

Summary of Rule 021 (Version 1.1) Changes
(Approved by the Commission on July 15, 2008)

Part 1:

The following table summarizes the proposed changes due to the inclusion of the Micro-Generation in the AUC Rule 021:

Reference to the AUC Rule 021 section/number		Reason for change	Currently stated in the Rule	Proposed to change as:
1. Definitions	1.1 Key Terms	No definition exists in current Rule 021	Nil	AUC Alberta Utilities Commission
	1.1 Key Terms	No definition exists in current Rule 021	Nil	SSC Settlement System Code
	1.1 Key Terms	No definition exists in current Rule 021	Nil	MPDR measurement point definition record is a specification that defines the physical arrangement of the metering systems as well as any algorithms used to manipulate the metering data to produce the measurement data associated with the measurement point to which the specification applies.
	1.1 Key Terms	No definition exists in current Rule 021	Nil	metering system all the metering equipment required for the measurement and, if applicable, remote storage of the active energy and reactive energy interval data for a single metering point.
	1.1 Key Terms	No definition exists in current Rule 021	Nil	Commissioned The wire owner declaration of readiness of all relevant site equipment to perform all required wire owner functions.
	1.1 Key Terms	No definition exists in current Rule 021	Nil	Decommissioned Revocation of commission status by the wire owner.
	1.1 Key Terms	No definition exists in current Rule 021	Nil	micro-generator micro-generator has the meaning ascribed to the term "micro-generator" in the Micro-Generation Regulation Alta. Reg. 27/2008.
	1.1 Key Terms	No definition exists in current Rule 021	Nil	large micro generation large micro-generation has the meaning ascribed to

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
	1.1 Key Terms	No definition exists in current Rule 021	Nil small micro-generation small micro-generation has the meaning ascribed to the term "small micro-generation" in the Micro-Generation Regulation Alta. Reg. 27/2008.
	1.1 Key Terms	Current definition requires adjustment to include micro generation	System Level "System level is hourly measurement values needed to describe the total hourly energy flow on the AIES at the transmission level and the inputs and outputs to each and every distribution settlement zone for each hour. It includes measurements between the transmission system and the distribution system, distribution interchange, distributed generation, and amounts delivered to or from border customers." System Level "System level is hourly measurement values needed to describe the total hourly energy flow on the AIES at the transmission level and the inputs and outputs to each and every distribution settlement zone for each hour. It includes measurements between the transmission system and the distribution system, distribution interchange, distributed generation, and amounts delivered to or from border customers, but does not include generation supplied by small micro-generation."
	1.2 Common Abbreviations	No definition exists in current Rule 021	Nil GIM micro-generation Interval Meter Readings to Retailers
	1.2 Common Abbreviations	No definition exists in current Rule 021	Nil GCM micro-generation Cumulative Meter Consumption to Retailers
	1.2 Common Abbreviations	No definition exists in current Rule 021	Nil GRN micro-generation Retailer Notification
	1.2 Common Abbreviations	No definition exists in current Rule 021	Nil GRS micro-generation Retailer Summary
3. Load Profiling Methods	3.5 Nil	Treatment of Micro-generation is not reflected	3.5 Nil Proposed to add new section 3.5 3.5 Micro-generation Customers with Interval Meters 1) If the wire owner complies with the request of a small micro-generation customer to install a bi-directional interval meter, the customer's micro-generation is deemed to be large micro-generation and the customer's load is settled according to its own interval data. 2) If the wire owner installs a bi-directional interval meter on a small micro-generation site, for some reason other than the customer's request, it is deemed to be small micro-generation and the generation is

