Energy Market Company

MARKET OPERATIONS MARKET MANUAL

SETTLEMENT (Chapter 7 Market Rules)

~~1 July 2023~~1 April 2026

Energy Market Company

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1 Definitions

All terms in italics used in this *market manual* shall have the same meaning as ascribed to them under the *market rules*. Other non-italicised terms used in this *market manual* which have been defined in Appendix 7B of the *market rules* shall have the same meaning as therein ascribed to them.

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2 Bilateral contract data

2.1 Deadline for submission of bilateral contract data

For the purposes of section 2.3.1 of Chapter 7 of the *market rules*, a *selling market participant* may submit its *bilateral contract data* to the *EMC* and, if submitted, such submission shall be made any time prior to but no later than 5:00pm on the tenth calendar day before the *dispatch day* to which such *bilateral contract data* apply.

2.2 Method of submission of bilateral contract data

Bilateral contract data shall be submitted in a CSV file, in ASCII format as described in section 2.5, through the *EMC's* website at www.emcsg.com.

2.3 Procedure for submission of bilateral contract data in the event that the EMC's website is unavailable

In the event that the *EMC's* website is not available, the *selling market participant* shall submit the *bilateral contract data* via a password-protected zip file through electronic mail addressed to settdata@emcsg.com, and thereafter contact the *EMC*-Market Operations personnel by telephone to confirm receipt of such *bilateral contract data* and provide the password, all prior to the deadline stipulated in section 2.1. As a last resort, the *selling market participant* may submit its *bilateral contract data* to the *EMC* in a secure portable storage device.

2.4 Details of bilateral contract data

For the purposes of section 2.3.2 of Chapter 7 of the *market rules,* for the bilateral sale of *energy*, the *selling market participant* may submit *bilateral contract data* that define a bilateral *energy* quantity (BEQ) using one, or a combination of, the following:

	contract_type
• an absolute amount of *energy* (bilateral absolute quantity of *energy* or BAQ, in MWh);	Energy
• as a fraction of the *buying market participant's* total withdrawal *energy* quantity (bilateral withdrawal fraction or BWF, in %); and/or	Load
• as a fraction of the *selling market participant's* total injection *energy* quantity (bilateral injection fraction or BIF, in %).	Injection

The *EMC* shall use properly submitted *bilateral contract data* to compute bilateral *energy* quantities (BEQ, in MWh) in accordance with the formula set out in section 2.3.3 of Chapter 7 of the *market rules*.

In accordance with sections 2.3.4 and 2.3.5 of Chapter 7 of the *market rules*, for the bilateral sale of *regulation* or *reserve*, the *selling market participant*

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may submit *bilateral contract data* that define a bilateral *regulation* quantity or a bilateral *reserve* quantity as follows:

- *regulation*: bilateral *regulation* quantity or BFQ (in MWh); or
- *reserve*: bilateral *reserve* quantity or BRQ (in MWh).

2.5 Format of submission of bilateral contract data

The *bilateral contract data* shall be submitted in ASCII format as shown in the examples below:

For contract_type “Energy”:

```
contract_name,seller_account,buyer_account,contract_type,reserve_group,start_date,end_date,period,quantity
Bilateral-EGO,BELLA,KIKIPO,Energy,,01-Jul-2015,01-Jul-2015,1,200
```

For contract_type “Load”:

```
contract_name,seller_account,buyer_account,contract_type,reserve_group,start_date,end_date,period,quantity
Bilateral-Load,BELLA,KIKIPO,Load,,01-Jul-2015,01-Jul-2015,1,60
```

The elements of the *bilateral contract data* (as illustrated in the above examples) shall be in the format as set out in the table below:

Data Item	Field Type and Length	Mandatory /Optional	Field Description/ Valid Field Values
contract_name	VARCHAR2(30)	Mandatory	The name of the particular contract to which the *bilateral contract data* submission relates. Only one contract_name is allowed in respect of each file.
seller_account	VARCHAR2(30)	Mandatory	The *settlement account* associated with the *selling market participant*. Only one *settlement account* is allowed for the *selling market participant* in respect of each file.
buyer_account	VARCHAR2(30)	Mandatory	The *settlement account* associated with the *buying market participant*. Only one *settlement account* is allowed for the *buying market participant* in respect of each file.
contract_type	VARCHAR2(10)	Mandatory	One of: ‘Energy’ ‘Load’ ‘Injection’ ‘Regulation’ ‘Reserve’ Only one contract_type is allowed in respect of each *bilateral contract data* submission. If the *bilateral contract data* relates to one or more contract_types, then each contact_type must be separately provided for in separate *bilateral contract data* submissions.

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Data Item	Field Type and Length	Mandatory /Optional	Field Description/ Valid Field Values
reserve_group	VARCHAR2(30)	Mandatory if the contract_type = "Reserve". In all other cases, optional.	Required if the contract to which the *bilateral contract data* submission relates is of type 'Reserve', otherwise field is left NULL. This relates to one of the *reserve provider groups* published on the *EMC's* website. Each reserve_group shall be represented in the form "XXXRESZ", where: XXX represents the *reserve class* to which the *bilateral contract data* submission relates (i.e. PRI, SEC or CON);and Z represents the *reserve* effectiveness for the *reserve class* (i.e. A, B, C, D or E).
start_date	DATE	Mandatory	The start date of the contract to which the *bilateral contract data* submission relates. Must be specified in DD-MMM-YYYY format.
end_date	DATE	Mandatory	The end date of the contract to which the *bilateral contract data* submission relates. Must be specified in DD-MMM-YYYY format.
period	NUMBER(2)	Mandatory	Half-hour trading period : 1 to 48. 48 periods are required for each *dispatch day* in the period commencing on the start date to the end date of the bilateral contract to which the submitted *bilateral contract data* relates. With regard to any period in relation to which there is no *bilateral contract data* to be submitted, the field value of the "quantity" field shall be specified as "0".
quantity	NUMBER	Mandatory	The quantity/unit of quantity varies for: Energy = MWh figure Load = % of *buying market participant's* withdrawal *energy* quantity (WEQ) Injection = % of *selling market participant*'s injection *energy* quantity (IEQ) Reserve = MWh figure Regulation = MWh figure

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3 Vesting contract data

3.1 Deadline for submission of vesting contract data

For the purposes of sections 2.5.3 and 2.5.5 of Chapter 7 of the *market rules*, the *MSSL counterparty* shall provide the *EMC* with an electronic data file containing all relevant vesting quantities and prices at least ten calendar days before the commencement of the *vesting period* to which such vesting quantities and prices relate, and any subsequent revisions to such vesting quantities and prices shall be provided no later than 5:00pm on the fifth *business day* after the *dispatch day* to which such revised vesting quantities and prices relate.

