



Smart Energy, Sustainable Future

CONSULTATION PAPER

PROPOSED MODIFICATIONS TO THE METERING CODE

**Closing date for submission of comments and feedback:
28 Feb 2018, 4pm**

31 JAN 2018 | ENERGY MARKET AUTHORITY
991G Alexandra Road
#02-29 Singapore 119975
www.ema.gov.sg

Please direct any enquiries by e-mail to: EMA_Policy@ema.gov.sg

Disclaimer:

The information contained in this document is subject to change and shall not be treated as constituting any advice to any person. It does not in any way bind the Energy Market Authority ('EMA') to grant any approval or official permission for any matter, including but not limited to the grant of any exemption nor to the terms of any exemption. EMA reserves the right to change its policies and/or to amend any information contained in this document without prior notice. Persons who may be in doubt about how the information in this document may affect them or their commercial activities are advised to seek independent legal advice or any other professional advice as they may deem appropriate. EMA shall not be responsible or liable for any consequences (financial or otherwise) or any damage or loss suffered, directly or indirectly, by any person resulting or arising from the use of or reliance on any information contained in this document.

1 Background

- 1.1 Since 9 December 2015, consumers with embedded Intermittent Generation Source (IGS) of 1 MWac or more who do not wish to sell excess electricity into the grid can choose not to have the relevant metering arrangement (“M1 meters”) at each generation point (refer to Annex 1 for illustration). They can instead adopt an alternative arrangement to be approved by the Energy Market Authority (“EMA”) to determine the IGS output for the financial settlement of the relevant wholesale market charges. An example of such an alternative arrangement is to use an estimated Solar Generation Profile that is approved by the EMA, obviating the need for such consumers to install M1 meters. This streamlining of existing processes seeks to facilitate the entry of IGS.

2 Extending the option of the Solar Generation Profile

- 2.1 In 2017, the EMA has further facilitated the entry of IGS by introducing the following two new initiatives. These initiative will also allow contestable consumers (“CCs”) with embedded IGS to choose the Solar Generation Profile (without the need for installing physical meters) determined by EMA for the purpose of paying applicable market charges:
- (i) **Enhanced Central Intermediary Scheme (“ECIS”)**¹. Under the ECIS, CCs with embedded generation (both IGS and non-IGS) below 10 MW are not required to register with the Energy Market Company (“EMC”) as a Market Participant (“MP”) to get paid for injecting its embedded IGS output into the grid. The payment will be made through SP Services (“SPS”) at the prevailing half-hourly wholesale energy price. Such CCs can choose to have their output estimated based on the Solar Generation Profile for the purpose of paying applicable market-related charges.
 - (ii) **Streamlined market registration for consumers with embedded IGS below 10 MWac who will not be selling their excess electricity output (“IGS MP (Non-exporting)”)**². CCs with embedded IGS below 10 MWac who will not be selling any electricity back to the market can undergo a streamlined MP and Generation Facility (“GF”) registration, and pay EMC an estimated fixed charge determined by the EMA. This fixed charge will be determined based on the estimated IGS generation (according to the

¹ More information can be found at:

<https://www.ema.gov.sg/cmsmedia/Enhanced%20Central%20Intermediary%20Scheme%20-%20Final%20Determination.pdf>

² More information can be found at:

<https://www.ema.gov.sg/cmsmedia/Consultations/Electricity/Determination%20paper%202017%20-%20Enhancements%20to%20the%20regulatory%20framework%20vf.pdf>

Solar Generation Profile determined by the EMA), and the historical average rates of the respective charges. This fixed charge will be revised periodically to reflect updated market conditions.

- 2.2 In addition, CCs with embedded IGS (regardless of size) can also opt to use Solar Generation Profile when they register with EMC as a MP to get paid for injecting its embedded IGS output into the grid.

3 Request for Comments and Feedback

- 3.1 The Metering Code will have to be modified to extend the option for CCs with embedded IGS to choose the Solar Generation Profile in conjunction with the above initiatives. EMA invites comments and feedback on the proposed modifications to the Metering Code as set out in Appendix 1.
- 3.2 To submit your written comments and feedback, please use the form given in Appendix 2 and send your submission by e-mail to: EMA_Policy@ema.gov.sg

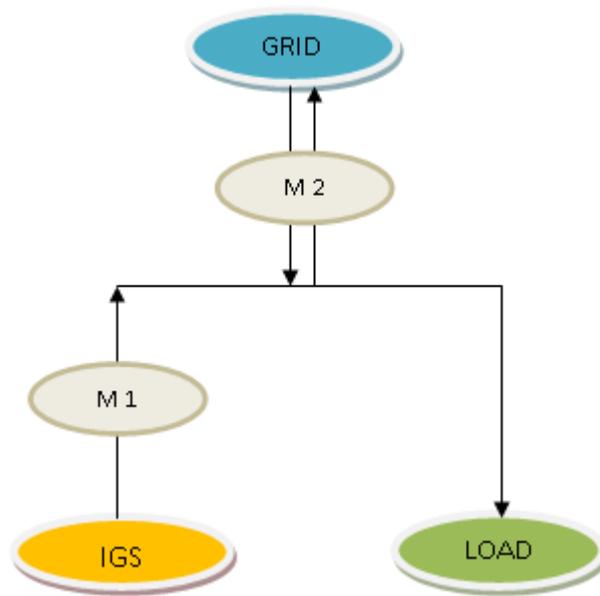
Alternatively, you may send your submission by post to the following address:

Attn: Ms Cheong Cui Wen
Policy and Planning Department
Energy Market Authority
991G Alexandra Road #02-29
Singapore 119975

- 3.3 Anonymous submissions will not be considered.
- 3.4 All comments and feedback must reach EMA by **28 Feb 2018, 4pm**.
- 3.5 EMA will acknowledge receipt of all submissions electronically. Please contact Ms Cheong Cui Wen at 6376 7868 or Mr Lionel Choo at 6376 7652 if you do not receive an acknowledgement of your submission within two business days.
- 3.6 EMA reserves the right to make public all or parts of any written submissions made in response to this Consultation Paper and to disclose the identity of the source. Any part of the submission, which is considered by respondents to be confidential, should be clearly marked and placed as an annex. EMA will take this into account regarding disclosure of the information submitted.

~ End ~

Diagram 1: Illustration of metering set up for a typical consumer with embedded IGS



Energy Market Authority of Singapore

Appendix 1

PROPOSED MODIFICATIONS TO THE METERING CODE

Modification Ref. No.	Clause	Original text	Modified text or addition	Reason for modification
MC/2018/1	1.4 Definitions	Nil	“Solar Generation Profile” means the average generation for a contestable consumer with embedded intermittent generation facility across each half-hour interval, commencing at 0:00 hours as determined by the Authority;	To extend the use of Solar Generation Profile by contestable consumers with embedded IGS.
MC/2018/2	1.4 Definitions	Nil	“Solar Generation Profiling” means the metering option chosen by a contestable consumer with embedded intermittent generation facility where its generation is determined based on the Solar Generation Profile;	
MC/2018/3	2.4.14 [New]	Nil	Section 2.4.8 to 2.4.10 and 2.4.12 do not apply to intermittent generation facilities on Solar Generation Profiling.	

Energy Market Authority of Singapore

Modification Ref. No.	Clause	Original text	Modified text or addition	Reason for modification
MC/2018/4	4.2.1	Nil	<p><u>Type of Metered Entity or Meter Installation</u> Intermittent Generation Facility (Including installation meter connected to the transmission system)</p> <p><u>Meter Reading Frequency</u> Every business day</p>	To clarify the meter reading frequency for Intermittent Generation Facility.
MC/2018/5	4.6.4	For metering data from meters associated with an intermittent generation facility, if any interval is not valid or missing, the MDM shall estimate the usage of all meters associated with the intermittent generation facility for the interval to zero and reconcile the usage after actual readings are obtained.	For metering data from meters associated with an intermittent generation facility <u>that is not on Solar Generation Profiling</u> , if any interval is not valid or missing, the MDM shall estimate the usage of all meters associated with the intermittent generation facility for the interval to zero and reconcile the usage after actual readings are obtained	To clarify on the treatment of missing and non-valid metering data for both intermittent generation facility and embedded generation facility.

Energy Market Authority of Singapore

Modification Ref. No.	Clause	Original text	Modified text or addition	Reason for modification
MC/2018/6	4.6.5 [New]	Nil	For each intermittent generation facility that is on Solar Generation Profiling, the MDM shall calculate the generation of the intermittent generation facility based on the Solar Generation Profile. For metering data from meters associated with such facility on Solar Generation Profiling, if any interval is not valid or missing, the MDM shall estimate the gross generation and usage of all meters associated with such facility for the interval to zero and reconcile the generation and usage after actual readings are obtained.	To clarify on the treatment of missing and non-valid metering data for both intermittent generation facility and embedded generation facility.
MC/2018/7	4.6.6 [New]	Nil	For metering data from meters associated with an embedded generation facility for which payment is made by the Market Support Services Licensee for its net injection into the transmission system, if any interval is not valid or missing, the MDM shall estimate the usage of all meters associated with the embedded generation facility for the interval to zero and reconcile the usage after actual readings are obtained.	

Energy Market Authority of Singapore

Modification Ref. No.	Clause	Original text	Modified text or addition	Reason for modification
MC/2018/8	4.6.8 [Will be renumbered to 4.6.10]	The MDM for a meter installation shall apply the procedures delineated in sections 4.6.1 through 4.6.7 until all data elements required for settlement purposes have been determined.	The MDM for a meter installation shall apply the procedures delineated in sections 4.6.1 through 4.6.7 <u>4.6.9</u> until all data elements required for settlement purposes have been determined.	To update the reference to include the two new clauses (i.e. 4.6.5 and 4.6.6).
MC/2018/9	4.6.10 [Will be renumbered to 4.6.12]	For invalid or missing data for which the MDM has applied data estimation procedures, as described in sections 4.6.1 to 4.6.9, the intervals shall be deemed valid for future validation and estimation procedures, and considered to be settlement-ready data	For invalid or missing data for which the MDM has applied data estimation procedures, as described in sections 4.6.1 to 4.6.9 <u>4.6.11</u> , the intervals shall be deemed valid for future validation and estimation procedures, and considered to be settlement-ready data	

Energy Market Authority of Singapore

Appendix 2

FORMAT FOR SUBMISSION OF COMMENTS AND FEEDBACK

PROPOSED MODIFICATION TO THE METERING CODE

S/N No.	Modification Ref. No.	Industry Comments

Comments/Feedback submitted by

Name :
Designation :
Company :
Email :
Tel. No. :