Reference to the AUC Rule 021 section/number		Reason for change	Currently stated in the Rule	Proposed to change as:
				excluded from load settlement calculations. The MDM is responsible for GCM data provision. In addition, notwithstanding s. 3.4 2), the customer's load is settled according to the class profile, not according to its own interval data. The MDM will provide cumulative site consumption using DCM transactions instead of interval data using DIM transactions.
4. Load Settlement Calculation	4.6.1 Distribution Generation	Micro-generation is not reflected.	4.6.1 Distribution Generation” “1) Distributed generation includes all generation facilities connected to the distribution system capable of supplying energy onto the distribution system and includes but is not limited to wind power, small hydro and flare gas generation.”	Proposed to change as: 4.6.1 Distribution Generation “1) Distributed generation includes all generation facilities connected to the distribution system capable of supplying energy onto the distribution system and includes but is not limited to wind power, small hydro and flare gas generation. Micro-generation is exempt from s. 4.6.1 2). Small micro-generation is also exempt from s 4.6.1 3).
	4.6.4 Micro-Generation	Micro-generation is not reflected in current SSC. From an editorial perspective, put all MG under one section makes it easier for future changes.	Nil	Proposed to add a new section: 4.6.4 Micro-Generation As a result of the implementation of the Micro-generation Regulation, this section is written to deal with micro-generation. 1) Micro-generation Overview a. For all micro-generation sites: i. The site ID used to identify a unique end use service delivery point will also be used to identify a micro-generation site. ii. Micro-generation sites are subject to retailer enrollment based on existing SSC procedures and transactions that reference site ID. (Micro-generation is not enrolled and de-enrolled separately from the site)

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
			<ul style="list-style-type: none"> iii. Micro-generation sites are subject to energization and de-energization based on existing SSC procedures and transactions that reference site ID (Micro-generation is not energized and de-energized separately from the site). iv. In the event the retailer receives written confirmation from the micro-generation customer, the retailer will make a "micro-generation retirement request" to the WO. The WO will follow up according to their practices, issue a GRN transaction indicating the micro-generator's site is decommissioned and change the micro-generation indicator for the site in the SID transaction. v. The WO will indicate which sites are approved micro-generation sites using the SID transaction. <p>b. For large micro-generation sites:</p> <ul style="list-style-type: none"> i. There is a one to one relationship between site ID (load) and asset ID (generation) for micro-generation. Neither changes once assigned to the site. ii. The MDM will provide interval data to the LSA and ISO using DSM transactions. iii. The MDM will provide interval data to retailers using GIM transactions. iv. There is no requirement for retailers to provide information to the ISO to enable the ISO to credit retailers for large micro-generation.

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
			<p data-bbox="1446 240 1890 267">c. For small micro-generation sites:</p> <ul style="list-style-type: none"> <li data-bbox="1549 272 1984 357">i. The MDM will provide cumulative data to retailers using GCM transactions. <li data-bbox="1549 362 1984 568">ii. Small micro-generation is not subject to PFEC and PFAM rules as it is not included in load settlement. However, the same dispute resolution and data restatement rules apply to small micro-generation as to site load. <li data-bbox="1549 573 1984 933">iii. For a site that switches retailers between two meter readings, each retailer will determine the energy supplied out of the site while the site was enrolled to them by prorating the energy supplied out of the site in the meter reading period in proportion to the number of days the site was enrolled to them in accordance with the MDM's published deemed time rules <li data-bbox="1549 938 1984 1242">iv. Cumulative meter reads are not required on monthly boundaries. Although there is no requirement for both site load and generation meter registers to be read on the same day, WOs must make reasonable effort to take reads from all cumulative micro-generation sites at least once in each calendar month. <p data-bbox="1354 1279 1816 1307">2) Micro-generation Setup Processes</p> <ul style="list-style-type: none"> <li data-bbox="1446 1312 1848 1339">a. For all micro-generation sites: <li data-bbox="1549 1344 1984 1455">i. The micro-generation customer fills out the AUC application form (with site ID) and provides it to the WO. The WO returns the

