

The state of the market for customers with dynamically teleswitched meters

Analytical Report

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Overview:

Around 550,000 customers in Great Britain have dynamic teleswitched (DTS) meters. These customers, who are almost entirely located in three regions: East Midlands, Northern Scotland and Southern Scotland, have been able to benefit from cheaper electricity rates for their heating but have historically had fewer supply choices than other customers. We have periodically monitored this situation.

This report presents an updated analysis of the state of the market for these customers. Our findings continue to raise concerns about barriers to entry into this market segment and the relatively limited switching options. While competition appears to be less vigorous for DTS customers, they do not appear in general to be paying higher prices, although there are some exceptions.

Our Retail Market Review (RMR) remedies aim to improve the way the market works overall for domestic energy customers. This analysis will inform whether these are likely to be sufficient to address issues specific to the DTS segment of the market or whether further intervention is needed, including, where appropriate, the use of our formal powers.

Context

Since the removal of price controls in 2002, we have periodically monitored the state of competition for electricity customers with DTS meters. Due to the specific features of the radio teleswitching technology, we understand that supplying electricity to DTS customers may present higher costs to competing suppliers than other tariff offerings. As a result, there is a need to investigate whether, due to the limited nature of competition in this market segment, these customers face a narrower switching choice and are exposed to high prices.

As part of the 2008 Energy Supply Probe, we examined the DTS market segment and concluded that, despite the observed low switching rates, the prices charged by former incumbent electricity suppliers to their DTS customers compared favourably with the average Economy 7 tariffs.

Since then, we have undertaken the Retail Market Review, assessing market conditions for all domestic customers and proposing new rules to make the market simpler, clearer and fairer. Within this work we have considered the case of customers with specific heating and tariff arrangements, such as DTS customers.

After the latest round of price rises across the sector during 2012, we have received a number of complaints, and a query from the Energy and Climate Change Committee, specifically related to DTS customers and their switching opportunities.

In this report we provide an updated overview on the DTS market segment.

Associated documents

All documents are available at www.ofgem.gov.uk:

- Review of typical domestic consumption values, July 2013, Ref: 113/13
- The Retail Market Review - Statutory Consultation on RMR Domestic Proposals, June 2013, Ref 95/13
- Creating the right environment for demand-side response, April 2013, Ref: 64/13
- The Retail Market Review – Final domestic proposals, March 2013, Ref: 40/13
- Energy Supply Probe – Initial Findings Report, October 2008, Ref: 140/08

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Executive Summary

Dynamic teleswitched (DTS) tariffs are designed to benefit customers with electric heating, typically with no access to mains gas, by providing them with cheaper electricity rates for heating than alternative tariffs. These tariffs work with special meters that allow for the remote control of customers' heating load by suppliers. By helping to shift consumption away from peak periods, they can help avoid costly investment in network reinforcement. In the future, smart meters could pave the way for similar tariffs to be available for all domestic customers.

We have had long-standing concerns about the limited switching options and associated potential for detriment to the 550,000 or so customers in the DTS segment of the market. When we last looked at DTS tariffs, as part of our 2008 Energy Supply Probe, we found that DTS tariffs compared favourably with other tariffs in the market. Since then, under our Retail Market Review (RMR), we have looked to improve the way the market works overall for domestic energy customers. We recently published our final proposals to make the market clearer, simpler and fairer. These reforms should also benefit customers on DTS tariffs, although our RMR remedies will require tailoring to meet their specific needs.

With this in mind, we have conducted a detailed update of our analysis of the market for customers with DTS meters for the period 2009-12. This will serve to inform whether the RMR remedies are likely to be sufficient to address issues specific to this segment of the market or whether further intervention is needed, including the use of our formal powers where appropriate. This report also addresses a query from the Energy and Climate Change Committee regarding the prices and switching opportunities for DTS customers. The main results of our analysis are:

- Supply side – there remain significant commercial and technology barriers to suppliers competing to provide DTS tariffs. In Scotland, where most DTS meters are located, incumbent suppliers continue to have high market shares in this segment, close to or above 90 per cent.
- Demand side – customers continue to face a limited product choice, which includes DTS tariffs, "mirror" DTS tariffs (ie offered by competing suppliers), and non-dynamic tariffs (eg single-rate or "Economy 7"). Where customers have switched, a significant proportion appear to have moved to non-dynamic tariffs. This may not represent a better deal for those customers. In general, suppliers do not actively advertise DTS and "mirror" DTS tariffs and customers are not aware of the options available to them or the level of heating consumption that would make them better off on a DTS tariff.
- Pricing – despite these issues, DTS tariffs in general still compare favourably with the other tariffs considered in our analysis – standard Economy 7, Economy 10, dual fuel and electricity single-rate tariffs. However, the price paid by a small number of DTS customers on a specific product in the Northern Scotland region appears more expensive than alternative options, including the standard single-rate and dual fuel tariffs. In addition, for a large proportion of DTS meters the dynamic functionality is not used and we are concerned that these customers may not obtain the potential benefits associated with the dynamic switching of their heating load.

The roll-out of smart meters for domestic customers, due to be completed by 2020, will enable a longer-term solution to some of the issues we identified. Once installed, smart meters will have the potential to eliminate the barriers to entry associated with the radio teleswitching system, although changes will be required to market arrangements to enable suppliers to offer dynamic tariffs using smart meters.

In the shorter term, however, our analysis suggests that there remain issues around the levels of customer awareness of the options available to them and suppliers' willingness to actively promote alternative tariffs to these customers. In this context, we intend to take a number of steps.

- We plan to invite larger suppliers and consumer representatives to a round table meeting in early autumn to discuss the main findings of this report to inform our thinking on possible solutions. These include the industry improving the information available to DTS customers and developing plans to enable these customers to benefit from smart meters at the earliest opportunity.
- There has been little consumer research into the experience of DTS customers, though anecdotal evidence is not positive. We plan to undertake new consumer research by the autumn, to better understand customers' experiences with DTS meters and tariffs.
- We have already committed to setting up a working group to include industry and consumer groups by the autumn to look at how the RMR information remedies such as the Tariff Comparison Rate would work with time of use tariffs. We would expect this group to look at the information requirements of customers on heating tariff arrangements, including DTS.
- As part of our ongoing monitoring of the retail market we will continue to keep this segment of the market under review and explore further the apparent high price of a specific DTS product in the Northern Scotland region.

1. DTS meters

Chapter Summary

Through the BBC's long wave Radio 4 service infrastructure, teleswitched meters have traditionally allowed for the timed control and remote dynamic switching of electric heating load by suppliers. This also enables the management of network constraints by network operators, avoiding the need for costly network investment.

Supply to customers with DTS meters tends to be more concentrated among a few suppliers than for domestic customers in general. A major reason for this is that the radio teleswitching design makes it almost impossible for a competing supplier to create a new teleswitch code, implying that DTS meters in a distribution area generally remain under the control of the ex-PES of that area. This feature may act as a barrier to entry, as it reduces the incentive for suppliers to compete for customers with DTS meters.

Technology

1.1. The Radio Teleswitching System (RTS) was introduced in Great Britain in the early 80s, long before the introduction of competition in the electricity retail market. RTS use was initiated by the Electricity Council, prompted by the need for a load management tool to tackle a growing night-time demand. Specifically, the proliferation of electric storage heaters working with a two-rate tariff, supported by a mechanical time switch meter (the forerunner of the current Economy 7 meter), had caused an important shift of demand to night hours and created the risk of a night-time peak. The challenge was to develop a cost-efficient system allowing for more flexible control of the electric heating load, able to spread it over different periods through the day and allowing for the application of dynamic time of use tariffs. Moreover, there was also an aim to provide the then Area Boards (who became the Public Electricity Suppliers or PES in 1990) with an additional tool to manage the need for network reinforcement driven by the off-peak load, especially in remote and isolated areas, including the Highlands and Islands of Scotland.

