

Proposed changes to the registry ICP switching process

Consultation Paper

14 May 2012

Executive summary

- 1.1.1 Part 10 of the Electricity Industry Participation Code 2010 (Code) establishes the regulatory framework for metering in the New Zealand electricity industry.
- 1.1.2 The Electricity Authority (Authority) has approved a new Part 10 and associated amendments to Parts 1, 11 and 15 to develop a new set of metering arrangements that will be effective from 6 June 2013 (new Part 10).
- 1.1.3 The new Part 10 requires significant changes to the Authority's electricity registry (registry) and to participants' systems that interface with the registry.
- 1.1.4 The Authority previously proposed a three week registry switching moratorium to enable the implementation of the new Part 10 registry enhancements. Participants asked the Authority to reconsider the proposed three week registry switching moratorium given current volumes of customer switching.
- 1.1.5 The Authority now proposes a solution that will significantly reduce the duration of the registry switching moratorium and is seeking industry feedback on the proposal. The issue requires urgent resolution so that requirements for the registry and traders' systems can be finalised.
- 1.1.6 A Code amendment is not required for the proposed solution.

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
Authority	Electricity Authority
Board	Board of the Electricity Authority
Code	Electricity Industry Participation Code 2010
HHR	Half-hour
ICP	Installation control point
MEP	Metering equipment provider
NHH	Non half-hour

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2. Introduction and purpose of this paper

2.1 Introduction

- 2.1.1 The Authority has approved a new Part 10 and associated amendments to Parts 1, 11 and 15 to develop a new set of metering arrangements that will be effective from 6 June 2013.
- 2.1.2 The new Part 10 requires significant changes to the registry. The registry is a real time national database of record for points of connection to networks that are installation control points (ICPs). It facilitates the switching of ICPs between traders (also known as customer switching) and interfaces directly with the reconciliation manager, and with traders' and distributors' systems.
- 2.1.3 The Authority previously proposed a three week moratorium for ICP switching in the registry to allow for implementation of the Part 10 registry enhancements prior to go live on 6 June 2013. ICP switching would continue outside the registry during this time and switch information updated in the registry following implementation.
- 2.1.4 Participants have asked the Authority to reconsider the proposed three week registry switching moratorium given current volumes of customer switching. The Authority has developed an alternative solution that will considerably shorten the switching moratorium.

2.2 Purpose of this paper

- 2.2.1 The Authority is seeking feedback on proposed changes to the ICP switching process in the registry that will:
- (a) significantly reduce the duration of the registry switching moratorium; and
 - (b) future proof switching message formats.
- 2.2.2 No Code amendment is required for the proposed solution but it does affect how participants operate their systems.

2.3 Submissions

The Authority's preference is to receive submissions in electronic format (Microsoft Word). It is not necessary to send hard copies of submissions to the Authority, unless it is not possible to do so electronically. Submissions in electronic form should be emailed to submissions@ea.govt.nz with Consultation Paper—Proposed changes to the registry ICP switching process in the subject line.

If submitters do not wish to send their submission electronically, they should post one hard copy of their submission to the address below.

Submissions
Electricity Authority
PO Box 10041
Wellington 6143

Submissions
Electricity Authority
Level 7, ASB Bank Tower
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- 2.3.1 Submissions should be received by 5pm on Thursday 31 May 2012. Please note that late submissions are unlikely to be considered.
- 2.3.2 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.
- 2.3.3 If possible, submissions should be provided in the format shown in Appendix A. Your submission is likely to be made available to the general public on the Authority's website. Submitters should indicate any documents attached, in support of the submission, in a covering letter and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.

