
- b. An *offer* is constructed in a predefined XML format that includes the batch number.
- c. This XML file is then sent to the *EMC*'s SonicMQ server. This occurs over an SSL connection as well, and requires the sender to have a correctly configured SonicMQ server.

More information on how PowerBid works is available in the PowerBid user guide included in/with the PowerBid CD, or may be requested from *EMC*.

Offer submissions to the *EMC*, using WebOffer, is currently a three step process:

- a. The authorized user logs into the *EMC*'s trading website using a security certificate issued by the *EMC*.
- b. Under the web offering section of the *EMC*'s trading website, the user selects an offer file which is constructed externally either in CSV or XML format to submit the *offers*. Along with the submission of the *offers*, the user must include the password assigned to him/her.
- c. If the submitted offer file type is CSV then the file shall be sent to the *EMC*'s SonicMQ Server whereas if the submitted file type is XML then the data shall be loaded using web services.

Once the *offer* has been submitted, the results of the processing and validation of the *offer* would be made available on the trading website. The submitted *offers* are identified by the batch number.

5.2 Communication protocols for standing offers and offer variations when the electronic communications system has failed

Please refer to Market Participant Backup Submission Guide which is available on the *EMC* Website at www.emcsg.com, About the Market, Market Systems and Backup Submission Guide.

6 Contact Details for EMC Helpdesk

Helpdesk Coordinator

Phone: +65 6779 3000

Fax: +65 6779 3030

Mobile: +65 9173 8082