1.2. A radio based transmission scheme was finally chosen among several options¹ and entered into service in 1983-84. The RTS makes use of BBC's long wave Radio 4 service infrastructure, through which teleswitched meters receive signals that allow for remote load control. The system relies on a rather complex chain of messaging, rules and contractual agreements among several agents:

¹ Three projects investigated the feasibility of using the telephone network, the distribution network and national radio for large scale energy management purposes.

1. Suppliers (typically the ex-PES) act as “group code² sponsors” and determine, in agreement with the Distribution Network Operators (DNOs), the switching time for pre-established groups of meters with a special teleswitch device installed at consumer premises. Radio teleswitches with the same group code and other features respond simultaneously to the instructions sent by the group code sponsor.
2. DNOs act as access providers, managing the schedules on behalf of suppliers. The reason for this intermediary role of DNOs is that the RTS infrastructure was designed with a limited capacity of only 16 users, making it impossible for individual suppliers to obtain direct access to the administrator of the switching infrastructure³. The DNO can also directly issue immediate messages to shed or boost loads (this type of action, contemplated as a main element of the RTS load management rationale, seems quite rare nowadays).⁴
3. The Central Teleswitch Control Unit (CTCU), owned and operated by the Energy Network Association (ENA), receives, monitors and validates the instructions transmitted by the DNOs, preparing them for transmission. It is the ENA which actually coordinates the whole RTS service and signs the procurement contract with the BBC.
4. The BBC assembles and encodes the switching instructions sent by the CTCU on its 198 kHz signal. These are transmitted simultaneously to customers’ teleswitched meters via three radio transmitters located at Droitwich, Westerglen and Burghead.

1.3. The Radio Teleswitch Agreement of 1999 sets the responsibilities of ENA, DNOs and suppliers regarding how the teleswitching system works. Any new arrangement or alteration of this agreement will need the consent of the different parties involved. On the one hand, DNOs will seek protection from any adverse impact on network loads from changes in supplier specific load switching regimes or time of use tariffs (note that within load managed areas DNOs have the ability to veto a supplier driven change of operating regime). On the other, suppliers will seek protection from any negative impact that DNOs load control and load shedding actions may have on their imbalance position.

² The group codes are the identifiers programmed on each meter allowing each group to be addressed individually.

³ Prior to the Radio Teleswitch Agreement of 1999, DNOs were acting both as Access Providers and Group Code Sponsors. Under the Agreement, DNOs have an obligation to provide suppliers with access to the teleswitch infrastructure and act as a Group Code Sponsor of last resort in those cases where a supplier ceases to be a party to the Agreement.

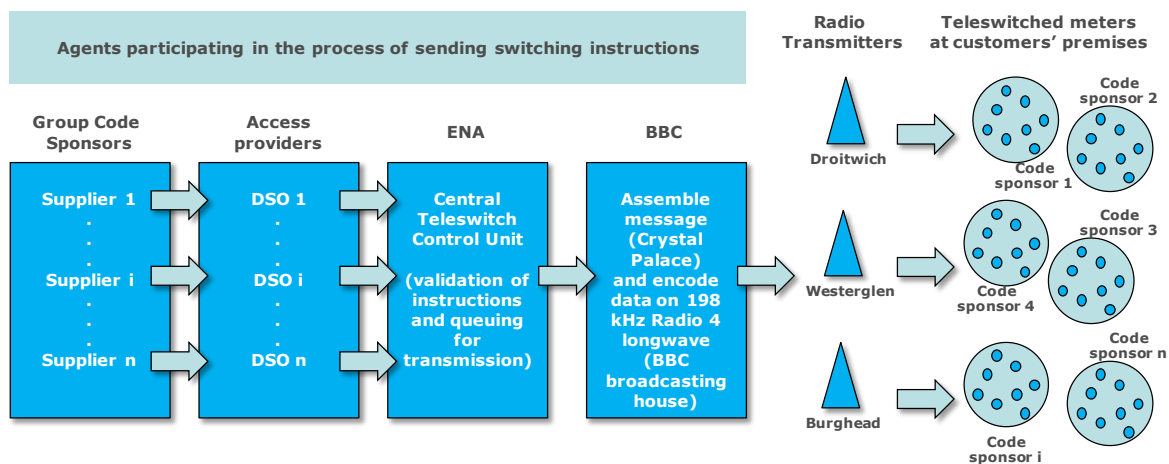
⁴ The DNO can either switch load on behalf of the sponsoring suppliers or provide access gateway arrangements whereby the sponsoring suppliers can themselves issue RTS switching messages of either programme or immediate command type to those GCs under their control.