3. ICP switching moratorium in registry

3.1 Background

- 3.1.1 When a customer decides to change the retailer that supplies it with electricity, the change is recorded in the registry using a sequence of messaging between the gaining and losing traders. This process is known as ICP switching.
- 3.1.2 The registry is undergoing significant changes to accommodate the requirements of the new Part 10. These enhancements include the population of new metering records and the establishment of metering equipment providers as a new class of participant which means that a new “MEP” user type and interfaces are required.
- 3.1.3 The Authority discussed the implementation of the new registry with participants at a Part 10 implementation forum held on 22 February 2012. The Authority proposed a three week moratorium for ICP switching in the registry during the transition phase of the project to allow the new Part 10 registry software to be deployed, existing registry records to be migrated into the new registry, and MEPs to populate metering records into the new registry.
- 3.1.4 The Authority also proposed that ICP switching should continue outside the registry during the three week registry switching moratorium, with disconnections limited to prevent inappropriate customer disconnections.
- 3.1.5 Participants have asked the Authority to:
- (a) reconsider the proposed three week registry switching moratorium given the high switching volumes that are currently being achieved; and
 - (b) consider changes to the switching methodology to future proof switching message formats.
- 3.1.6 Participants also advised that the cost of putting in place a switching process outside of the registry and limiting disconnections would be costly, inefficient, and possibly not effective.

4. Proposed solution

4.1.1 The Authority proposes an improvement that would:

- (a) reduce the registry switching moratorium to two - three business days;
- (b) provide improved information to traders at the time of an ICP switch; and
- (c) future proof switching message formats by ensuring that the switch process can be easily adapted to suit any subsequent switching changes that may be required e.g. mass market half-hour switching.

New switch message would reduce the registry switching moratorium to 2 – 3 days

4.1.2 The Authority considers that a significantly reduced switching moratorium could be achieved by introducing additional functionality in the registry software to enable the existing switch process to continue while the new registry is being transitioned into production and MEPs populate metering records.

4.1.3 A new switch message, the “CS” or Complete Switch Message Type, would be introduced to enable the existing switch completion messages (TN and TT for the completion of non half-hour and half-hour switches respectively) to be processed during the transition phase. Traders would continue to use the TN and TT messages until the new Part 10 becomes effective on 6 June 2012. The new CS message would then permanently replace the TN and TT messages i.e. the existing TN and TT messages would be ‘switched off’ late on 5 June 2013 and the new CS message would be ‘switched on’ early on 6 June 2013.

4.1.4 A registry moratorium would still be required for around three business days during the registry outage to deploy the new registry, but for the remainder of the transition period, current switching processes could remain operational.

4.1.5 Switches not completed before the start of registry ICP switch moratorium would not need to be withdrawn; they could be completed after the moratorium using existing processes. However, on 5 June 2013, traders would be required to withdraw any switches that were still incomplete and remake those switches on 6 June 2013 using the new CS switch message.

4.1.6 While a Code amendment is not required to implement the proposed solution, a transitional Code amendment to recognise that traders could not meet their Code obligations for switching period during the two - three day switching moratorium, and withdrawal and remaking of switches over 5/6 June would still be required.