Reference to the AUC Rule 021 section/number		Reason for change	Currently stated in the Rule	Proposed to change as:
				<p>application to the micro-generator who can use an approved application form to notify their retailer.</p> <p>b. For large micro-generation sites:</p> <p>i. Micro-generation applications are sent by the WO to the ISO who returns it to the WO with the assigned asset ID.</p> <p>ii. The ISO will develop MPDRs for large micro-generation.</p>
5. Dispute Resolution Process	5.3.1 Scope	Current section requires modification to properly reflect the Micro-generation	5.3.1 Scope Nil	Proposed to add: 5.3.1 Scope 6) Micro-generation disputes shall only be applicable to related transactions dated January 1, 2009 and later.
	5.3.2 Communications	Current section requires modification to properly reflect the Micro-generation	5.3.2 Communications Nil	Proposed to add: 5.3.2 Communications 4) Notwithstanding the exclusion from the load settlement in s 4.6.4, 1) c, the LSA shall act as the conduit for handling of small micro-generation dispute claims in accordance with s. 5 Dispute Resolution Process. 5) Each market participant shall ensure that systems and procedures are established and maintained with their operations sufficient to track and process small micro-generation dispute error claims on a timely basis in accordance with s. 5 Dispute Resolution Process.
6. Functional	6.4.1 Elements	Current section requires	6.4.1 Elements Required for Reporting	Proposed to add:

Reference to the AUC Rule 021 section/number		Reason for change	Currently stated in the Rule	Proposed to change as:
Requirements of the Core Load Settlement Calculation	Required for Reporting	modification to properly reflect the Micro-generation	<p>1) ZPODtT = Zone load which is determined by netting the hourly energy that:</p> <ul style="list-style-type: none"> enters the settlement zone at the system level through PODs, distributed generators distribution interchange import points with other settlement zones, isolated community generation and extra-provincial suppliers of border customers; and <p>Zone load for a settlement zone is intended to be the total of:</p> <ul style="list-style-type: none"> the hourly energy consumed by all sites within the settlement zone; and the hourly distribution energy loss incurred within the settlement zone to serve the sites within the settlement zone; and the hourly distribution energy loss incurred within the settlement zone to serve sites in other settlement zones through distribution interchange export points; and the hourly distribution energy loss incurred or saved to serve distributed generators. 	<p>6.4.1 Required Load Settlement Reports</p> <p>1) ZPODtT = Zone load which is determined by netting the hourly energy that:</p> <ul style="list-style-type: none"> enters the settlement zone at the system level through PODs, distributed generators (excluding small micro-generation), distribution interchange import points with other settlement zones, isolated community generation and extra-provincial suppliers of border customers; and <p>Zone load for a settlement zone is intended to be the total of:</p> <ul style="list-style-type: none"> the hourly energy consumed by all sites within the settlement zone; and the hourly distribution energy loss incurred within the settlement zone to serve the sites within the settlement zone; and the hourly distribution energy loss incurred within the settlement zone to serve sites in other settlement zones through distribution interchange export points; and the hourly distribution energy loss incurred or saved to serve distributed generators; less small micro-generation.
11. Performance Standards for Meter Data Managers Operating in the Province of Alberta	11.3.2.4 Estimation of Data	Current section requires modification to properly reflect the Micro-generation	11.3.2.4 Estimation of Data Nil	<p>Proposed to add:</p> <p>11.3.2.4 Estimation of Data</p> <p>"6) Estimation of data for large micro-generation a) Where no redundant metering or check metering exists, MDMs will initially estimate</p>

