Guidance for replacing RTS metering equipment with smart meter equivalents

May 2022

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INTRODUCTION AND CONTEXT

Introduction

A radio teleswitch (RTS) is an electrical switching device that is part of the existing metering system installed at a consumer's premises (installed as a separate device or incorporated into the electricity meter itself) and lets energy suppliers switch large numbers of electricity meters between different tariff rates to manage their peak and off-peak electricity demand. The RTS arrangements became available on a national scale in the 1980's and the current operation of the RTS arrangements is the responsibility of the Energy Networks Association (ENA).

Radio transmitters, using the Long Wave radio frequency, transmit signals to RTS devices in consumers' homes, and the flexibility of the system enables a range of load management, demand side management and other control strategies to be deployed.

The ongoing operation and planning for the close-down of the current RTS arrangements has been a dedicated work activity for Energy UK's smart metering project team since circa 2015, largely as the introduction of smart meters was regarded as the natural technology replacement for the aging RTS infrastructure. This work has included Energy UK successfully negotiating a number of contract extensions to the current RTS service as a result of the ENA making clear its intentions to stop providing

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the service in 2018. Due to the Covid-19 pandemic, a final contract extension was agreed in May 2020, which will see an end to the existing RTS service on 31st March 2023[1].

As of 10th March 2022, there were approximately 1.127m RTS metering systems still installed at consumers premises across Great Britain.

In order for Energy UK to best support its members for the close-down of the RTS service and to better understand supplier readiness, a Request for Information was issued in August 2021. The findings from this RFI and subsequent meetings underpins this guidance.

Context

As part of its Smart Meter Implementation plans, the Government introduced the New & Replacement Obligation, which requires that energy suppliers take 'all reasonable steps' to ensure that any new or replacement metering systems (in Domestic or Designated premises) are smart metering systems.

To support this obligation, Energy UK has worked with its members to understand what engineering solutions are required when replacing legacy RTS metering equipment with a smart meter, in both a Load Managed Area and a Non-Load Managed Area.

This guidance sets out the factors that energy suppliers should consider when planning their legacy RTS metering replacement activity, including how to identify consumers with legacy RTS metering equipment, what engineering solutions are recommended, and the need to ensure that any changes to a consumer's tariff, or changes to their heating/how water provision are communicated clearly and effectively with consumers.

Please note this guidance should not be considered as best practice, nor should it be read as an exhaustive detailed list of activities that energy suppliers should carry out in every case. The guidance should be considered on a case-by-case basis by energy suppliers, as and when applicable scenarios arise, and so it is energy supplier choice on the appropriate approach to use.

As the audience for this guidance is electricity suppliers (and not consumers), it will be published within the members area of the Energy UK website. Energy UK will also circulate this guidance to non-Energy UK members through existing channels (such as via the BEIS Independent Suppliers group, Smart Energy Code Administrator and Secretariat (SECAS) and other trade associations as relevant). Energy UK will maintain responsibility for updating this guidance as necessary until the rollout of smart meters has concluded (currently assumed as 31st December 2025).

In order for Energy UK to best support its members for the close-down of the RTS service and to better understand supplier readiness, a Request for Information was issued in August 2021. The findings from this RFI and subsequent meetings underpins this guidance.

Preliminary Matters

As part of their smart meter installation activity, energy suppliers will establish the most appropriate metering configuration for their consumers, typically swapping out the meter with the consumer remaining on their current/existing tariff. However, energy suppliers are encouraged to engage with the consumer prior to the smart meter being installed to discuss which tariff is best suited for the consumer's energy usage (for example, if the consumer was on an Economy 7 tariff, but is no longer using electrical appliances overnight, then it may be more appropriate for the consumer to be on a single-rate tariff going forward).