1.4. Suppliers usually send switching instructions in one of the following ways:

- Static - the switching schedule is rarely if ever changed, so the heating load is switched on/off at the same times every day.
- Semi-static - the schedule is changed a few times a year, for example with the GMT/BST clock change.
- Dynamic - the schedule may vary from day to day, following the suppliers' instructions, most often to take into account prevailing or forecast weather conditions.

1.5. Figure 1 shows a simplified representation of the switching instruction transmission process and the agents participating in it.

Figure 1 Transmission of instructions in the Radio Teleswitching System



1.6. As the RTS was created before the introduction of competition, it does not easily coexist within a competitive framework. In particular, the RTS design makes it almost impossible for a new supplier to acquire a customer with a teleswitched meter and become the new code sponsor, controlling the load switching associated with that meter. There are two main reasons for this:

- Although a teleswitch meter could be in theory reprogrammed to respond to the signal sent by a new supplier, the way in which the meter group codes are distributed around Great Britain is a legacy from the original RTS implementation and there is limited capacity. The meter group codes vary by ex-PES region. Meters with a given code are designed to respond to the particular radio signal applying to their region. The validation of a new code for a given region would involve a change in the existing RTS arrangements, governed by the Radio Teleswitch Agreement. In particular, a supplier wishing to establish a new switching regime would have to enter into a bilateral agreement with a DNO, in its role as access provider.

- Even if meter reprogramming under a new code was allowed, it might be quite costly to undertake it and may not be of interest for a new supplier. A supplier would have to incur set up costs and would be required to arrange a site visit to the home of each new customer with a teleswitch meter. The 1999 RTS Agreement recognises that a new supplier acquiring a RTS customer might not wish to carry out a meter change or other physical work on the customer's premises, and may choose to "piggyback" on the RTS under the control of its existing group code supplier. For a dynamic regime a piggybacking supplier is exposed to potentially significant imbalance risk since the timing of the load is under the control of another party. It is left to suppliers' commercial judgement whether to incur this risk or to pay for the metering changes required to change the group code to one under their own control.

1.7. As a result of the above, if a supplier gains a customer with a teleswitched meter, the associated load may continue to be controlled by the same group code sponsor supplier, typically the ex-PES in the relevant area. Since the new supplier does not know in advance the timing and duration of supply to heating circuits (this is only known to the group code sponsor), it will face the risk of an imbalance between its supply and demand positions. According to one supplier, there is currently no established mechanism for publishing dynamic switching times in a way that would allow suppliers to carry out balancing trades. Consequently, for all but the controlling supplier there is a risk that all or some of the energy supplied to these customers may fall into imbalance. This risk increases with the number of customers acquired and can be especially relevant for small suppliers. In this context, the incentive for new suppliers to actively compete for customers with teleswitched meters may be low.

1.8. Nowadays, as shown in the section below, the great majority of teleswitched meters are programmed following a static or semi-static regime, meaning that they are working in practice as if they were meters with fixed switching times, such as Economy 7 or Economy 10 meters. To the extent that potential competitors are aware of the static usage of a teleswitched meter and this usage is maintained over time, they will be able to anticipate at what time and for how long load will be switched, and thus face minimal or no risk of imbalance. Competition for customers with static or semi-static meters could therefore be more intense than for dynamically teleswitched meters.

1.9. The information about existing switching regimes, including Standard Settlement Configuration (SSC) codes⁵ and the meters covered by them has to be approved under the Balancing and Settlement Code and is included in the Market

⁵ The Standard Settlement Configuration defines how a non-half hourly meter is configured for Settlement. It defines how many registers the meter has and the times at which the registers record consumption. However, the teleswitch switching times will not be included in the Market Domain Data, as the times can be physically reprogrammed on the meter using the teleswitch register rules.