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
			<p>large micro-generation interval data at zero until successful conclusion of an investigation.</p> <p>b) MDMs may estimate large micro-generation based on relevant information, if it is available. Otherwise, large micro-generation will be reported as zero-</p>
11.3.2.6 Editing of Data (Data Replacement)	Current section requires modification to properly reflect the Micro-generation	<p>11.3.2.6 Editing of Data (Data Replacement)</p> <p>“3) MDMs shall report all System Level data variances by way of the PFAM process where such variance is not corrected in data used for initial daily, initial monthly, interim, or final settlement data provision within one calendar month of the discovery of the variance.”</p>	<p>Proposed to change:</p> <p>11.3.2.6 Editing of Data (Data Replacement)</p> <p>“3) MDMs shall report all System Level data variances, by way of the dispute process where such variance is not corrected in data used for initial daily, initial monthly, interim, or final settlement data provision within one calendar month of the discovery of the variance.”</p>
11.4 Cumulative Meter Data Performance Standards	Current section requires modification to properly reflect the Micro-generation	<p>11.4</p> <p>“The following section of the MDM Performance Standards deals with Cumulative Meters that are defined as Measurement Canada approved devices that measure and register the integral of an electrical quantity with respect to time. This section is also applicable to Virtual Metering Points that are effective points of measurement that may or may not be physically locatable. Virtual Metering Points are calculated values based on two or more Cumulative Meters.”</p>	<p>Proposed to change:</p> <p>The following section of the MDM Performance Standards deals with Cumulative Meters that are defined as Industry Canada approved devices that measure and register the integral of an electrical quantity with respect to time. This section is also applicable to Virtual Metering Points that are effective points of measurement that may or may not be physically locatable. Virtual Metering Points are calculated values based on two or more Cumulative Meters.”</p>
11.4.2.1 Validation Tests	Current section requires modification to properly reflect the Micro-generation	<p>11.4.2.1</p> <p>“The MDM shall validate all cumulative meters using the following validation tests. If the meter data passes the validation, the data shall be considered load settlement ready and shall be provided to the designated parties as per s. 11.4.4. Meter data that fails</p>	<p>Proposed to change as:</p> <p>11.4.2.1</p> <p>“The MDM shall validate all cumulative meters using the following validation tests. If the meter data passes the validation, the data shall be considered settlement ready and shall be provided to the designated parties</p>

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
		one or more validation tests, shall be verified by the MDM as specified in s. 11.4.2.2.1”	as per s. 11.4.4. Meter data that fails one or more validation tests, shall be verified by the MDM as specified in s. 11.4.2.2.1”
11.4.2.2 1) Verification of Data b)	Current section requires modification to properly reflect the Micro-generation	11.4.2.2 Verification, Editing and Estimation of Data 1)Verification of Data b) “If the MDM determines that the meter data is valid, then the original meter reading shall be considered settlement ready and shall be provided as Verified and Edited (VE) meter reading in DCM.”	Proposed to add: 11.4.2.2 Verification, Editing and Estimation of Data 1) Verification of Data b) “If the MDM determines that the meter data is valid, then the original meter reading shall be considered settlement ready and shall be provided as Verified and Edited (VE) meter reading in DCM and GCM. ”
11.4.2.2 2) Editing of Data (Data Replacement)	Current section requires modification to properly reflect the Micro-generation	11.4.2.2 Verification, Editing and Estimation of Data 2) Editing of Data (Data Replacement) b) If the Cancellation DCM and GCM as appropriate causes the condition where there is no reported meter reading for the past 2 months, then the MDM shall provide replacement data for the Cancellation DCM and GCM as soon as is practicable but in no circumstances greater than 20 Business Days from the date of the Cancellation DCM and GCM.”	Proposed to change 11.4.2.2 Verification, Editing and Estimation of Data 2) Editing of Data (Data Replacement) b) If the Cancellation DCM or GCM (as appropriate) causes the condition where there is no reported meter reading for the past 2 months, then the MDM shall provide replacement data for the Cancellation DCM and GCM as soon as is practicable but in no circumstances greater than 20 Business Days from the date of the Cancellation DCM and GCM.”
11.4.2.2 3) Estimation of Data	Current section requires modification to properly reflect the Micro-generation	11.4.2.2 Verification, Editing and Estimation of Data 3) Estimation of Data c) Nil	Proposed to add in 11.4.2.2 Verification, Editing and Estimation of Data 3) Estimation of Data c) Under the circumstances specified in a), the MDM shall provide a Site-specific estimate of small micro generation for the period from the last validated meter reading to a current date. That estimation should be zero for the generated energy unless other relevant