In non-Load Managed Areas, there are no constraints on what tariff the energy supplier can agree with the consumer once their smart meter has been installed. However, for consumers living in a Load Managed Area, energy suppliers need to apply the Standard Settlement Configuration (SSC) and Time Pattern Regime (TPR) configurations specified by the Network Operator in Schedule 8 of DCUSA – which are typically aligned to SSCs and TPRs specified for legacy RTS metering systems. As such, the

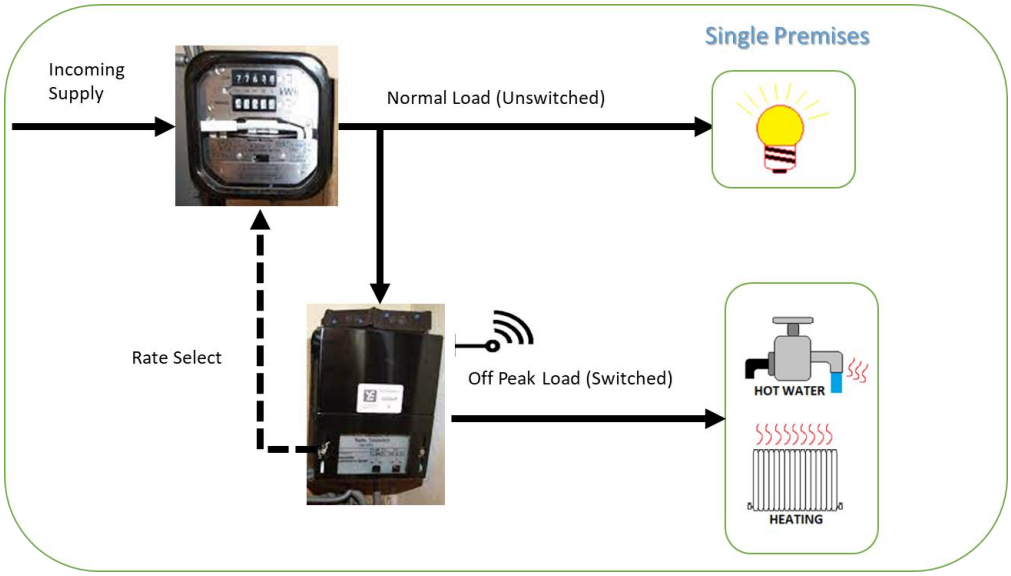
[1] March 2022 - Energy UK is currently working with the ENA seeking to extend the current RTS arrangements out to 31st December 2025 (aligning the RTS end-date with the end of the smart meter rollout). However, it is noted that there is no guarantee that such an extension can be secured.

DCUSA obligation places a constraint on energy suppliers being able to offer consumers any alternative tariffs in Load Managed Areas, for example, a Time of Use tariff (that does not mirror the TPRs set out in Schedule 8 of DCUSA) that enables consumers to realise the full benefits of smart metering.

Existing RTS Configurations and Setup

The majority of RTS metering configurations are setup to either manage a single metered supply with auxiliary load control to switch the hot water and/or heating on and off, or a two metered supply that is metered either through 2 meters or a single Twin-Element meter with multiple auxiliary load control (to switch hot water and/or heating on and off) and to manage tariffs for the normal load. Some RTS metering configurations also provide a 'Boost' function that enables the consumer to heat hot water outside of the normal off-peak charging period.

A single metered supply configuration can be seen below:

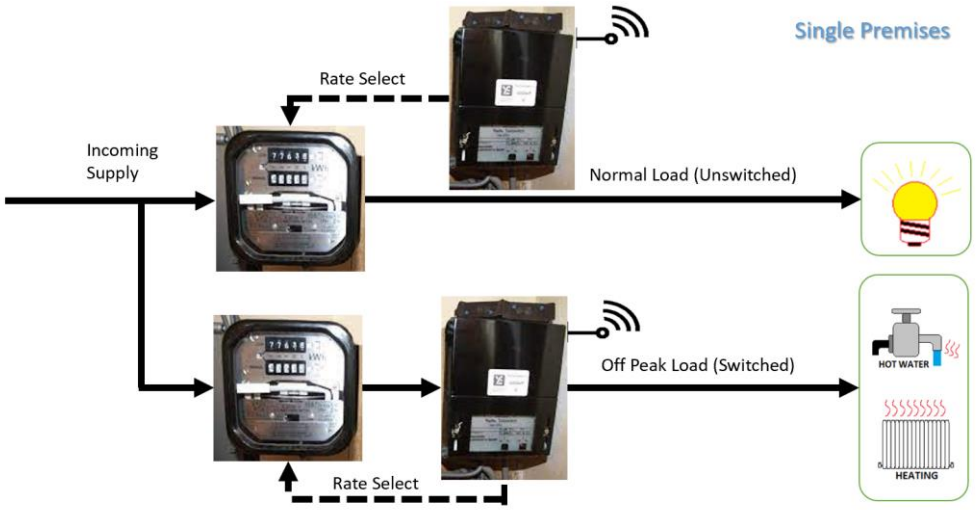


This has the following features:

- A single supply, one two rate meter and one RTS unit.
- RTS signal activates/deactivates circuit connected to heating/hot water and accordingly switches between peak and off-peak rates.
- Peak Rate – lighting/ non-heat/hot water appliances; and
- Off-Peak Rate – above plus heating/hot water.

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A typical Two-Metered Supply configuration can be seen below:



This has the following features:

- Two metered supplies –
  - circuit one for lighting and non-heat/hot water appliances
  - circuit two for heat/hot water
- Two dual-rate meters (or one twin element meter) and two RTS units
- RTS signal activates/deactivates peak/off-peak rate on circuit one
- RTS signal activates/deactivates heating and hot water (and off-peak rate) on circuit two

Load Managed Areas

To protect the reliability and integrity of the electricity supply network, (and in some cases, as a mechanism to defer costly network reinforcement programmes which would otherwise be required), Electricity Network Operators may, through Schedule 8 of DCUSA, designate all, or parts of their network as a Load Managed Area. By designating their network (or part/s of their network) as a Load Managed Area, the Distribution Network Operator (DNO) is able to limit the occurrence of simultaneous switched loads via Load Switching Regimes set out in SSC and TPR configurations that must be used by suppliers, even when swapping out legacy RTS meters with smart equivalents.

Scottish and Southern Electricity Networks (SSEN) have designated the majority of postcodes in the GSP_P region as a Load Managed Area, and as such, when replacing a RTS metering equipment to a smart meter, energy suppliers are required to map the existing SSC and TPR configurations to the equivalent SSCs notified by SSEN in its Load Managed Area Notice. As of 10th March 2022, there were approximately 64k RTS metering systems in the GSP_P region.

Western Power Distribution (WPD) have also declared postcodes for the Isles of Scilly (TR21-25 postcodes) in the GSP_L Region as a Load Managed Area. However, the Load Managed Area Notice issued by WPD does not provide suppliers with a list of smart equivalent SSCs that need to be applied when smart meters are installed and therefore are not constraining energy suppliers in their provision of tariffs.

As noted in the Background section of this guidance, the DCUSA obligation places a constraint on energy suppliers from offering any alternative tariffs to consumers residing in a Load Managed Area – this is especially pertinent for the SSEN region (GSP_P).

Replacement of RTS equipment in 'No-WAN' areas

Energy UK and energy suppliers recognise that there may be some premises where legacy RTS equipment is installed, and there is currently no smart metering communication network coverage – known as 'No WAN' areas (according to information held within the Smart DCC's WAN Coverage

Checker database). Whist there is recognition of this scenario, there is no centrally held information that can proactively confirm accurately where, or the numbers of premises that may be affected. The responsibility for identifying such premises therefore lies with all relevant electricity suppliers using a combination of their own consumer/premises-related information and data held within the Smart DCC's WAN Coverage Checker database.