Domain Data⁶, which is made available to all licensed suppliers by Elexon. Nonetheless, this information is not frequently updated and it may not reflect in an accurate way the time usage of a teleswitched meter by the sponsoring supplier. Moreover, the SSC code does not indicate whether a teleswitched meter is being programmed by the sponsoring supplier in a static or dynamic mode. A public consultation was carried out by Elexon in April 2012, with the aim to establish, among other things, what load/meters are currently being switched dynamically, by whom and for what purposes.⁷

Number and location of teleswitched meters across GB

1.10. At present there are around 5 million meters in Great Britain which allow for separate recording of off-peak consumption. Out of these, approximately 3 million have a fixed time switching mechanisms (ie there is a clock attached to the meter that switches the registers or the load every day at the same time; Economy 7 and Economy 10 meters fall under this category) and around 2 million have a teleswitch, implying that the load switching time can be remotely controlled through instructions sent by suppliers/DNOs in the fashion described above. Almost all these meters belong to domestic customers and are connected to electric storage and immersion heating installations. These 2 million customers represent around 7% of all domestic electricity customers in Great Britain (27.6 million), as of December 2012.

1.11. Table 1 below shows the number of customers, based on MPANs⁸, with teleswitched meters in 2009 and 2012 across the different distribution areas. The table also shows an estimate of how many of these are DTS meters, ie teleswitched meters that are being used in a dynamic way. We note that the total number of teleswitched meters has decreased, falling from 2,2 million in 2009 to around 1,8 million in 2012, which partly reflects a reduction in electric storage heaters. Moreover, in 2009 DTS meters represented around 32% of the total of teleswitched meters and this percentage has decreased to 30% in 2012.

1.12. Whereas teleswitched meters are present virtually in all GB regions, DTS meters are geographically concentrated. Based on Elexon's consultation, it is estimated that, as of December 2012, there were around 550,000 DTS meters, located almost entirely in three regions: East Midlands, Northern Scotland and Southern Scotland. Furthermore, as we will see in Chapter 2 on DTS tariffs, our own research shows that only a portion of these DTS meters is actually associated with a dynamic tariff.

⁶ This is the reference data used by Suppliers, Supplier Agents and DNOs in the retail electricity market.

⁷ See Elexon, Dynamic Switching Roadmap, 22 of August 2012.

⁸ An MPAN (Meter Point Administration Number) is a unique number associated with the customer property. It appears on the electricity bill issued by the supplier.

Table 1 Total number of teleswitched meters and estimated number of DTS meters by region in 2009 and 2012

Region	Number of customers with teleswitched meters		Estimated number of DTS meters	
	2009	2012	2009	2012
East Midlands	532,000	390,000	532,000	390,000
South Eastern England	289,000	258,000	-	-
Eastern England	277,000	236,000	-	-
Southern Scotland	264,000	243,000	86,400	79,400
Southern England	208,000	193,000	2	2
Northern Scotland	111,000	106,000	84,600	81,700
London	99,200	92,200	-	-
South Western England	95,300	81,400	-	-
North Western England	80,800	61,500	-	-
West Midlands	79,100	54,800	-	-
North Eastern England	64,900	57,800	-	-
Yorkshire	61,400	55,900	-	-
Southern Wales	38,500	30,700	-	-
Merseyside and Northern Wales	13,600	11,300	110	51
Total	2,214,000	1,872,000	703,000	551,000

Source: Elexon

Note: the figures shown in the above table are from Elexon's settlement runs of 6 December 2012 and 6 December 2009 and are intended to give a high-level view, rather than the exact number of teleswitched meters and DTS meters.

Structure of supply to customers with DTS meters

1.13. In all three regions where most DTS meters are present, supply shows a higher degree of concentration among suppliers for domestic consumers with teleswitched meters⁹, and even more so for those with DTS meters, than for the total population of domestic consumers. The table below shows the ex-PES or incumbent's market share for different market segments across the three regions.