Reference to the AUC Rule 021 section/number	Reason for change	Currently stated in the Rule	Proposed to change as:
			information is available. The data shall be reported as Estimated (ES) meter reading in the GCM.
11.4.3 Data Storage	Current section requires modification to properly reflect the Micro-generation	11.4.3 Data Storage “In addition to requirement outline in the Electricity and Gas Inspection Regulations, the MDM shall store all original meter readings, validation results, estimated readings, issued DCMs, and cancelled DCMs for a period of at least 24 months from the last date revision date.”	Proposed to change: 11.4.3 Data Storage “In addition to requirement outline in the Electricity and Gas Inspection Regulations, the MDM shall store all original meter readings, validation results, estimated readings, issued DCMs, cancelled DCMs, issued GCMs and cancelled GCMs, for a period of at least 24 months from the last date revision date.”
11.4.5 Data Performance Metrics	Current section requires modification to properly reflect the Micro-generation	11.4.4 Data Performance Metrics 3) Nil	Proposed to add: 11.4.4 Data Performance Metrics 3) All micro-generation sites shall have their meters read at least once in each calendar month.

Proposed to add on Table 6 of the SSC to cover the micro-generation transactions:

Table 6. Business Process Flows and Transaction Sets Required for Load Settlement

Transaction Set	Transaction	Standard Content Required?	Electronic Transmittal Required?
Micro-generation	A. Micro-Generation Interval Meter Readings to Retailers (GIM)	√	√
	B. Micro-Generation Cumulative Meter Consumption to Retailers (GCM)	√	√
	C. Micro-Generation Retailer Notification (GRN)	√	√
	D. Micro-Generation Retailer Summary (GRS)	√	√

Proposed to add on Table 51 Transaction Status Codes:

Table 51. Transaction Status Codes

Status Code	Description	Applicable Transaction	Transaction w/o Status	Section Causing Error	Field Causing Error
0003	Invalid meter data manager ID	GIM			Meter Data Manager ID
0003	Invalid meter data manager ID	GCM			Meter Data Manager ID
0004	Invalid meter data manager ID for site	GIM			Meter Data Manager ID
0004	Invalid meter data manager ID for site	GCM			Meter Data Manager ID
0005	Invalid retailer ID	GIM			Retailer ID
0005	Invalid retailer ID	GCM			Retailer ID
0005	Invalid retailer ID	GRS			Retailer ID
0005	Invalid retailer ID	GRN			Retailer ID
0005	Invalid retailer ID		GRN		Retailer ID
0008	Invalid retailer ID for site	GIM			Retailer ID
0008	Invalid retailer ID for site	GCM			Retailer ID
0011	Invalid wire services provided ID	GRN			Wire Services Provider ID
0013	Invalid site ID	GIM			Site ID
0013	Invalid site ID	GCM			Site ID
0013	Invalid site ID	GRN			Site ID
0013	Invalid site ID		GRS		Site ID
0020	Invalid Socket ID	GIM			Socket ID
0020	Invalid Socket ID		GRN		Socket ID
0021	Transaction Status Code must be blank	GCM			Transaction Status Code
0021	Transaction Status Code must be blank	GIM			Transaction Status Code
0024	Invalid number of fields in the transaction	GIM			
0024	Invalid number of fields in the transaction	GCM			
0024	Invalid number of fields in the transaction		GRN		