4.1.7 The proposed timeline to transition the new Part 10 registry into production is represented in Figure 1.

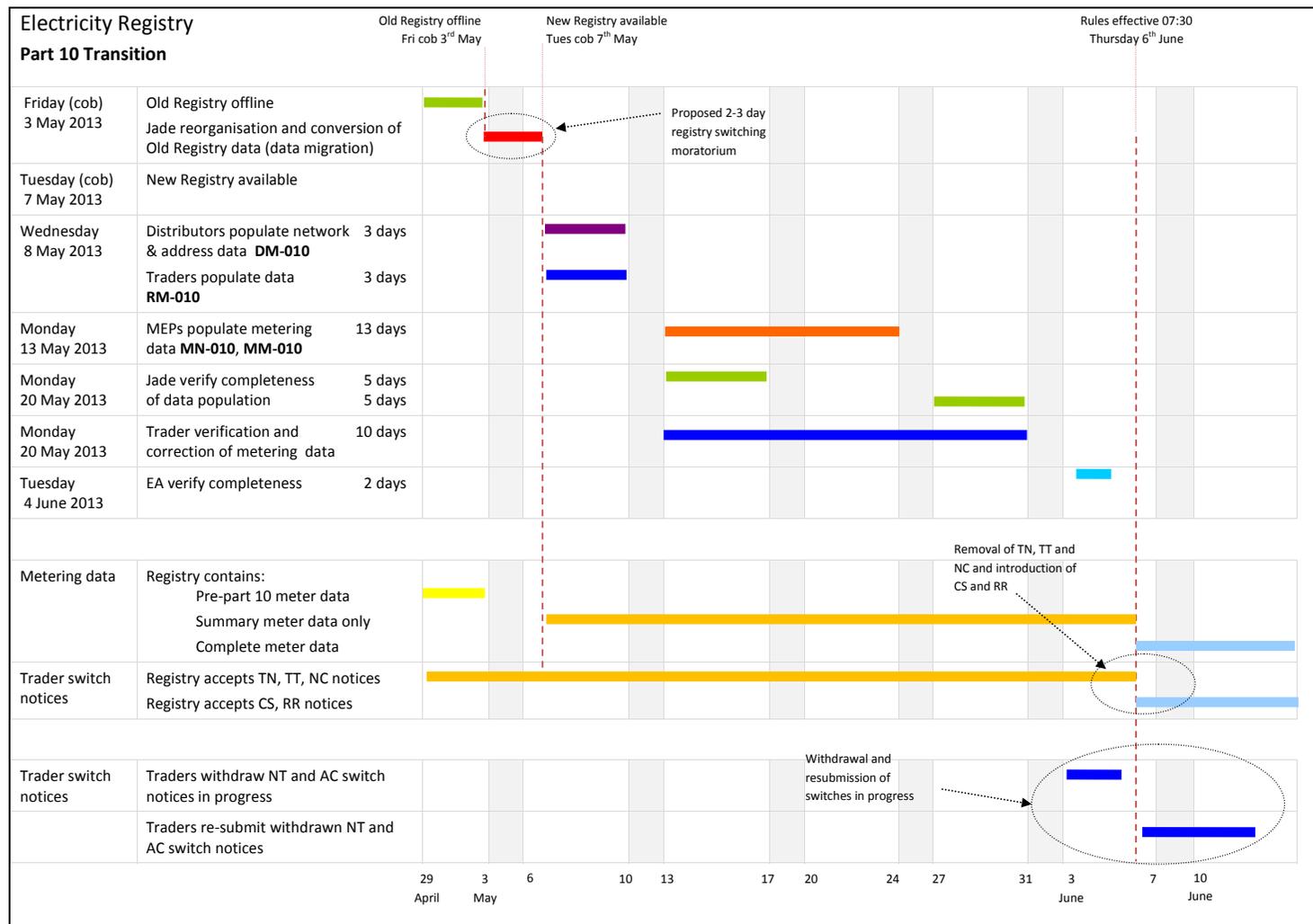


Figure 1: Proposed timeline for Part 10 registry transition

5. Proposed new CS switch message

5.1 Format of proposed CS switch message

5.1.1 The proposed new CS message would be similar to the existing TN message. It would allow for the switching of an ICP that contains:

- (a) only non half-hour (NHH) metering installations;
- (b) only half-hour (HHR) metering installations; and
- (c) both NHH and HHR metering installations.

5.1.2 The format of the proposed CS message would retain the ability to advise the gaining trader of:

- (a) the actual transfer date of a switch;
- (b) a validated meter reading or a permanent estimate for NHH metering installations at the ICP;
- (c) a 'keys held' indicator;
- (d) meter reader notes; and
- (e) the 'last read' date.

5.1.3 The format and business rules of the proposed CS message are shown in Appendix B.

5.1.4 The proposed new CS message:

- (a) would not provide the metering installation information that is currently provided in the TN message. This is discussed in section 5.2.
- (b) can be used to replace the NC message, rather than amend it. This is discussed in section 5.3.
- (c) would enable the current switch types (S, SM, H, HM, HN, NH) to be rationalised to two new switch types. This is discussed in section 5.4.

5.2 Metering installation information would be provided in the event detail report

5.2.1 To implement the new Part 10, the Authority previously proposed to use the TN message to provide metering information to the gaining trader, and a new report, PR-150, for the registry to provide information on the metering installations to participants.

5.2.2 The proposed new CS message would not provide the metering installation information that is currently provided in the TN message. The Authority proposes

that the registry metering records be provided to the gaining trader on completion of a switch, using the registry's existing "event detail report" (PR-030). This report would be expanded to include all metering records as part of the processing of the CS message. The expanded PR-030 would mean that the proposed new PR-150 would no longer be required.