Table 2 Incumbents' market shares in December 2012

Region	All domestic consumers	Consumers with teleswitched meters	Consumers with DTS meters
Northern Scotland	70.1%	93.1%	94.6%
Southern Scotland	47.2%	87.0%	93.4%
East Midlands	35.1%	39.8%	39.7%

Source: Ofgem and Elexon

⁹ We observe this difference, albeit of variable magnitude, in all GB regions where teleswitched meters exist.

1.14. There are important differences among regions:

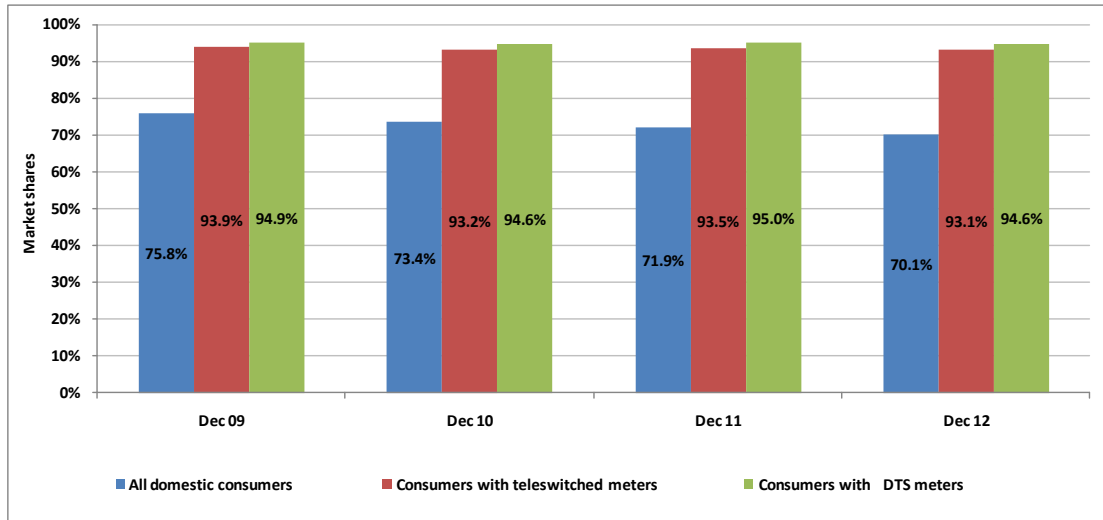
- In Northern Scotland, where the incumbent, SSE, already has a 70% share in the domestic market segment, this share increases to 93% and 95% for teleswitched and DTS meters, respectively.
- In Southern Scotland, where the incumbent, Scottish Power, has a 47% share in the domestic market segment, this share increases more significantly, to 87% and 93% for teleswitched and DTS meters, respectively.
- In East Midlands, the incumbent, E.ON, has a 35% share in the domestic market segment considered as a whole, which increases by only 4% if one considers those customers with teleswitched meters or DTS meters.

1.15. These differences can be attributed to several possible factors. First, it is reasonable to expect that the same determinants of the incumbent's market share in the overall domestic market in a region will also affect the market share in the teleswitched and DTS segment. Secondly, teleswitched meters tend to be associated with specific heating tariff arrangements, often provided by incumbents, for which there may be less direct product substitutes in the market. Third, the actual static or dynamic usage of teleswitched meters seems also likely to impact on competition conditions: most DTS meters in Northern and Southern Scotland have a corresponding DTS tariff, whereas they are used mostly in a static way in the East Midlands. As explained above, static teleswitched meters work in practice as normal time of use meters. To the extent that this is known by other suppliers, it may support more vigorous competition.

1.16. Historic data for each region over the period 2009-2012 show that incumbents' market shares for the overall population of domestic customers has fallen by around 5%. By contrast, incumbents' market shares have barely changed in the teleswitch and DTS customer segment in the Scottish regions, while they have fallen by around 5% in the East Midlands.

1.17. In Northern Scotland, SSE's market share in the teleswitch and DTS segments has remained, respectively, around 93-94% and 95%.