Status Code	Description	Applicable Transaction	Transaction w/o Status	Section Causing Error	Field Causing Error
0024	Invalid number of fields in the transaction		GRS		
0026	Invalid business function ID	GCM			Business Function ID
0026	Invalid business function ID	GIM			Business Function ID
0026	Invalid business function ID		GRN		Business Function ID
0203	From invalid - format, length, missing		GRS		From
0204	To invalid - format, length, missing		GRS		To
0501	Meter Number invalid - format, length	GCM			Meter Number
0505	Last Reading Date Time invalid – format, length	GCM			Last Reading Date Time
0506	Current Date Time invalid – format, length	GCM			Current reading Date Time
0507	Last Meter Dial Reading invalid – format, length	GCM			Last Meter Dial Reading
0508	Current Meter Dial Reading invalid – format, length	GCM			Current Meter Dial Reading
0511	Meter Multiplier invalid – format, length, missing	GCM			Meter multiplier
0515	Record Status invalid – format, length	GCM			Record Status
0516	Cumulative meter read to be cancelled does not exist	GCM			Record Status
0517	Fields differ from original Meter Read, cancel aborted	GCM			Record Status
0518	Use of one of the Meter Read dates would create an overlap	GCM			Record Status
0519	CA record encountered after regular reads, Cancel aborted	GCM			Record Status
0552	KW invalid – format, length	GIM			kW
0553	kWh invalid – format, length	GIM			kWh
0553	kWh invalid - format, length	GCM			kWh
0553	kWh invalid - format, length		GRS		kWh
0558	Date Time invalid – format, length, missing	GIM			Date Time
0559	Interval Period invalid- format, length, missing	GIM			Interval Period
0560	Hour Ending Invalid – format, length	GIM			Hour Ending
0561	Demand (kW) Status invalid - format, length, missing	GIM			Demand (kW) Status
0570	Energy (kWh) Status invalid - format,	GCM			Energy (kWh) Status

Status Code	Description	Applicable Transaction	Transaction w/o Status	Section Causing Error	Field Causing Error
	length, missing				
0570	Energy (kWh) Status invalid - format, length, missing	GIM			Energy (kWh) Status
0571	Invalid Asset ID - format, length, missing	GIM			Asset ID
0571	Invalid Asset ID - format, length, missing		GRN		Asset ID
0572	Invalid Micro-generator indicator		GRN		Micro-generator Indicator
0573	Date Time Effective invalid - format, length, missing		GRN		Date Time Effective
0574	Rate - format, length, missing		GRS		Rate
0575	Total - format, length, missing		GRS		Total

Part 2:

The following tables are the proposed transactions that related to micro-Generation. All these transactions have been recommended by both the Transaction and Billing Working Groups. These transactions will be included in the AUC Rule 021.

9.6.1.1. a) Micro-Generation Interval Meter Readings to Retailers – Process Rules

- 1) This transaction is used for reporting electric energy supplied out of the large micro-generator sites.
- 2) Each transaction is sent to retailer identified in the transaction
- 3) It is required only while the site is energized and the micro-generator site is commissioned. Gaps during such periods are unacceptable.
- 4) If a record is to be replaced, a replacement interval is provided. There is no distinction that it is a replacement record.
- 5) Status flags are mandatory for inclusion with all GIM transactions.
- 6) GIM and DSM volumes must be equivalent for the same Asset ID and same period.

Table 15.A GIM Transaction Layout

Sequence	Element	Data Type/Size	Description
1	Transaction Abbreviation	'GIM'	Abbreviation for the transaction name
2	Date time	Date time format	Latter of the time the transaction was created or last modified
3	MDM ID	MDM ID format	Sender (MDM responsible to read the meter)
4	Retailer ID	Retailer ID format	Recipient (Retailer currently associated with the site)
5	Business Function ID	Varchar (2)	Optional at the discretion of the WSP
6	Site ID	Site ID format	See definition in Universal Standard section of this document
7	Socket ID	Socket ID format	See definition in Universal Standard section of this document
8	Asset ID	Varchar (10)	Identifier assigned by the AESO to the micro-generator
9	kW	Number (10,4)	Kilowatt demand supplied out of the site for the interval period
10	kWh	Number (10,4)	Kilowatt hour energy supplied out of the site for the interval period
11	Datetime	Datetime format	End Date and Time for the reading
12	Interval Period	Number (4)	Number of minutes between readings
13	Hour Ending	Char (3)	See definition. Third character is to be used for asterisk as described in the definition, but otherwise blank.