Whilst the potential extent of this scenario is unknown currently, there is a general view that overall numbers of premises impacted is likely to be low given Smart DCC's existing WAN coverage targets (CSP C&S 99.25% and CSP N 99.5%). However, some suppliers have noted that the actual number of premises impacted by No WAN could be higher than that reported by DCC's WAN Coverage Checker database – for example a premises marked as 'Low WAN' could be found to have No WAN once the installer attends the site. That said, it may also be the case that the current No-WAN status could change between March 2022 and 31st March 2023, as the Smart DCC's communications network providers seek to increase network coverage in-line with their contractual obligations. Additionally, it is worth highlighting the distinction between:

- known no-WAN areas as per the DCC WAN Coverage Database;
- areas where DCC's WAN Coverage Database confirms there is WAN but the meter installer turns up on site and finds there is no WAN (whereby the supplier is then expected to report the No WAN situation to the DCC which in turn invokes a 90-days SLA with the DCC to address the WAN issue); and
- areas where a Comms Hub Variant in CSP Central and South is required to provide MESH connectivity to allow gateway connections for other Comms Hubs in that particular area; if that Comms Hub Variant (for MESH connectivity) is not installed then the DCC WAN Coverage Database will be marked as Low WAN.

Where a supplier identifies an existing premises that is located in a current No-WAN area, there will be internal considerations for the supplier that will inform the next steps they make. It is assumed that the supplier will have little choice but to mark the premises as "no longer a candidate for a smart meter installation at this time" until WAN coverage is provided by the DCC.

In such situations, Energy UK assumes that the supplier will keep the existing RTS metering equipment on site, and where necessary and relevant (for example, if the supplier is aware that the RTS metering equipment will no longer operate after 31st March 2023), install a mechanical timeswitch (or other similar device) to take the place of the radio teleswitch.

A supplier will need to choose an appropriate approach as they see fit to ensure the best outcomes for the consumer in order to minimise any disruption to the heating and / or hot water provision at the premises.

For the avoidance of doubt, all of the principles and expectations included within this Guidance, should also apply in such cases.

SUPPLIER GUIDANCE

1. Raising Consumer Awareness

Energy UK have had initial discussions with Smart Energy Great Britain (SEGB) to discuss the issues associated with the replacement of RTS metering equipment with smart meter equivalents, and what this might mean for consumers. Specifically, Energy UK have advised SEGB that suppliers may need them to undertake some central communications in relevant areas during 2022/23 to raise awareness of the need for consumers with legacy RTS meters to arrange for smart meters to be installed (noting that the current RTS arrangements are due to end in March 2023), and that this potential support requirement should be considered as part of their budget setting considerations and future workplans. SEGB have acknowledged this requirement and will work with Energy UK, energy suppliers and all relevant stakeholders to provide this support.

With the RTS service ending, consumers need to understand what this means to them. Some will have a specific ongoing requirement for an equivalent solution (e.g., to charge their space heating/hot water provision at a lower off-peak cost), others will no longer have a requirement for such an equivalent solution (e.g., storage heating replaced by gas central heating) and others will not know either way.

Consumers will also need to understand if they are in a Load Managed Area and what this means for them as part of their supplier's RTS replacement programme. In particular, consideration will be needed to carefully explain why consumers in Load Managed Areas may not be able to realise all of the benefits of smart meters compared to consumers in other areas/regions. For example, some smart benefits such as the availability of specific smart meter-based tariffs and products may not be available due to the Peak-Load restrictions set out in the relevant Load Managed Area Notice applicable in their geographic area/region.

A centrally-led communications strategy would support consumer engagement, with aligned messaging for all parties to use (including suppliers, SEGB, and Consumer Bodies such as Citizens Advice, Consumer Scotland, National Energy Action etc) and suppliers may wish to use SEGB to support the wider communication around the overall replacement programme alongside their individual replacement programmes' communication approach. Energy suppliers should continue to work proactively with SEGB to provide clarity of their requirements and establish appropriate communications to help educate and facilitate their RTS replacement programmes.