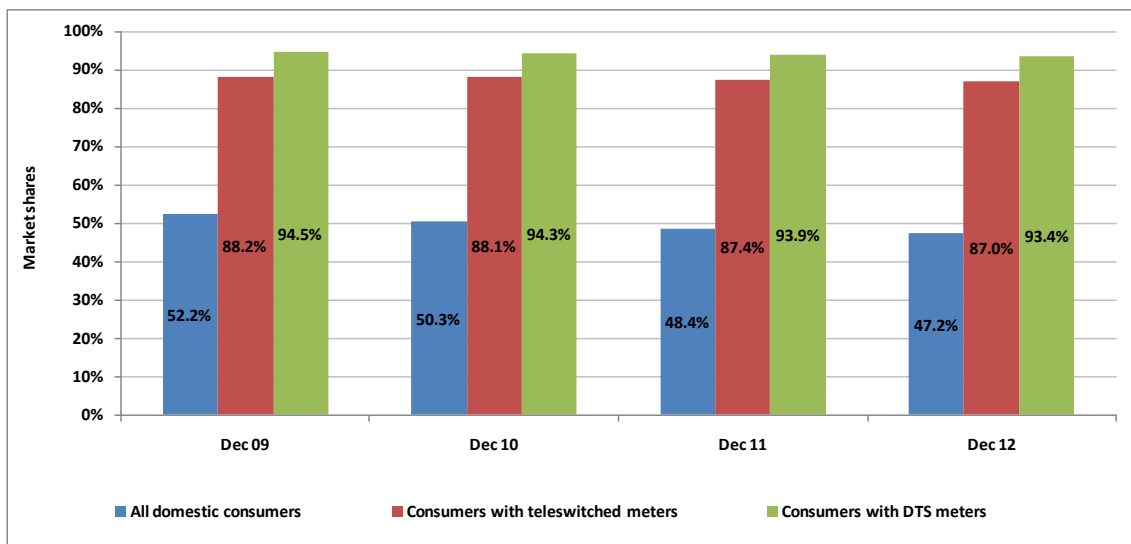
Figure 2 Evolution of the incumbent's market share in Northern Scotland



Source: Ofgem and Elexon

1.18. Similarly, in Southern Scotland, Scottish Power's market share in the teleswitch and DTS segments have remained, respectively, around 87-88% and 94-95%.

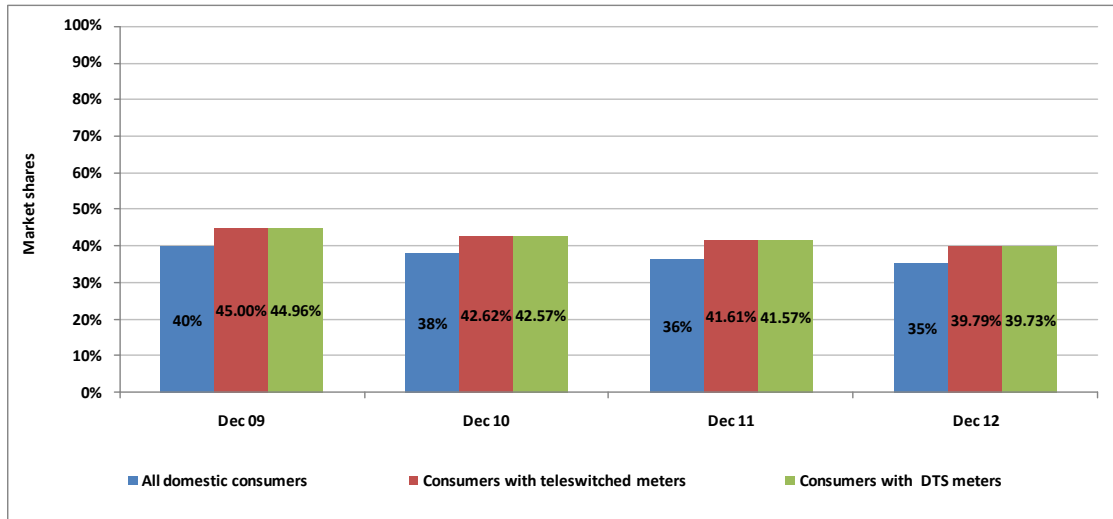
Figure 3 Evolution of the incumbent's market share in Southern Scotland



Source: Ofgem and Elexon

1.19. By contrast, in East Midlands E.ON has a similar market share in both teleswitched and DTS segments, which fell from 45% in 2009 to 40% in 2012. This reduction is almost the same as that observed in the overall market of domestic customers.