14	Demand (kW) status	Char (2)	Describes the type of meter reading ME – Actual from meter ES – Estimated
15	Energy (kWh) Status	Char (2)	Describes the type of meter reading ME – Actual from meter ES – Estimated
16	Transaction Status Code	Char (4)	Used by the recipient to notify the sender of problems with the transaction. When this field is used it must be dealt with at a minimum, in a manual fashion. The use of this electronic transaction in an automated fashion (in case of problems) is subject to the WO T&Cs. When using transaction status codes, the codes in s. 9.8 must be used.

9.6.1.2 a) Micro-Generation Cumulative Meter Consumption to Retailers – Process Rules

1) GCM Date Time Usage

- a) The “Transaction Date Time” field shall be populated with the later of the time the transaction was created or last modified.
- b) The “Current Reading Date Time” field of the GCM shall be populated with actual or deemed values, at the discretion of the MDM. If a deemed value is used, the time must be within 24 hours of the actual read.
- c) The “Last Reading Date Time” field of the GCM must be identical to the “Current Reading Date Time” field of the prior GCM for the same Site except when the energize status of a Site has changed.
- d) There must be a difference between the “Last Reading Date Time” field of a GCM transaction and the “Current Reading Date Time” field of the same GCM transaction.
- e) Gaps between the “Last Reading Date Time” field of a GCM transaction and the “Current Reading Date Time” field of the prior GCM transaction are only permitted when a Site is in a de-energized state or the micro-generator site is de-commissioned.
- f) The “Last Meter Dial Reading” field of a GCM transaction must be identical to the “Current Meter Dial Reading” field from the prior GCM transaction, when the meter is unchanged.

2) GCM Data Provision

- a) In the event of a retailer switch during the meter reading period, the MDM shall provide the meter read to the retailers.

3) GCM Cancellation

a) Single GCM Cancellation

- i) The MDM will indicate specifically which record to cancel by sending a cancellation GCM indicated by “CA” in the Record Status field. All cancellation GCM fields should match exactly to the GCM to be cancelled except for the following fields:
 - Transaction Date time
 - Record Status
 - Transaction Status Code
- ii) Records with a “CA” status should appear first in every file.

b) GCM Status Flags

The following data status flags must be included with all GCM transactions:

Table 17.A GCM Status Flag Codes

Code	Meaning
ME	Passed validation tests as described in s. 11.4.2.1
ES	Estimated
VE	Verified and Edited

Table 17.B GCM Transaction Layout

Sequence	Element	Data Type/Size	Description
1	Transaction Abbreviation	GCM	Abbreviation for the transaction name
2	Transaction Date time	Date time format	Latter of the time the transaction was created or last modified
3	MDM ID	MDM ID format	Sender (MDM responsible to read the meter)
4	Retailer ID	Retailer ID format	Recipient (Retailer currently associated to the site)
5	Business Function ID	Varchar (2)	Optional at the discretion of the WSP
6	Site ID	Site ID format	See definition in Universal Standard section of this document
7	Meter Number	Varchar (20)	Meter Number
8	kWh	Number (8,2)	Kilowatt hour energy supplied out of the site between the last and current readings.
9	Last Reading Datetime	Datetime format	Date and time of the last reading
10	Current Reading Datetime	Datetime format	Date and time of the current reading
11	Last Meter Dial Reading	Number (10)	The previous dial reading taken from the meter
12	Current Meter Dial	Number (10)	The current dial reading taken from the meter
13	Meter Multiplier Number	Number (6,1)	Meter multiplier
14	Energy (kWh) Status	Char (2)	Char (2) Describes the type of meter reading. Refer to GCM status flags code table under process rules.
15	Record Status	Char (2)	CA – Cancelled. This code indicates that the receiver should cancel their version of this exact record. Sending this record eliminates confusion of the records purpose; especially

Sequence	Element	Data Type/Size	Description
			when the replacement record may not cover the same period as this cancelled record.
16	Transaction Status Code	Char (4)	Used by the recipient to notify the sender of problems with the transaction. When this field is used it must be dealt with at a minimum, in a manual fashion The use of this electronic transaction in an automated fashion (in case of problems) is subject to the WO T&Cs. When using transaction status codes, the codes in s. 9.8 must be used.