2. Identifying RTS Consumers and Reporting

ELEXON have guidance for "Radio Teleswitch - Standard Settlement Configuration Mapping" and as part of this they provide guidance for the identification of Radio Teleswitch consumers. It is recommended that energy suppliers should use this to identify those consumers who have RTS devices that need replacing as part of their smart metering programmes.

ELEXON also provide a monthly summary of the number of Radio Teleswitch Metering Systems and this report is split by GSP Groups and Supplier MPIDs and should be used to measure progress of suppliers RTS replacement programmes.

3. Identifying the appropriate smart meter equivalents

Energy UK has held a number of workshops and a consultation with energy suppliers to understand their positions on, and status of their current RTS replacement programmes. One of the key recommendations from this work has been the need for further guidance to assist suppliers in their planning for the replacement of RTS meters in both a Load Managed Area and Non-Load Managed Areas to help identify appropriate smart meter equivalents.

RTS Replacement with a Smart Meter in a Non-Load Managed Area

As there are currently no network constraints in Non-Load Managed areas, energy suppliers are able to determine the best smart metering solution and tariff arrangements to meet the needs and requirements of their consumers. This may or may not offer the same metering configuration and TPRs as previously configured with the RTS meter/s. As such we would recommend that energy suppliers discuss energy

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usage, tariff and configuration requirements, and the/ consumers' requirements (for example, to understand whether or not the consumer has an ongoing need for a hot-water 'Boost' facility) with their consumers and install a smart meter with associated configurations to meet these.

RTS Replacement with a Smart Meter in a Load Managed Area

As mentioned previously, for those replacements in a Load Managed Areas (for example, SSEN has designated the majority of postcodes in the GSP_P region as a Load Managed Area), when replacing legacy RTS meters with a smart meter, energy supplies are required to map the existing configurations to the equivalent SSCs and TPRs as provided by the relevant DNO (as per the obligations set out in Schedule 8 of DCUSA).

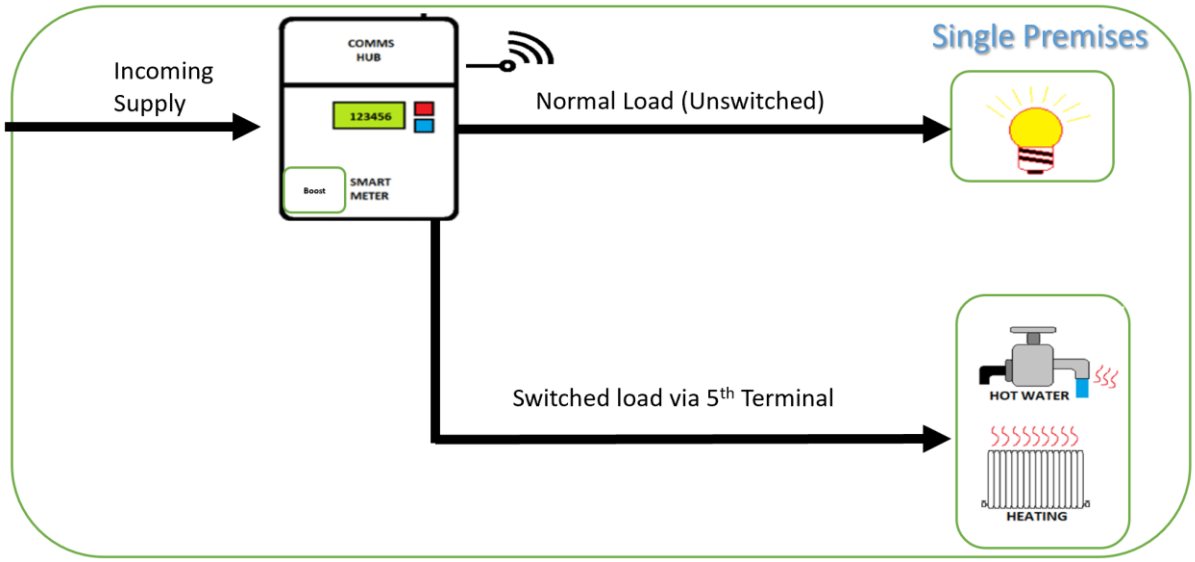
Through the workshops held with Energy UK, energy suppliers came to the following conclusions:

- Suppliers may either continue to use Twin-Element smart meter variants / two-separate smart meters, or use a 5-Terminal single-element smart meter solution to provide load control for heating and hot water.
- A 5-Terminal solution will provide load control either through the 5th terminal for a single control of the heating and hot water or through the 4th terminal and a HAN Connected Auxiliary Load Control Switch (HCALCS) where the hot water and heating are on different TPRs.
- While Twin-Element solutions are anticipated in late-2022, 5-Terminal smart meters are already being installed as replacements for RTS meters in Non-Load Managed Areas.
- Suppliers will need to consider whether there is a need to accommodate any 'Boost' capability as part of the smart meter configuration.

Based on discussions so far, most energy suppliers believe that in a Load Managed Area, the installation of a 5-Terminal smart meter with an additional HCALCS (where needed) is the most appropriate solution. However, a Twin-Element / 2 separate smart meters is also a viable option as part of RTS replacement although this would also mean that 2 separate IHDs/PPMIDs would need to be provided at the moment, as there's not a solution whereby data from multiple electricity smart meters can be shown on one IHD/PPMID device. Whichever solution energy suppliers choose, Energy UK is encouraging transparency in how these meters are configured to manage the different scenarios where RTS is installed, and are encouraging all suppliers to share this information with other suppliers when requested to do so.

Suppliers procuring both 5-Terminal and Twin-Element smart meters should also consider whether or not they need these devices to include a Boost capability. For 5-Terminal smart meters in particular, depending on how the 5-Terminal smart meter is configured will mean that any on/off peak tariff can be applied across both switched and unswitched loads at any one time.

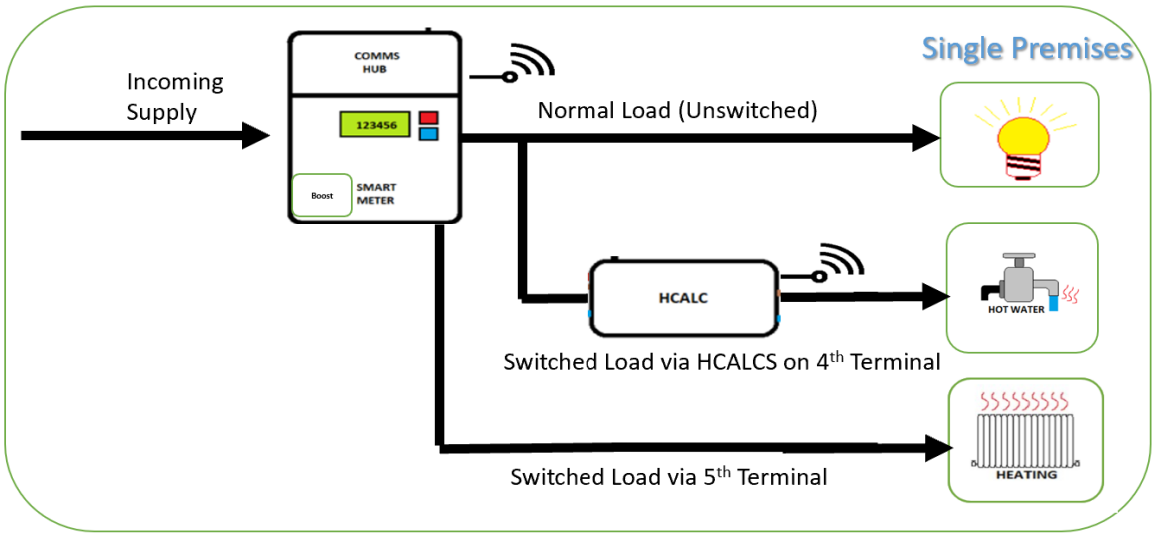
A single 5-Terminal metered supply with a single switched load controller via the 5th terminal for combined hot water and heating can be seen below:



This has the following features:

- Single supply, one electricity smart meter fitted
- The calendar should be configured by energy suppliers via relevant DCC service requests
- The smart meter and Time of Use Tariff calendars aligned accordingly to accommodate normal/off-peak rates. These configurations must align to the SSC / TPR configurations in Schedule 8 of DCUSA in order to mirror (as close as possible) to those associated with the legacy RTS meter being replaced
- The 5-Terminal meter configuration will mean that any on/off peak tariff can only be applied across both switched and unswitched loads at any one time.
- This does not provide the network operator with access to any form of dynamic load control
- Energy suppliers can choose multiple arrangements to meet these requirements. There is no restriction on utilising the 5th terminal and as such energy suppliers may wish to use an ALCS or HCALCS as an alternative.

A single metered supply with 2 individually switched-load control capability (via the 5th terminal and a HCALCS on the 4th terminal) to manage hot water and heating loads independently can be seen below:



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This type of installation has the following features:

- Single supply, one electricity smart meter
- One of the off-peak loads will be controlled by the 5th terminal and the other will be controlled by a HCALCS located on the output from the 4th terminal.
- The calendars should be configured by energy suppliers via relevant DCC service requests
- The smart meter and Time of Use Tariff calendars aligned accordingly to accommodate normal/off-peak rates. These configurations must align to the SSC / TPR configurations in Schedule 8 of DCUSA in order to mirror (as close as possible) to those associated with the legacy RTS meter being replaced
- The 5-Terminal meter configuration will mean that any on/off peak tariff can be applied across both switched and unswitched loads at any one time.
- This does not provide the network operator with access to any form of dynamic load control
- Energy suppliers can choose multiple arrangements to meet these requirements. There is no restriction on utilising the 5th terminal and as such energy suppliers may wish to use an ALC, HCALCS or a combination of the 2 as an alternative.

Where the legacy RTS arrangements are facilitated with the use of two legacy meters (or a Twin-Element meter), and a single element 5-Terminal smart meter is to be installed, it is recommended that one of the supplies is terminated to allow the single supply solution to be adopted as shown above. To achieve this, suppliers should follow the 'Logical Disconnection' process as detailed in Paragraph 6 of Schedule 33 of DCUSA, and relevant processes as set out in Section 20 of Schedule 21 of the Retail Energy Code to 'un-relate' the second, now unused MPAN associated with the premise.

4. Communication with RTS Consumers

Energy UK notes that it is essential that as part of suppliers' considerations for replacing legacy RTS meters with smart meter equivalents, any relevant impacts are clearly communicated to consumers prior to any meter replacement taking place. As part of any RTS replacement activity, suppliers should ensure that as far as is reasonably practicable and necessary, the same tariffs are applied to consumers' accounts.

For all RTS replacements, consumers must be provided with a simple explanation of the service and tariff they are currently getting and if there will be any changes to these as part of the replacement of their RTS metering equipment.

With these considerations in mind, it is recommended that suppliers put appropriate processes and procedures in place to identify those consumers that will be directly impacted and have dedicated RTS consumer journeys in place that include a requirement to communicate the impacts of any changes as a result of a RTS meter replacement.

All communications with RTS impacted Consumers should:

- Explain what RTS is and why they have it installed;
- Explain why their RTS metering equipment needs to be replaced, noting that the RTS network will no longer be supported from April 2023;
- Explain that the smart metering infrastructure will be used to replace the RTS arrangements, including an explanation of how smart meters work;
- An explanation of any changes to the existing "Boost" functionality (if the existing RTS metering equipment has a 'Boost' function);
- Promote the benefits and opportunities of smart meters, and for consumers residing in a Load Managed Area, what smart meter benefits may not be immediately available;
- Include a comparison of their RTS and smart meter tariffs, both in terms of costs and switch times – if the costs or switching times will change as a result of the smart meter installation; and

- Avoid using alarming messaging or statements such as '*your heating and hot-water will stop working if you don't get a smart meter installed'* but also seeking to convey that there is a need for the consumer to engage with the transition process given that the current RTS arrangements will end on 31st March 2023.