In the event of the occurrence of a force majeure adjustment event as defined in the applicable *vesting contract*, the *MSSL counterparty* shall provide the *EMC* with all relevant vesting quantities and prices no later than 5:00pm on the ninth *business day* after the *dispatch day* to which such vesting quantities and prices relate.

3.2 Method of submission of vesting contract data

The *MSSL counterparty* shall provide the *EMC* with *vesting contract* data (or revised *vesting contract* data as the case may be) in a CSV file, in ASCII format as described in section 3.5, via the *EMC's* web-based communication system known as the Electronic Business Transaction (EBT) system.

3.3 Confirmation of receipt of vesting contract data

An auto-acknowledgement will be generated by the *EMC* for the *MSSL counterparty* following the receipt of the *vesting contract* data or revised *vesting contract* data for the purposes of section 2.5.4 or section 2.5.5 of Chapter 7 of the *market rules,* as the case may be.

3.4 Procedure for submission of vesting contract data in the event of electronic information system failure

In the event that there is a failure of the *electronic information system*, the *MSSL counterparty* shall submit the *vesting contract* data or revised *vesting contract* data via a password-protected zip file through electronic mail addressed to settdata@emcsg.com and telephone the *EMC*-Market Operations personnel to confirm receipt and provide the password prior to the deadline stipulated in section 3.1. As a last resort, the *MSSL counterparty* may submit the *vesting contract* data or revised *vesting contract* data to the *EMC* in a secure portable storage device.

3.5 Format of submission of vesting contract data

The *vesting contract* data shall be submitted in ASCII format as shown in the example below. (This example is a partial extract.)