- 5.2.3 It is proposed to record in the event detail report a snapshot of the ICP's events 'as at' the same date that the CS message is passed to the gaining trader, and deliver the event detail report to the gaining trader overnight. The snapshot event detail report of each completed switch would include the latest details of every event – Network, Address, Distributor Pricing, Trader, Metering records, and Status information.
- 5.2.4 The registry will act as the database of record for reconciliation and metering records. Not all of the metering records delivered in the event detail report will be necessary in order for traders to fulfil their Code obligations. A trader could choose to update their systems with the portions of the event detail report required to meet its information requirements and discard what it did not require, and query the registry individually when more detailed information is required.
- 5.2.5 A trader would be able to set whether it required this report or not and the format (which may be either csv or xml).

5.3 NC switch read change message would also be replaced

- 5.3.1 The Authority proposes that the same CS message format could be utilised to initiate a change in switch read when a trader (gaining or losing) requests a change to the validated meter readings or permanent estimates provided when an ICP switches between traders. This replacement reading switch message type, that would be termed the RR for differentiation, would replace the existing NC switch message type.
- 5.3.2 The only difference in processing for the proposed RR processing would be that the metering information would be validated by the registry against the latest metering installation records applicable at the actual switch date, rather than against the original switch completion message (TN). This would take account of the possibility that metering installation records could be updated during the period between the input of the CS and the input of the RR.
- 5.3.3 It is proposed that the NC message would be permanently removed from operational use on the evening of 5 June 2013, and the proposed RR message would be available for use early on 6 June 2013.
- 5.3.4 By having new message types for the switch completion and replacement meter readings, the TN and TT messages would remain in the system for historical

purposes with their formats unchanged. Although the TN and TT message types would be turned off on 5 June 2013 the existing records would remain in the registry. This would mean that there would no risks associated with migrating historical data to a new format. All reporting would recognise the old and new formats.

5.4 Number of switch types would be reduced

5.4.1 The Authority proposes removing the current switch types – S, SM, H, HM, HN, NH – and replacing them with two new types – Move In switch (MI) and Standard Trader Switch (TR). These two new switch types would be contained within the proposed new CS message.

5.4.2 This change would reduce or remove the need for a subsequent change to the switching message formats by ensuring that the switch process can be easily adapted to suit any subsequent switching changes that may be required.

5.5 Advantages of the proposed CS switch message

5.5.1 The advantages of the proposed CS message are:

(a) Registry switching moratorium is significantly reduced

The reduction of the registry switching moratorium period to around three business days during the registry outage significantly reduces the business impact on traders, disconnection risk to consumers.

(b) Switching can continue through the registry implementation period

The introduction of the proposed new switch message will enable consumers to continue to change traders during the extended registry implementation period. The existing TN and TT messages will continue to be used during the transition process to complete switches prior to 6 June 2013. The new CS and RR messages will then be available for use from that date (the new registry will not recognise the TN and TT switch messages from 6 June 2013).

(c) Message format is aligned with trader requirements

(i) The format of the proposed CS message will more closely match the new structure for the metering installation level information that will be held in the registry. There is no metering installation level in the existing TN message type.

(ii) Only minimum information is required to be completed in the new CS message format and the processing is less complex. Most of the information in the current TN message is now held within the metering installation records of every ICP in the registry and therefore

contains information that is best sourced independently from the registry.

- (iii) By generating a snapshot event detail report (PR-030 in the revised functional specification) for each switch, all information about an ICP is provided to the gaining trader with the correct metering records for each metering installation, and not the partial information provided by the current TN format.
- (d) Functionality is improved
 - (i) There may be a cost saving by using the existing event detail report for metering installation information, instead of creating the previously proposed new PR-150 report.
 - (ii) Using the existing event detail report to transfer metering installation data will provide a more secure way for participants to obtain this data.
- (e) Mixed metering installation switches are enabled
 - (i) ICPs with both HHR and NHH metering installations have required manual handling in the past. Although there are currently few ICPs with both metering installation types, there is a possibility that the number may increase where an ICP has more than one meter or metering installation, and one of the meters becomes an AMI HHR meter.
 - (ii) By making the party that determined the expected switch date input the switch completion message, gaining traders are able to input final information for NHH meters where there is a mix of NHH and HHR meter types at an ICP.
- (f) The new message type is 'future proofed'
 - (i) The proposed CS message will future proof switching message formats by ensuring that the switch process can be easily adapted to suit any subsequent switching changes that may be required.
 - (ii) Such future changes would be consulted on separately with the industry at a later time and may include, but are not limited to:
 - *Mass market switching of HHR meters:* ICPs with HHR certified metering installations are currently dealt with by a manual process within participants' systems, as historically these have been large sites. With the availability of AMI HHR certified metering installations, many switches of mass market ICPs may become HHR, so manually handling these switches would not be efficient, and would cause considerable cost and inconvenience to consumers and traders; and