9.6.3.5 - Micro-Generation Retailer Notification – Process Rules

- 1) The Micro-Generation Retailer Notification (GRN) transaction consists of information about the micro-generator site setup. If the Site has more than one associated Socket, a transaction will be sent for each Socket. This transaction allows for different meters at the same Socket measuring different functions. This transaction is sent to the Retailer and the ISO:
 - a) on a change in operational status (commissioned/decommissioned) at the site
 - b) on a successful retailer enrollment at the site
- 2) The WSP is responsible for producing this transaction and sending it to the retailer.
- 3) This transaction is used in conjunction with the SMC transaction to identify the periods of time during which a complete set of GIM or GCM transactions must be provided by the MDM.
- 4) A GRN transaction must be provided for a commissioned micro-generation site within 5 business days of a retailer switch.

Table 30.A GRN Transaction Layout

Sequence	Element	Data Type/Size	Description
1	Transaction Abbreviation	'GRN'	Abbreviation for the transaction name
2	Transaction Date time	Date time format	Date the transaction was created
3	Wire Services Provider ID	Wire Services Provider ID format	Sender
4	Retailer ID	Retailer ID format	Recipient
5	Business Function ID	Varchar (2)	Optional at the discretion of the WSP
6	Site ID	Site ID format	See definition in Universal Standard section of this document
7	Socket ID	Socket ID format	See definition in Universal Standard section of this document
8	Asset ID	Varchar (10)	Required for large micro-generator sites only
9	Date time Effective	Datetime format	Date and time the micro-generator indicator is effective
10	Micro-generator Indicator	Char (1)	Y – Micro-generator is commissioned N – Micro-generator is decommissioned

9.6.6.3 a) Micro-Generation Retailer Summary – Process Rules

This transaction is used by retailers to submit a generation credit summary report for each small micro-generator’s site to the ISO on a monthly basis.

- 1) Retailers will submit only one GRS transaction file to the ISO each month for all small micro-generator sites enrolled with the retailer in that month.
- 2) A cancel transaction is indicated by negative values in the “kWh” and “Total” elements.
- 3) The ISO will list the file name and the “Total” elements on the retailer’s pool statement.
- 4) The “From” “To” date range that defines the billing period cannot span a calendar month boundary.
- 5) Where a meter read period spans the calendar month boundary, the Retailer will pro-rate the energy volume based on number of days within the billing month period using the MDM’s published deemed time rules.
- 6) Retailers must submit this file by 23:59 of the 2nd business day of the month to be included in the preliminary pool statement and by 23:59 of the 10th business day of the month to be included in the final pool statement.

Table 37.A GRS Transaction Layout

Sequence	Element	Data Type/Size	Description
1	Transaction Abbreviation	‘GRS’	Abbreviation for the transaction name
2	Transaction Date time	Date time format	Date the transaction was created
3	Retailer ID	Retailer ID format	Sender
4	ISO Financial ID	ISO Financial ID format	Recipient
5	Site ID	Site ID format	See definition in Universal Standard section of this document
6	From	Date format	The date of the first day in the period over which the energy in the “kWh” field was supplied out of the site. (YYYYMMDD)
7	To	Date format	The date of the last day in the period over which the energy in the “kWh” field was supplied out of the site. (YYYYMMDD)
8	kWh	Number (8,2)	Kilowatt hour energy supplied out of the site between and including the “From” and “To” dates. Signed values allowed.
9	Rate	Number (8,4)	The retailers retail energy rate for the site in dollars per kWh.
10	Total	Number (8,2)	Total credit for the site in dollars (kWh x rate rounded to 2 decimal places). Signed values allowed.

9.4.6.14 Site ID catalogue (SID)

The following element is added to the end of the SID record.

Table 14. SID Transaction Layout

Sequence	Element	Data Type/Size	Description
34	Micro-generator Indicator	Char (1)	Y – Micro-generator is commissioned N – Micro-generator is decommissioned or does not exist