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```
"Reference","Name","Settlement Account","Settlement Date","Settlement Period","Contract Price","Contract Quantity"
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,42,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,43,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,44,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,45,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,46,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,47,214.13,81312.13
"02130701-013","Sembcorp","SEMB CO_G",01-Jul-2013,48,214.13,81312.13
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,1,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,2,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,3,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,4,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,5,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,6,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,7,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,8,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,9,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,10,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,11,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,12,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,13,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,14,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,15,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,16,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,17,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,18,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,19,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,20,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,21,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,22,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,23,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,24,201.58,11123.24
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,25,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,26,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,27,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,28,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,29,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,30,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,31,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,32,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,33,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,34,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,35,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,36,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,37,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,38,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,39,201.58,20012.35
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,40,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,41,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,42,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,43,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,44,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,45,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,46,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,47,201.58,13413.46
"02130701-L03","Sembcorp","SEMB CO_G",01-Jul-2013,48,201.58,13413.46
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,1,203.89,8346.37
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,2,203.89,8346.37
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,3,203.89,8346.37
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,4,203.89,8346.37
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,5,203.89,8346.37
"02130701-T03","Sembcorp","SEMB CO_G",01-Jul-2013,6,203.89,8346.37
```

The elements of the *vesting contract* data (as illustrated in the above examples) shall be in the format as set out in the table below:

Data Item	Field Description	Field Type and Length	Mandatory/Optional	Valid Field Values
Reference	A value used to identify the v*esting contract* data which is being submitted. Each *vesting contract* data reference would be represented in the form "GGYYMMDD-CCC", where: GG represents the particular *market participant* to which the *vesting contract* data submission relates; YYMMDD represents the given year, month and day of the first day of the *vesting period* to which	VARCHAR2(12)	Mandatory	GGYYMMDD-CCC

Data Item	Field Description	Field Type and Length	Mandatory/Optional	Valid Field Values
	the *vesting contract* data relates; a CCC that starts with a number represents *vesting contract* data that is being submitted with a base vesting quantity (BVQ) with its associated base vesting price (BVP); ~~and~~ a CCC that starts with "L" represents *vesting contract* data that is being submitted with a tender vesting quantity (TVQ) with its associated tender vesting price (TVP)~~.~~; and a CCC that starts with "L" followed by number 01-30 represents vesting contract quantity (TVQ_{VC-GS}) and vesting contract price (TVP_{VC-GS}) associated with tender vesting contracts that involve the use of gas from the *Authority's* appointed gas supplier under the ~~V~~*vesting* ~~C~~*contract* pursuant to the Residual Vesting Scheme for the supply of *energy* for non-contestable *load*			
Name	The name of the *market participant* to which the *vesting contract* data submission relates.	VARCHAR2(30)	Mandatory	
Settlement Account	The applicable account identifier for the *settlement account* of the *market participant* to which the *vesting contract* data submission relates.	VARCHAR2(12)	Mandatory	
Settlement Date	The *trading day* to which the *vesting contract* data submission relates.	DATE	Mandatory	DD-MMM-YYYY

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Settlement Period	The *settlement interval* on the specified *trading day* in the *vesting period,* to which the relevant vesting quantity with its associated vesting price relate. There are 48 such *settlement intervals* which must be included for each of such *trading day*.	NUMBER(2)	Mandatory	1 to 48.

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Data Item	Field Description	Field Type and Length	Mandatory/Optional	Valid Field Values
	With regard to any settlement period in relation to which there is no v*esting contract* data to be submitted, the field value of the "quantity" field shall be specified as "0".			
Contract Price	The base vesting price (BVP) or tender vesting price (TVP) in $/MWh.	NUMBER(13,2)	Mandatory	The BVP is fixed for each *vesting period*, but could vary across different *vesting periods*. The TVP could vary across *settlement intervals* and tender tranches.
Contract Quantity	The base vesting quantity (BVQ) or tender vesting quantity in kWh.	NUMBER(13,2)	Mandatory	The BVQ can vary for each *settlement interval*, and the quantity cannot be negative. The TVQ can vary for each *settlement interval*, and the quantity cannot be negative.

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3.6 ~~3.6~~ Residual v~~V~~esting c~~C~~ontract d~~D~~ata

3.6.1 Deadline for ~~M~~maximum ~~D~~daily c~~C~~ontracted q~~Q~~uantity and n~~N~~on-contestable ~~C~~consumers load files

For the purposes of sections 2.5.3A of Chapter 7 of the *market rules*, the *MSSL counterparty* shall, no later than 5:00 p.m. of the fifth *business day* following the end of the day that is 75 *calendar days* after a *trading day*, provide the *EMC* with an electronic data file containing the maximum daily contracted quantity and non-contestable consumers load files (MNLF) required for the settlement of residual *vesting contract* associated with that *trading day*.

3.6.2 Format of submission of m~~M~~aximum d~~D~~aily c~~C~~ontracted q~~Q~~uantity and n~~N~~on-contestable c~~C~~onsumers load files

The elements of the MNLF shall be submitted in the format as set out in the table below:

Data Item	Field Description	Field Type and Length	Mandatory/Optional	Valid Field Values
Settlement Date	The *trading day* to which the MDQ data submission relates.	DATE	Mandatory	DD-MMM-YYYY
Settlement Period	The *settlement interval* on the specified ***trading day*** to which the relevant NCC load and MDQ relate. There are 48 such *settlement intervals* which must be included for each of such *trading day*.	NUMBER(2)	Mandatory	1 to 48.
MDQ	The Maximum Daily Contracted Quantity (MDQ) in kWh	NUMBER (13,2)	Mandatory	The MDQ can vary across different settlement interval.
NCC load	The non-contestable consumers (NCC) load in kWh	NUMBER (13,2)	Mandatory	The NCC load can vary across different *settlement interval*

3.6.3 Deadline for submission of r~~R~~esidual v~~V~~esting p~~P~~rice f~~F~~ile

For the purposes of sections 2.5.6 and 2.5.7 of Chapter 7 of the *market rules*, the *Authority* shall, no later than 5.00 p.m. of the first *business day* after the 10th calendar day of the second month following the end of the last *trading day* of a calendar month, provide the *EMC* with an electronic data file containing the residual vesting

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price file (RVPF) required for the settlement of residual vesting contract of that calendar month.

3.6.4 Format of submission of rResidual vVesting pPrice file

The elements of the RVPF shall be submitted in the format as set out in the table below:

	Field Description	Field Type and Length	Mandatory/Optional	Valid Field Values
Settlement Date	The *trading day within the calendar month* to which the RVPF submission relates.	DATE	Mandatory	DD-MMM-YYYY
Settlement Period	The *settlement interval* on the specified *trading day within the calendar month* to which the RVPF submission relates, to which the UEGQ and its associated RVP relate. There are 48 such *settlement intervals* which must be included for each of such *trading day.*	NUMBER(2)	Mandatory	1 to 48.
Name	The name of the *market participant* to which the RVP relates.	VARCHAR2(30)	Mandatory	
Settlement Account	The applicable account identifier for the *settlement account* of the *market participant* to which the RVP submission relates.	VARCHAR2(12)	Mandatory	
UEGQ	Uncontracted Excess Generation Quantity (UEGQ) in MWh	NUMBER (13,3)	Mandatory	
RVP_1	The Residual Vesting Prices (RVP) for first tranche of Residual Vesting Quantity (RVQ) in $/MWh.	NUMBER(13,2)	Mandatory	The RVP_1 is fixed for each calendar month.
RVP_2	The Residual Vesting Prices (RVP) for second tranche of Residual Vesting Quantity (RVQ) in $/MWh.	NUMBER(13,2)	Mandatory	The RVP_2 is fixed for each calendar month.

4 Metering data

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~~4~~

~~4.1~~ 4.1 Deadline for submission of metering data

For the purposes of section 2.1.3 of Chapter 7 and section B.3.1 of Appendix 7B of the *market rules*, the *market support services licensee* shall provide the *EMC* with *metering data* no later than 5:00pm on the fifth *business day* after a *trading day*.

The *market support services licensee* may submit to the *EMC* corrected *metering data* for *metering errors* discovered up to the relevant date by the relevant time in accordance with section B.3.1 of Appendix 7B of the *market rules* and as stated in the table below:

***Metering errors* discovered up to:**	**Deadline for submission of corrected *metering data* to *EMC*:**
T+9 *business days*	On T+9 *business days*, 5:00pm
First nominated day	After T+9 *business days*, 5:00pm and no later than T+47 *business days*, 5:00pm
Second nominated day	After T+47 *business days*, 5:00pm and no later than T+252 *business days*, 5:00pm

~~4.2~~ 4.2 Method of submission of metering data

The *market support services licensee* shall provide the *EMC* with the *metering data* or corrected *metering data* in a CSV file, in ASCII format as described in section 4.5, via the EBT.

~~4.3~~ 4.3 Confirmation of receipt of metering data

Following the receipt of the *metering data* or corrected *metering data*, an auto-acknowledgement will be generated by the *EMC* for the *market support services licensee* to confirm the receipt of the *metering data* or corrected *metering data*.

4.4 Procedure for submission of metering data in the event of electronic information system failure

In the event that there is a failure in the *electronic information system*, the *market support services licensee* shall submit the *metering data* or corrected *metering data* via a password-protected zip file through electronic mail addressed to settdata@emcsg.com and telephone the *EMC*-Market Operations personnel to confirm receipt and provide the password prior to the deadline stipulated in section 4.1. As a last resort, the *market support services licensee* may submit *metering data* or corrected *metering data* to the *EMC* in a secure portable storage device.

4.5 Format of submission of metering data

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The *metering data* shall be submitted in ASCII format as shown in the examples below. (These examples are partial extracts.)

“IEQ”,”27-MAY-2011”,”1”,”0.000”,”NODEX”,””
“IEQ”,”27-MAY-2011”,”2”,”0.000”,”NODEX”,””
“IEQ”,”27-MAY-2011”,”3”,”0.000”,”NODEX”,””
“IEQ”,”27-MAY-2011”,”4”,”0.000”,”NODEX”,””
“IEQ”,”27-MAY-2011”,”5”,”0.000”,”NODEX”,””
…….
…….
“IEQ”,”27-MAY-2011”,”48”,”0.000”,”NODEX”,””
“IIQ”,”27-MAY-2011”,”1”,”-1.037”,”NODEX”,””
“IIQ”,”27-MAY-2011”,”2”,”3.233”,”NODEX”,””
“IIQ”,”27-MAY-2011”,”3”,”-3.347”,”NODEX”,””
“IIQ”,”27-MAY-2011”,”4”,”-1.329”,”NODEX”,””
“IIQ”,”27-MAY-2011”,”5”,”-2.318”,”NODEX”,””
…….
…….
“IIQ”,”27-MAY-2011”,”48”,”3.412”,”NODEX”,””
“WEQ”,”27-MAY-2011”,”1”,”222.196”,””,”SETTACCX”
“WEQ”,”27-MAY-2011”,”2”,”222.234”,””,”SETTACCX”
“WEQ”,”27-MAY-2011”,”3”,”222.321”,””,”SETTACCX”
“WEQ”,”27-MAY-2011”,”4”,”221.312”,””,”SETTACCX”
“WEQ”,”27-MAY-2011”,”5”,”221.563”,””,”SETTACCX”
…….
…….
“WEQ”,”27-MAY-2011”,”48”,”135.137”,””,”SETTACCX”
“WPQ”,”27-MAY-2011”,”1”,”3.166”,””,”SETTACCX”
“WPQ”,”27-MAY-2011”,”1”,”4.244”,””,”SETTACCX”
“WPQ”,”27-MAY-2011”,”1”,”5.138”,””,”SETTACCX”
“WPQ”,”27-MAY-2011”,”1”,”2.345”,””,”SETTACCX”
“WPQ”,”27-MAY-2011”,”1”,”1.323”,””,”SETTACCX”
…….
…….
“WPQ”,”27-MAY-2011”,”48”,”5.622”,””,”SETTACCX”
“WMQ”,”27-MAY-2011”,”1”,”3.166”,””,”SETTACCX”
“WMQ”,”27-MAY-2011”,”2”,”4.244”,””,”SETTACCX”
“WMQ”,”27-MAY-2011”,”3”,”5.138”,””,”SETTACCX”
“WMQ”,”27-MAY-2011”,”4”,”2.345”,””,”SETTACCX”
“WMQ”,”27-MAY-2011”,”5”,”1.323”,””,”SETTACCX”
…….
…….
“WMQ”,”27-MAY-2011”,”48”,”5.622”,””,”SETTACCX”
“WFQ”,”27-MAY-2011”,”1”,”3.166”,””,”SETTACCX”
“WFQ”,”27-MAY-2011”,”1”,”5.138”,””,”SETTACCX”
“WFQ”,”27-MAY-2011”,”1”,”2.345”,””,”SETTACCX”
“WFQ”,”27-MAY-2011”,”1”,”1.323”,””,”SETTACCX”
…….
…….
“WFQ”,”27-MAY-2011”,”48”,”1.037”,””,”SETTACCX”
“WDQ”,”27-MAY-2011”,”1”,”222.234”,””,”SETTACCX”
“WDQ”,”27-MAY-2011”,”1”,”242.321”,””,”SETTACCX”
“WDQ”,”27-MAY-2011”,”1”,”225.312”,””,”SETTACCX”
…….
…….
“WDQ”,”27-MAY-2011”,”48”,”135.137”,””,”SETTACCX”
“WLQ”,”27-MAY-2011”,”1”,”11.223”,”NODEX”,””
“WLQ”,”27-MAY-2011”,”1”,”13.326”,”NODEX”,””
…….
…….
“WLQ”,”27-MAY-2011”,”48”,”11.326”,”NODEX”,””

The elements of the *metering data* (as illustrated in the above examples) shall be in the format as set out in the table below:

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Data Item	Field Description	Field Type and Length	Mandatory/ Optional	Valid Field Values
Quantity Type	The type of *energy* quantity injected or withdrawn from the *transmission system*.	VARCHAR2(32)	Mandatory	IEQ – injection *energy* quantity WEQ – withdrawal *energy* quantity WFQ – total withdrawal fee quantity WMQ – total withdrawal MEUC quantity WPQ – total withdrawal price quantity IIQ – net imported *intertie* quantity WDQ – withdrawal *energy* quantity for recovering load curtailment uplift charges WLQ – withdrawal *energy* quantity for a *load registered facility*
Settlement Date	The *trading day* to which the *metering data* relates to.	DATE	Mandatory	DD-MMM-YYYY