- *Switch event business rules*: there may be a need to consider the business rules around who nominates the ICP switch event date and provides the ICP switch meter read.

5.6 Disadvantages of the proposed CS switch message

5.6.1 The disadvantages of the proposed CS message are:

- (a) a new switch message is required to be accepted and processed by the registry and participants' systems;
- (b) it requires a change to the current switching process within participants' systems;
- (c) it requires a change to the current way that participants' systems receive metering records. Participants would need to develop the functionality to receive the proposed expanded PR-030 event detail report (however a trader could choose to update their systems with only the portion of the event detail report required to meet its information requirements and discard what it did not require); and
- (d) the registry will require changes to the event detail report, the switch breach reports, and some Authority reports, to recognise the new switch message.

5.7 Evaluation of the costs and benefits of the proposal

5.7.1 While implementation of the proposal would impose costs on traders and the registry (to implement a new switch message and reports, as discussed in 5.6 above), there are also significant benefits in;

- (a) reducing the switching moratorium from the original proposal of over three weeks to about three business days; and
- (b) reducing or removing the need for subsequent changes to the switching message formats by ensuring that they can be easily adapted to suit any subsequent switching process changes that may be required, such as any changes to enable mass market HHR ICP switching.

5.7.2 The Authority also notes that trader and registry costs to amend the existing switch messages (which would no longer need to be amended if this option is adopted) were included in the original Part 10 cost benefit analysis, and should be removed from participant costs for an evaluation of this option to provide a net change figure.

5.7.3 The Authority expects that there would not be a significant difference in development costs to create a new CS switch message within the registry, compared to changing the TN switch message processing.

5.7.4 The Authority has estimated the cost and benefit of building the new switch interface, and also the resultant savings that would occur during the implementation period and subsequent amendments to the switching process, in Table 1 below. This analysis assumes that there would be no change to MEP costs to implement the expanded event detail report (PR-030) compared to the costs to implement the new PR-0150 report that had previously been proposed.

Table 1: Estimated one off cost and benefit net of existing Part 10 costs to implement new CS switch messages and reduce the registry switching moratorium.

Item	Registry		Traders		Total costs	Total benefits
	Estimated \$	No. affected	Estimated \$ per participant	No. of participants affected	Estimated \$	Estimated \$
Cost to amend registry	\$90,000	1	\$0	14	\$90,000	
Net cost to provide new files (i.e. less the cost of amending existing files)	\$0	1	\$100,000	14	\$1,400,000	
Net cost to use PR-030 event detail report (i.e. less the cost of the PR-150 expanded ICP asset list file).	\$0	1	\$30,000	14	\$420,000	
<u>Total estimated costs</u>					<u>\$1,910,000</u>	

Benefit of reduced registry switching moratorium	\$0	1	\$20,000	14		\$280,000
Benefit of no future cost for switching changes to allow mass market HHR switching	\$130,000	1	\$140,000	14		\$2,090,000
<u>Total estimated benefits</u>						<u>\$2,370,000</u>

5.7.5 The estimated figures indicate that the benefit of the proposed change would exceed the cost, without taking into account any future operational benefits that may arise.