5. Booking RTS replacement appointments

Whilst all energy suppliers have well-established and defined processes in place for the booking of smart meter installation appointments, suppliers should ensure that staff handling appointment booking for RTS metering equipment replacements have appropriate and specific training and understanding of the RTS arrangements to enable them to answer any specific consumer queries during the appointment booking process.

During the appointment booking process, call handlers are encouraged to establish whether or not the property still relies on electricity for its main heating and/or hot water provision. This will enable the call handler to identify what type of smart metering equipment is needed prior to the installation visit taking place, and will help mitigate the risk that the installer visiting the premise is not appropriately skilled and/or has the necessary smart metering equipment required to complete the installation in a single visit.

Where call handlers identify that the consumer has no further requirement for RTS equipment (for example, that the heating/hot-water system has been replaced at some point in the past), call handlers should use this as an opportunity to ensure that the consumer is on the most appropriate electricity tariff once the smart meter has been installed. For example, if the heating/hot water system has been changed to a mains gas system, the consumer may no longer have a requirement for an off-peak focused electricity tariff which may attract a higher standing charge or tariff than a single-rate equivalent tariff.

Where RTS equivalent smart metering equipment is required still, the supplier is encouraged to use the appointment booking process as an opportunity to discuss the consumer's electricity consumption needs, and where relevant and appropriate, to promote or offer any smart-enabled electricity tariffs that the supplier may offer; paying particular attention to what will be in the consumers' best interests. Call handlers should be aware of any constraints that may be relevant with regard to the consumer's geographic location: e.g. if the consumer resides in a Load Managed Area, then it may not be possible to switch or change the consumer's electricity tariff due to the requirements under Schedule 8 of DCUSA (as explained earlier in this guidance).

6. During the smart meter installation visit

Suppliers are encouraged to ensure that any smart meter installers carrying out RTS replacement activities have a good understanding of the existing RTS arrangements and have the relevant skills and competencies to enable them to deal with any potential on-site situations that may occur. Whilst there is no expectation for energy suppliers' installers to make changes to the internal electrical installation at the consumer's premises, as part of RTS replacement activity, it will be beneficial if the installer is able to identify any changes that may be necessary, and to be able to explain these to the consumer as part of the smart meter installation process.

Installers should be mindful of the consumer's individual circumstances, paying particular attention to those consumers that may need additional support and help if additional remedial action is required as a result of replacing RTS equipment with smart meter equivalents. This should include offering further support from the suppliers' specialist back-office support teams if the installer believes that the consumer requires or would benefit from such support.

Where the installation of a RTS smart metering equivalent results in different, or changes to a consumer's heating/hot-water charging times, suppliers should ensure that installers carefully explain these to the consumer as part of demonstrating the smart metering equipment (as is required under SMIS).

7. Post-installation follow-up

Suppliers are encouraged to consider introducing specific post-installation follow-up contact with consumers impacted by its RTS replacement activity to ensure that the property's heating/hot-water provision has not been adversely impacted as a result of the installation of the smart metering equipment. This is particularly relevant for any replacement activity undertaken in Winter months (between October and March), and for those consumers where it is clear that they will benefit from additional supplier support. Energy UK recommends that this follow-up should take place within 24 hours of the install and should take account of customer circumstances to guide whether this should be done by telephone contact, email or SMS message.

Where it is clear that the newly installed smart metering equipment is not working as expected and the consumer confirms that their heating/hot-water provision is impacted as a result, suppliers should seek to revisit the property (using installers/engineers with the relevant skills and competencies) within 48 hours (particularly during Winter months) in order to rectify the situation.

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