Period	The *settlement interval* on the specified *trading day* to which the *energy* quantity relates to. There are 48 such *settlement intervals* which must be included for each of such *trading day.* With regard to any period in relation to which there is no *metering data* to be submitted, the field value of the "quantity" field shall be specified as "0".	NUMBER (2)	Mandatory	1 to 48.
Quantity	The metered quantity of *energy* injected into or withdrawn from the *transmission system* in MWh, adjusted by applying the relevant loss adjustment factors as required by the	NUMBER (13,3)	Mandatory	

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Data Item	Field Description	Field Type and Length	Mandatory/ Optional	Valid Field Values
	relevant *code of practice*. When the *energy* quantity type is IEQ or IIQ, a negative value denotes a withdrawal; a positive value denotes an injection.			
Node ID	The unique node identifier of the specific facility.	VARCHAR2(32)	Optional	Used only for *metering data* submission that relates to IEQ, IIQ and WLQ, otherwise field is left NULL.
Settlement Account	The unique *settlement account* identifier of the *market participant*.	VARCHAR2(12)	Optional	Used only for *metering data* submission that relates to WEQ and WDQ, otherwise this field is left NULL.

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4A Settlement Data of Import Registered Facility

4A.1 Deadline for Provision of Advisory Notice by the Power System Operator

In the event that an *import registered facility* is isolated from the *transmission system* due to the outage of *interties*, the *PSO* shall inform the *EMC* via the advisory notices of the starting time of the isolation, no later than 5:00pm, of the fifth *business day* after the *trading day*.

4A.2 Deadline for Notification of Overriding Dispatch Instruction by the Power System Operator

In the event that an *import registered facility* has been issued with an overriding *dispatch instruction* by the *PSO*, the *PSO* shall inform the *EMC* of such *dispatch instructions*, no later than 5:00pm, of the second *business day* after the *trading day*.

4A.3 Determination of Injected Energy Quantities for Import Registered Facilities

4A.3.1 The *EMC*, shall for each *settlement interval*, determine the injection energy quantity (IEQ) for each *import registered facility* in accordance with the following formula:

$IEQ_h^{m(a)} = \frac{d_h}{DispatchPeriod} * SZ_h^{m(a)}$	
where	
$SZ_h^{m(a)}$ =	(½-hour) x energy schedule (in MW) in the *real-time dispatch schedule* or the *PSO*'s *dispatch instruction* if the *EMC* is notified by the *PSO* that *dispatch instructions* have been issued to an *import registered facility;*
d_h =	The duration (in seconds) that *import registered facility* is not under isolated mode;
DispatchPeriod=	The duration in seconds of the *settlement interval h.* This shall be 1800;

4A.3.2 The duration that an *import registered facility* is not under isolated mode (d_h) shall be determined in accordance with the following formula:

$d_h = \begin{cases} DispatchPeriod, & (isoT_{h-1}^{start} = null \text{ and } isoT_h^{start} = null) \text{ or } [isoT_{h-1}^{start} < t_{h-1}^{receiving}] \\ isoT_h^{start} - t_h^{start}, & isoT_i^{start} \neq null \\ 0, & isoT_{h-1}^{start} \geq t_{h-1}^{receiving} \end{cases}$	
where	
$DispatchPeriod$=	The duration in seconds of the *settlement interval h.* This shall be 1800;

t_h^{start} =	the start time of *settlement interval h*;
$t_h^{receiving}$ =	the receiving time of network status file during *settlement interval h*;
$isoT^{start}{}_h$=	the start time of isolated mode within *settlement interval h*.

5 Reserve and regulation non-provision information file

5.1 Deadline and method for submission of reserve and regulation non-provision information file

For the purposes of section 2.6.3 of Chapter 7 of the *market rules*, the *PSO* shall use its best endeavours to notify the *EMC* not later than 5:00pm on the fifth *business day* after a given *trading day,* of all *non-provision events* which occurred in that given *trading day* in a reserve and regulation non-provision information file via such means as may be acceptable to the *PSO* and the *EMC*.

5.2 Format of reserve and regulation non-provision information file

The file will commence with a record specifying the file's filename. The format of each file is as described in the tables below:

First line

Data Item	Data Type and Length	Values/ Data Format	Data Description	Action for cases where data is missing or not as expected
Record Type	Text(4)	"FNAM"	Identifies this record format.	File will be rejected.
Filename	Text(22)	UPRRYYYYMM DDHHMMSS.txt	Identifies the acceptable filename of the reserve and regulation non-provision information file, which shall include the year, month, date, hours (in 24 hours format), minute and seconds at which such file is created.	File will be rejected.

Second line

Data Item	Data Type and Length	Values / Data Format	Data Description	Action for cases where data is missing or not as expected
Record Type	Text(4)	"DATE"	Identifies this record format.	File will be rejected.
Date	Text(8)	YYYYMMDD	Specifies the *trading day* to which the data in the reserve and regulation non-provision information file relates to.	File will be rejected.

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Third line

Data Item	Data Type and Length	Values / Data Format	Data Description	Action for cases where data is missing or not as expected
Record Type	Text(4)	"HEAD"	Identifies this record format.	File will be rejected.
Column Heading (this field is repeated as required)	Text(*n*)	Text values as indicated in the record structure for line item data described below.	Describes the column heading of the corresponding information file data in the subsequent data record type, the field width should equal that of the corresponding data column.	File will be rejected.

The record structure for line item data is described below:

Data Item (Column Heading)	Data Type and Length	Values / Data Format	Data Description	Action for cases where data is missing or not as expected
HEAD	Text(4)	"UPRR"	Identifies this record format – 'Unable to Provide Reserves/Regulation'.	File will be rejected.
PD	Numeric(2)	1-48	Specifies the relevant trading period the information relates to.	File will be rejected.
HH:MM HH:MM	Text(11)	HH:MM-HH:MM	Specifies the start and end times (in 24 hour format) for the relevant trading period the information relates to.	File will be rejected. Regardless of whether the file is rejected or not rejected, this information will not be used for processing and there will be no validation applied to counter check with period data stated in the earlier field.
B1	Text(8)	The text value of B1.	Uniquely identifies the B1 : B2 : B3 of a non-providing facility.	If it does not match against standing data, it will be ignored.
B2	Text(8)	The text value of B2.		
B3	Text(8)	The text value of B3.		
REG	Text(3)	'REG'	Specifies the *ancillary service* type that the non-providing facility failed to provide.	To be left blank if not applicable.
PRI	Text(3)	'PRI'	Specifies the class of *reserve* that the non-providing facility failed to provide.	To be left blank if not applicable.
SEC	Text(3)		This field is to be left blank.	To be left blank.
CON	Text(3)	'CON'	Specifies the class of *reserve* that the non-providing facility failed to provide.	To be left blank if not applicable.

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Each file will be terminated by an end-of-file record. The format of these records is as described below:

Last line

Data Item	Data Type and Length	Values / Data Format	Data Description	Action for cases where data is missing or not as expected
Record Type	Text(3)	“EOF ”	Identifies this record format.	File will be rejected.

As an example, the reserve and regulation non-provision information file would appear as shown below:

```
FNAM UPRRYYYYMMDDHHmmss.txt
DATE YYYYMMDD
HEAD PD HH:MM-HH:MM B1        B2        B3        REG PRI SEC CON
UPRR 01 00:00-00:30 POWSERY   CCP S1    SERCCP1   REG
UPRR 01 00:00-00:30 TUASPOW   STAGE1    TUA G1
UPRR 09 04:00-04:30 AGCKMCG   KEPPEL    KMCBLK1       PRI
UPRR 10 04:30-05:00 AGCKMCG   KEPPEL    KMCBLK1       PRI
UPRR 35 17:00-17:30 TUASPOW   STAGE1    TUA G1                CON
EOF
```

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6 Communication of settlement information

6.1 Process for communication of settlement information

For the purposes of section 5.1.1 of Chapter 7 of the *market rules*, all communications between the *market participants* and the *EMC* relating to the *settlement* process shall be carried out using the means of communication specified in the fourth column of the table in section 6.3 below.

6.2 Process for communication of settlement information in the event of electronic information system failure

In the event of a failure of the means of communication as specified in the fourth column of the table in section 6.3, the relevant communications between the *market participants* and the *EMC* shall be carried out using the *electronic information system,* failing which, the *EMC* or the *market participant*, as the case may be, shall communicate by the alternate means of communication as set out in the fifth column of the table in section 6.3.

6.3 Summary of settlement information communication processes

No	Type of issue	Between	Means of Communications	Alternate means of communication
1	Enquiries on *preliminary settlement statements*, *final settlement statements* and *invoices*	*Market support services licensee* / *Market participants* and the *EMC*	Electronic mail sent to: settlement@emcsg.com	Facsimile and telephone the *EMC*-Market Operations personnel to confirm receipt.
2	*Notice of disagreement* relating to a *preliminary settlement statement* and *notice of arbitration* relating to a *final settlement statement*			
3	General *settlement* enquiries			

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7 Settlement statements

7.1 Deadline for issuing preliminary and final settlement statements

For the purposes of sections 5.2.1 and 5.2.3 of Chapter 7 of the *market rules*, the *EMC* shall, by no later than 5:00pm, issue a *preliminary settlement statement* for each *trading day* in the *real-time markets* on the sixth *business day* after the *trading day*, and a *final settlement statement* for each *trading day* in the *real-time markets* on the tenth *business day* after the *trading day*.

7.2 Method of issuing preliminary and final settlement statements

For the purposes of section 5.3.1 of Chapter 7 of the *market rules*, *preliminary settlement statements* and *final settlement statements* will be issued to the *market participants* through the *EMC's* website at www.emcsg.com. The *market participant* will have to log-in to retrieve such *preliminary settlement statements* and *final settlement statements* from the *EMC's* website.

7.3 Inability to receive/access preliminary or final settlement statement

In the event that a *market participant* does not receive, or is unable to access the *EMC's website* and obtain, a *preliminary settlement statement* or *final settlement statement* by the deadline stipulated in section 7.1, such *market participant* shall notify the *EMC*-Market Operations personnel in respect of the same through electronic mail addressed to settlement@emcsg.com and also contact the *EMC*-Markets Operations personnel via telephone in respect of the same.

Upon receiving notification from the *market participant*, the *EMC*-Market Operations personnel shall:

a) identify and communicate to the *market participant* the precise nature and root cause of the *market participant's* inability to receive or access its *preliminary settlement statement* or *final settlement statement*; and

b) take such action as may be required to enable the *market participant* to view and download its *settlement statement*.

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8 Settlement invoices

8.1 Issuance of settlement invoices

8.1.1 The *EMC* has undertaken to perform self-billing for goods and services tax for goods and services traded or settled in the *wholesale electricity markets.* The provisions in this section are to comply with the requirements of the Inland Revenue Authority of Singapore.

8.1.2 For the purposes of section 5.2.5 of Chapter 7 of the *market rules*, the *EMC* shall by no later than 5:00pm issue *invoices* to *market participants* on the tenth *business day* after the *trading day*. Where applicable, *invoices* include tax invoices and buyer-created tax invoices issued on the *market participants*' behalf.

8.1.3 Each *market participant* hereby:

a) authorises the *EMC* to issue tax invoice on its behalf;

b) undertakes not to issue tax invoices to the *EMC* if a buyer-created tax invoice has been issued by the *EMC* on its behalf; and

c) undertakes to notify the *EMC* immediately, if its GST registration is cancelled or if it is issued with a new GST registration number.

8.2 Method of issuing settlement invoices

Invoices will be issued to the *market participants* through the *EMC's* website at www.emcsg.com. Each *market participant* will need to log in to the *EMC's* website to view and download its own *invoice*.

8.3 Inability to receive/access settlement invoice

In the event that the *market participant* does not receive, or is unable to access the *EMC's* website and obtain, an *invoice* by the deadline stipulated in section 8.1.2, the *market participant* shall notify the *EMC*-Market Operations personnel in respect of the same through electronic mail addressed to marketoperations@emcsg.com and also contact the *EMC*- Market Operations personnel via telephone in respect of the same.

Upon receiving notification from the *market participant*, the *EMC*-Market Operations personnel shall:

a) identify and communicate to the *market participant* the precise nature and root cause of the *market participant's* inability to receive or access its *invoice*; and

b) take such action as may be required to enable the *market participant* to view and download its *invoice*.

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9 Notice of disagreement and notice of arbitration

9.1 Notice of disagreement relating to preliminary settlement statement

In accordance with section 5.2.2 of Chapter 7 of the *market rules*, each *market participant* shall have three *business days* from the day that the *preliminary settlement statement* was issued to notify the *EMC*-Market Operations personnel of errors in the *preliminary settlement statement* via a *notice of disagreement*. Such a *notice of disagreement* shall be issued in accordance with section 5.5 of Chapter 7 of the *market rules*.

The *notice of disagreement* shall reach the *EMC*-Market Operations personnel no later than 5:00pm on the ninth *business day* after the *trading day* to which the *preliminary settlement statement* relates.

The *EMC* shall acknowledge the receipt of a *notice of disagreement* in accordance with section 5.5.4 of Chapter 7 of the *market rules*.

9.2 Notice of arbitration relating to final settlement statement

Subject to sections 5.6.5 and 5.6.7 of Chapter 7 of the *market* rules, a *market participant* may refer any disagreement pertaining to a *final settlement statement* to the *dispute resolution counsellor* and shall submit a *notice of arbitration* to the *dispute resolution counsellor* pursuant to section 5.6.6 of Chapter 7 of the *market rules*, if the disagreement is not in respect of the calculation of the elements referred to in sections 5.5.9.1 to 5.5.9.3 of Chapter 7 of the *market rules*.

No *market participant* may submit a *notice of arbitration* pertaining to a *final settlement statement* if:

a) the dispute relates to the accuracy of *metering data* and more than forty *business days* has elapsed since the date on which the *final settlement statement* to which the *notice of arbitration* relates was issued; or

b) in all other cases, more than twenty *business days* has elapsed since the date on which the *final settlement statement* to which the *notice of arbitration* relates was issued.

9.3 Dismissal of a notice of arbitration relating to final settlement statement

The *dispute resolution counsellor* shall dismiss a notice *of arbitration* and shall not take further action with respect to the *notice of arbitration* if the element of the *final settlement statement* that is the subject-matter of the notice (i) relates to the calculation of the elements referred to in sections 5.5.9.1 to 5.5.9.3 of Chapter 7 of the *market manual;* or (ii) is identical to that found in the corresponding *preliminary settlement statement* and the *market participant* did not previously file a *notice of disagreement* in respect of such an element, unless the *market participant* demonstrates that it could not, with the exercise of due diligence, have filed a *notice of disagreement* in respect of such an element.

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9.4 Format of notice of disagreement

A *market participant* shall submit a *notice of disagreement* in respect of any disagreement with a *preliminary settlement statement*, in the form set out below (a soft copy of which is downloadable from the *EMC's* website), together with supporting documents through electronic mail addressed to settlement@emcsg.com.

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Notice of Disagreement

Submitted by :

Company :

Preliminary Settlement Statement

Settlement A/C :

Trading Day :

Run Date :

Description of disagreement

Proposed adjustment to the data used to calculate any relevant settlement amount

Proposed correction to any calculation of the relevant settlement amount

The *market participant* must provide supporting documents to support its *notice of disagreement*.

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10 Electronic funds transfer

10.1 Bank accounts

The *EMC* shall appoint a clearing bank for the operation of its *settlement* and *invoicing* processes in the *wholesale electricity markets* for the purposes of section 5.16 of Chapter 7 of the *market rules*. For the purposes of this *market manual*, "clearing bank" refers to the single bank or financial institution that the *EMC* maintains its *bank accounts* with under section 5.16.2 of Chapter 7 of the *market rules*.

10.1.1 The EMC's bank account details

The name of the clearing bank shall be published on the *EMC's* website at www.emcsg.com.

10.1.2 Market participant's market participant bank account

Each *market participant* shall open and maintain a *market participant bank account* with the clearing bank appointed by the *EMC* in accordance with section 5.16.10 of Chapter 7 of the *market rules*.

Each *market participant* shall arrange with the clearing bank to authorise the *EMC* to directly credit and debit, and instruct the clearing bank to directly credit and debit, the *market participant's market participant bank account*, for the purposes of facilitating the making of *settlement* payments to or from the *market participant's market participant bank account* (the "Third Party Authorisation").

In accordance with section 5.16.11 of Chapter 7 of the *market rules*, each *market participant* shall inform the *EMC* of all applicable information (including the applicable *bank account* number) required for *the EMC* to make payment to or from the *market participant's market participant bank account*.

In accordance with section 5.16.12 of Chapter 7 of the *market rules*, a *market participant* may change details of its *bank account*, on the condition that the *EMC* is notified in writing at least twenty *business days* before the change takes effect.

10.2 Electronic funds transfer process for settlement