6. Questions

- Q1.** Do you agree that the switch moratorium should be reduced to as short a period as possible? Please give reasons.
- Q2.** Do you agree that the CS/RR switch messages should be introduced to replace the TN/TT switch messages? Please give reasons for your answer.
- Q3.** Do you agree with the proposed CS file structure? Are there alternatives that should have been considered? Please give reasons.
- Q4.** Is there any additional information that should be provided in the proposed CS/RR switch message? Please give reasons.
- Q5.** Do you agree that the metering installation information in the event detail report provided with each CS switch completion should be automatically generated for all switches or should it be optional? Please give reasons.
- Q6.** Do you agree with the replacement of the current switch types S, SM, H, HM, HN and NH – with two new types – Move In switch (MI) and Standard Trader Switch (TR)?
- Q7.** Do you agree with the costs and benefits? If not, can you provide estimated values for the costs and benefits of the proposed introduction of the new CS file and the reduction in the duration of the switch moratorium? Please refer to paragraph 2.3.3 above if this information is confidential.

Appendix A Format for submissions

No.	Question	Response
Q1.	Do you agree that the switch moratorium should be reduced to as short a period as possible? Please give reasons.	
Q2.	Do you agree that the CS/RR switch messages should be introduced to replace the TN/TT switch messages? Please give reasons for your answer.	
Q3.	Do you agree with the proposed CS file structure? Are there alternatives that should have been considered? Please give reasons.	
Q4.	Is there any additional information that should be provided in the proposed CS/RR switch message? Please give reasons.	
Q5.	Do you agree that the metering installation information in the event detail report provided with each CS switch completion should be automatically generated for all switches or should it be optional? Please give reasons.	
Q6.	Do you agree with the replacement of the current switch types S, SM, H, HM, HN and NH – with two new types – Move In switch (MI) and Standard Trader Switch (TR)?	
Q7.	Do you agree with the costs and benefits? If not, can you provide estimated values for the costs and benefits of the proposed introduction of the new CS file and the reduction in the duration of the switch moratorium? Please refer to paragraph 2.3.3 above if this information is confidential.	

Appendix B Proposed new switching message as a replacement for the TN and TT messages

Sub-process:	RS-050 Complete switch or replace switch reading (CS and RR)
Process:	Traders switch ICP
Participants:	Traders
Code references:	Clauses 1 to 22 of Schedule 11.3 of the Code
Dependencies:	MP-020, PR-030

Description:

This message is used to send final information to complete a switch. For ICPs with Meter Types of HHR or for MI switch types (move-in switches) it is submitted by the gaining Trader to the Registry. For all other switch types it is sent by the losing Trader to the Registry. The Registry forwards the message to all interested parties and generates a new Trader event that records the new Trader.

For ICPs with only Meter Types of NHH and/or PP, the submitter is required to provide channel readings for all existing non half-hour metering components with channels that have a settlement indicator of 'Y'.

For all other ICPs, the submitter is required to provide the actual transfer date, and, if there are any existing NHH metering components, they must provide readings for all non half-hour metering components with channels that have a settlement indicator of 'Y'.

This message type can also be used to change the readings in accordance with clauses 6 and 12 of Schedule 11.3. In this case it is only the gaining Trader that submits it to the registry where it is delivered to the losing Trader and only where it was the losing Trader that submitted the original CS. The original CS remains in the system. The 'correction' version of this format will have a message type of RR to distinguish it from the original CS.

As part of the CS message delivery, the system will also provide (only the new Trader with an additional file overnight containing the latest ICP event details, of every event type, for every ICP delivered in any CS message to them that day. The format of this file is the snapshot version of PR-030 – Event Detail Report. The report can be requested to be provided in csv or xml format which is a parameter setting within the notify parameters process (MP-020).

Business requirements:

1. For CS messages, where the ICP has Meter Types of HHR or for MI switch types (move-in switches,) it is submitted by the gaining Trader to the Registry. For all other switch types it is sent by the losing Trader to the Registry.
2. For RR messages it is submitted by the gaining Trader to the Registry, but only where the

original CS was submitted by the losing Trader.

3. Traders can provide CS/RR information to the registry via a file or via a browser screen. Only the affected parties to the switch - Traders (gaining and losing), Distributor, and the MEP – can view the full CS/RR information via the browser. Other parties can view all the information except the channel readings.
4. For a CS message type there must be a prior switch request or acknowledgement notice present for the ICP and it must relate to the switch.
5. All switch types are valid.
6. An audit trail and an acknowledgement must be generated for the CS and RR.
7. The CS/RR information must be forwarded by the registry to the other Trader in a file in the same format and order as input, and, in accordance with their switch notify parameters.
8. The CS/RR must also be forwarded to the other (gaining or losing) Trader, Distributor, and MEP of the ICP applicable at the Actual Transfer Date.
9. Once accepted by the registry, a CS cannot be reversed. The withdrawal sub-process must be used instead.
10. The CS can be corrected (in certain circumstances) by submitting an RR transaction but only by the gaining Trader party but only where the original CS was submitted by the losing Trader. The RR Actual Transfer Date must match the Actual Transfer Date of the original CS. All the validation rules are re-applied based on the latest version of the Metering and Trader events (in case metering information have been updated in the meantime as there may have been additional or fewer NHH meters found at the site since the CS was submitted) applicable at the Actual Transfer Date.
11. Only the CS message changes the responsibility from the losing Trader to the gaining Trader (and triggers the updating of Trader event information). The RR is purely for information purposes.
12. A snapshot version of the Event Detail report PR-030 must be generated for each ICP successfully switched via a CS message. The report is delivered to a new Trader in an overnight file. This is only required where it is the old Trader that inputs the CS message. The format of the report can be xml or csv. The format is set as a supervisor-defined parameter.

Data inputs:

- Each attribute on an input line is comma separated.
- CS/RR (completed switch/replacement reading notice) attributes are:
- N.B. For RR message types the 'I' and 'M' rows do not need to be provided. They are not required (mandatory) by the system but if provided will be validated and transmitted to the affected participants.
- Sequence of input file: ICP Number, Metering Installation Identifier, Metering Component Serial Number, Channel Number.

Name	Type	Mandatory /optional	Description
Record Type	Char 1	M	Must be 'P' – premises.
ICP	Char 15	M	ICP Identifier.
Trader	Char 4	O	Submitting Trader Participant Identifier. Derived by the system if left blank.
Actual Transfer Date	DD/MM/YYYY	M	
User Reference	Char 32	O	Free text field carried to history and audits.
For each Metering Installation			There must be exactly the same number of installation rows as found in the Metering event applicable at the Actual Transfer Date for this ICP where the installation contains NHH or PP Metering Type components with Channels that have any one settlement indicator = 'Y'. They will be separated by intervening 'M' and 'R' rows. For RR message types the 'I' row is optional.
Record Type	Char 1	M	'I' – installation.
ICP	Char 15	M	ICP Identifier.
Metering Installation Identifier	Numeric 2	M	Metering Installation Identifier and must match with a Metering Installation Identifier in the related Metering event applicable at the Actual Transfer Date
Key Held Indicator	Char 1	M	'Y'/'N'.
For each Metering Component of type = meter			There must be exactly the same number of 'M' rows following an 'I' row, as the number of Metering Components within the installation that have an NHH or PP Metering Type with at least one Channel with a settlement indicator = 'Y'. Each 'M' row will be separated by intervening 'R' rows. For RR message types the 'M' row is optional.
Record type	Char 1	M	'M' – meter.
ICP	Char 15	M	ICP Identifier.

Name	Type	Mandatory /optional	Description
Metering Installation Identifier	Numeric 2	M	Metering Installation Identifier. Must be the same as in the preceding 'I' record.
Metering Component Serial Number	Char 25	M	Unique identifier of meter and must match with a Metering Component Serial Number in the related Metering event applicable at the Actual Transfer Date.
Last Read Date	DD/MM/YYYY	M	Date meter was last physically read, e.g. 05/05/2002, or the last validated meter reading if permanent estimate supplied.
Meter Reader Notes	Char 50	O	Free text. Optional.
For each channel within the meter:			<p>For CS message types, there must be exactly the same number of 'R' rows, as the number of channels within the metering component of the previous 'M' row that have a settlement indicator = 'Y' applicable at the Actual Transfer Date.</p> <p>For RR message types where there are no previous 'M' row supplied, there must be exactly the same number of 'R' rows, as the total number of channels within the ICP that have a settlement indicator = 'Y' applicable at the Actual Transfer Date.</p>
Record type	Char 1	M	'R' – register/channel.
ICP	Char 15	M	ICP Identifier.
Metering Installation Identifier	Numeric 2	M	Metering Installation Identifier. Must be the same as in the preceding 'I' record.
Metering Component Serial Number	Char <u>25</u>	M	Unique Metering Component Serial Number. Must be the same as in the preceding 'M' row.
Channel Number	Numeric <u>2</u> <u>3</u>	M	The channel number of this NHH or PP meter that has a settlement indicator of 'Y' in the associated Metering event to which the reading applies.