The *EMC* shall issue *electronic funds transfer* instructions to the clearing bank in accordance with the *invoice* no later than the eleventh *business day* after the *trading day* to which the *invoice* relates.

The *EMC* shall instruct the clearing bank as follows:

a) Where a net *settlement amount* is payable by a *market participant* to the *EMC* (i.e. where the net *settlement amount* is negative), the clearing bank shall be instructed to debit the *market participant's market participant bank account* for the specified dollar amounts on the *market participant payment date* In accordance with section 5.2.6 of Chapter 7 of the *market rules,* the *market participant payment date* for each *invoice* shall be the twentieth day after the *trading day* to which such *invoice* relates, subject to *business day convention*.

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b) Where a net *settlement amount* is payable to a *market participant* by the *EMC* (i.e. where the net *settlement amount* is positive), the clearing bank shall be instructed to credit the *market participant's market participant bank account* for the specified dollar amounts on the *EMC payment date*. In accordance with section 5.2.8 of Chapter 7 of the *market rules*, the *EMC payment date* for each *invoice* shall be one day after the *market participant payment date* of such *invoice*, subject to *business day convention*.

A *market participant* shall ensure that there are sufficient funds in the *market participant's market participant bank account* with the clearing bank to pay the full amount payable to the *EMC*, prior to the *close of banking business* on the *market participant payment date*.

The clearing bank, in accordance with the *EMC's* instructions, will debit the *market participant's market participant bank account* and credit the *EMC settlement clearing account* by the *close of banking business* on the *market participant payment date*.

The clearing bank, in accordance with the *EMC's* instructions, will debit the *EMC settlement clearing account* and credit the *market participant's market participant bank account* by the *close of banking business* on the *EMC payment date*.

On the *business* day after the *market participant payment date*, the *EMC*:

- shall perform reconciliation to ensure that the full amounts payable to *EMC* from the *market participants* are received from such *market participants*; and
- if any such amounts are not received in full from any *market participants*, may take any and all necessary actions in accordance with section 5.12 of Chapter 7 of the *market rules*.

On the *business day* after the *EMC payment date*, the *EMC*:

- shall perform reconciliation to ensure that all amounts payable by the *EMC* to the *market participants* are paid to such *market participants*.

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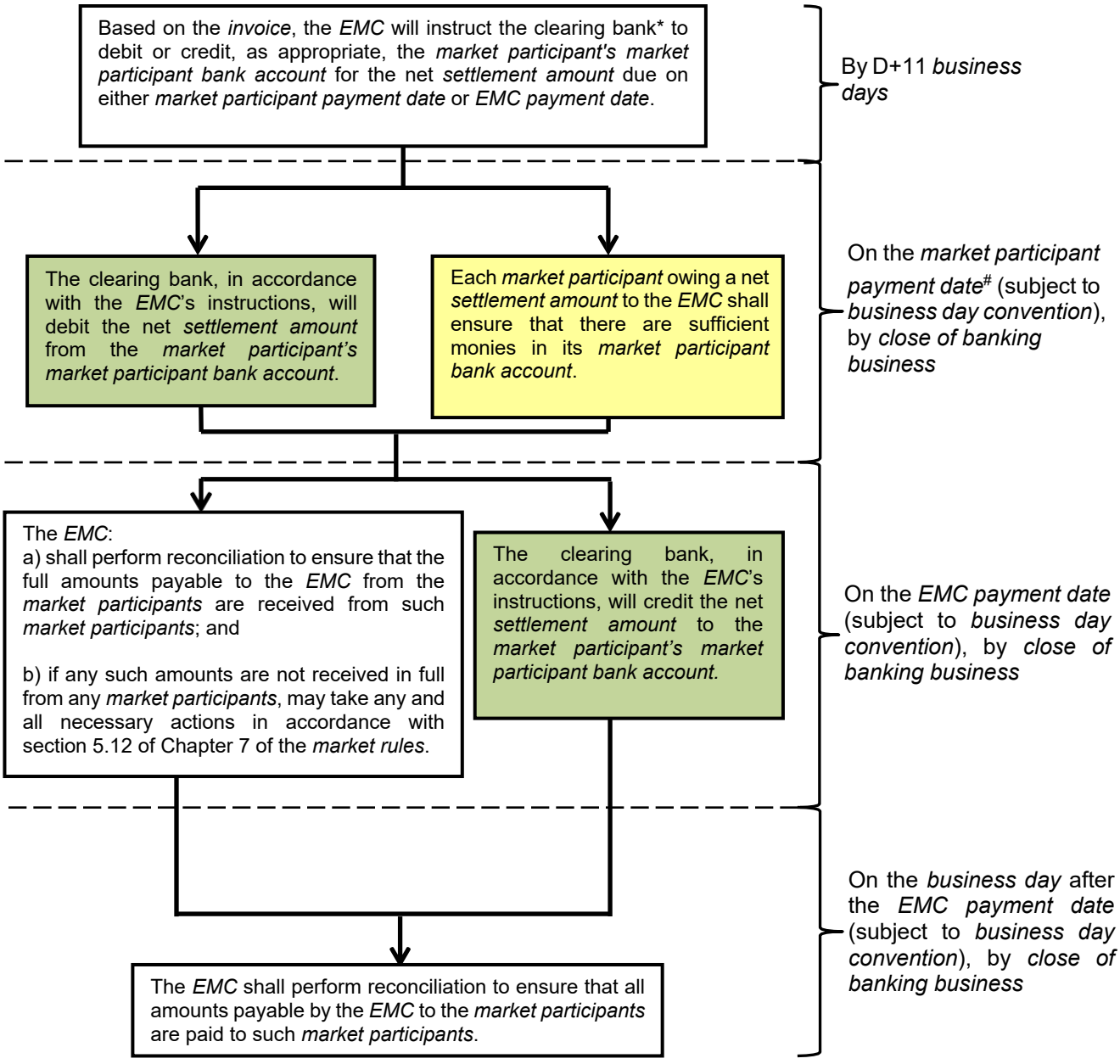
10.3 Flowchart of electronic funds transfer process for settlement



D refers to the *trading day* in the *real-time markets* in respect of which the *invoice* relates

Functions of the *EMC*

Functions of the *market participants*

Functions of the clearing bank

no later than D+20 days (subject to *business day convention*) by *close of banking business*

* refers to the single bank or financial institution that *EMC* maintains its *bank accounts* with under Section 5.16.2 of Chapter 7 of the *market rules*.

11 Application to market support services licensees

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In accordance with section 5.17.1 of Chapter 7 of the *market rules*, sections 6, 7, 8, 9 and 10 above shall apply to a *market support services licensee* that, on its own behalf or on behalf of any person in respect of which it provides *market support services* pertaining to the *wholesale electricity markets,* is or may be entitled to receive a *settlement amount* from, or required to pay a *settlement amount* to, the *EMC* and, for this purpose, all references in those sections to a *market participant* shall be deemed to include a reference to a *market support services licensee*.

12 Set up of settlement account

In accordance with section 3.1.1 of Chapter 2 of the *market rules*, any interested party who wishes to participate in the *wholesale electricity markets* shall file a *participant registration application* with the *EMC* to be registered as a *market participant*.

A *participation applicant* shall be required to provide the relevant information and documents in its application form for *market participant* registration. Amongst other information and documents, a *participation applicant* is required to provide:

- the *bank account* details of the *bank account* that it is required to open and maintain with the clearing bank in accordance with section 5.16.10 of Chapter 7 of the *market rules*; and
- a certified true copy of the *participation applicant's* duly executed "Third Party Authorisation" Form.

The "Third Party Authorisation" Form must authorise the *EMC* to directly debit and credit, and to instruct the clearing bank to directly credit and debit, the *market participant's market participant bank account* with the clearing bank, for the fulfilment of financial obligations arising under the *market rules*.

Upon receipt of the required documents, the *EMC* shall, for the purposes of section 2.1.2 of Chapter 7 of the *market rules*:

- check with the clearing bank if a "Third Party Authorisation" Form has been duly executed by the *participation applicant* with the clearing bank; and

set up the *settlement account* in its *settlement* system and assign a *settlement account* to the *participation applicant*. After the *EMC* registers the *participation applicant* as a *market participant*, the *EMC* shall advise the *participation applicant* of its *settlement account*.

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13 EMC Market Operations contact details

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