Name	Type	Mandatory /optional	Description
Reading	Numeric 12	M	Reading value for this channel on this date. Number of digits must not be greater than the number of dials recorded for this channel in the associated Metering event.
Actual or Estimate	Char 1	M	Indicates whether the read was an actual or estimate. Valid values: (A)ctual, i.e. validated meter reading, or (E)stimate, i.e. permanent estimate.

Examples:

A CS with 1 installation, with 1 meter but with 2 channels:
HDR,RQSWITCHCS,RETA,RGST,19/07/2007,14:48:34,5
P,9999999999AB123,RETA,01/01/2009,premises user ref
I, 9999999999AB123,1,Y
M,9999999999AB123,1,6677AB,17/12/2008,MetrNotes
R,9999999999AB123,1,6677AB,1,1234,A
R,9999999999AB123,1,23454789,2,7894,A

A CS with 2 installations, each with 1 meter but with 2 channels:
HDR,RQSWITCHCS,CTCT,RGST,19/07/2007,14:48:34,9
P,12345678901AB123,GENE,18/07/2007,2100471481:001
I, 12345678901AB123,1,Y
M,12345678901AB123,1,501824,15/07/2007,Notes
R,12345678901AB123,1,501824,1,26699,A
R,12345678901AB123,1,501824,2,08444,A
I, 12345678901AB123,1,N
M,12345678901AB123,2,501825,15/07/2007,Notes
R,12345678901AB123,2,501825,1,26699,A
R,12345678901AB123,2,501825,2,8444,A

An RR with 1 installation, with 1 meter but with 2 channels:
HDR,RQSWITCHRR,RETA,RGST,19/07/2007,14:48:34,3
P,9999999999AB123,RETA,01/01/2009,premises user ref
R,9999999999AB123,1,6677AB,1,1284,A
R,9999999999AB123,1,23454789,2,9894,A

Processing:

System

1. Validates all attributes, using relevant information from the Metering and Trader events, and checks their dependencies.
2. Checks that the CS is being sent by the appropriate Trader.

3. Checks that the RR is being sent by the appropriate Trader.
4. There must be a switch in progress for the ICP for a CS.
5. Rejects a CS/RR with errors and returns it to the sender with the reason for the rejection.
6. Keeps a copy of the CS/RR in the 'delivered' format.
7. Generates an audit trail for the CS/RR.
8. Sends the complete CS/RR to the other Trader either immediately or as part of a later batch in accordance with that Trader's switch notify parameters.
9. Sends the complete CS (not RR messages) to the affected Distributor and Metering Equipment Provider of the ICP. All CS messages are batched together in one file and delivered overnight.
10. For CS message types only, generates a Trader event for the ICP, in order to effect the change in Trader, setting the Event Date to be the Actual Transfer Date from the CS and taking the remaining reconciliation attributes from the information in the original switch request (NT), if present.
11. For CS message types only, updates the ICP so that there is no longer a switch in progress (not applicable to RRs).
12. For CS message types only, reverses any Trader submitted events (Trader and Status) that have Event Dates later than the Actual Transfer Date.
13. Completes audit trail information for each event inserted and reversed.
14. Generates an acknowledgement for the CS/RR to the submitting Trader.
15. Generates a snapshot Event Detail report (PR-030) for each ICP switched but only for new Traders where the CS was submitted by an old Trader.
16. Determines affected participants of each event insertion and reversal and generates notifications to them, with reference to their notification parameters. Both Traders are classed as affected participants.

- | Data outputs: |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • ICP updated to indicate the switch is no longer in progress. • Trader event. • Possible Trader-and Status event reversals. • Copy of the CS/RR and its associated audit trail information stored on registry for online query but without channel reading attribute value. • CS/RR to forward to the other Trader • CS message only to the Distributor and Metering Equipment Provider. • Snapshot Event Detail report (PR-030) for each ICP switched, to the new Trader. • Notifications. • Acknowledgements. |