Figure 4 Evolution of the incumbent's market share in East Midlands



Source: Ofgem and Elexon

2. DTS tariffs and alternative tariff options

Chapter Summary

DTS tariffs are a special type of heating tariffs, where cheap heating rates are applied dynamically when the DTS meter activates the heating load and the related registers. A large variety of these tariffs exists, being in many cases legacy products, with a bespoke nature related to the features of customers' heating systems.

Our research shows that a DTS customer potentially faces a narrow set of switching options (without a meter or heating system change): (1) another DTS tariff provided by the same supplier; (2) a "mirror" DTS tariff (provided by a competing supplier but having the same structure but different rates); and (3) an "accommodation" to a non-heating tariff (eg a single-rate tariff or an Economy 7/Economy 10 tariff) provided by the same or another supplier, which implies the loss of periods of cheap heating rates. We are concerned that suppliers do not actively advertise DTS and "mirror" DTS tariffs and that customers are not aware of the choice available to them. In particular, they often lack information on the level of heating consumption that would make them better off on DTS tariffs relative to other options.

We gathered and analysed information from the Big 6 suppliers, concerning prices, consumption and the number of DTS customers over the period 2009-2012. Our analysis shows that DTS tariffs generally compare quite favourably on price with standard Economy 7, Economy 10, electricity single-rate and dual fuel tariffs throughout the period considered. However, the price paid by a small number of customers on a specific DTS product in the Northern Scotland region is more expensive than alternative options.

Our analysis also shows that a large proportion of teleswitched meters are programmed so that they work in practice like meters with fixed switching times, such as Economy 7 or Economy 10 meters. We are concerned that, in these cases, by being on static time-of-use tariff, customers may not obtain the potential benefits associated with the dynamic switching of their heating load.

DTS tariffs

2.1. The spread of electric storage heaters in the 1980s led to the development of teleswitched meters as a means to manage this type of load and minimise its cost. This was accompanied by the proliferation of specialist heating tariffs, charging at different rates for the electricity used for heating relative to that used for all other purposes. The bespoke nature of these tariffs stems from the time and duration of the cheap rate period, which is set according to customers' heating system features (eg whether it is a high or low capacity system, whether it is for space and/or water heating, etc.).

2.2. DTS tariffs are a special type of heating tariff that combine the heating-related rate structure with a dynamic application of the cheap period rates. Thus, a DTS

tariff is a heating tariff associated with an active DTS meter, where the supplier offering this product is the group code sponsor and controls load switching for that meter. "Mirror" DTS tariffs also exist, when a competing supplier offers a product having the same structure as a DTS tariff provided by the ex-PES in a given geographic area. The rates of the "mirror" tariff are those offered by the competitor, but the meter switching remains under control of the incumbent.

2.3. Despite their bespoke nature, all DTS tariffs tend to share the following common features:

- There is a cheap rate or several cheap rates applying to heating load (for space heating, storage heating, both and/or other heating uses). This feature is also common to other static or semi-static heating tariffs.
- The period of time during which the heating load is switched can vary every day and the supplier typically sets the maximum number of hours in a day (eg 8, 9, 10, 14 hours) this load will be energised and may also establish when this will occur (eg a certain number of continuous hours during the night and another period during the afternoon or the evening). Switching conditions applied to storage water heating, space storage heating and other heating uses may be the same or may differ, especially in terms of hours during which the load is switched on. In contrast, for static or semi-static heating tariffs the duration and times of switching periods are never or very rarely changed.
- The instructions regarding the daily switching times are typically sent by the group code sponsor to reflect weather forecasts (eg switching on when it is cold) or wholesale prices (eg switching on when wholesale prices are low). In contrast, instructions for static and semi-static heating tariffs are programmed once, communicated to the DNO and are generally sent daily to teleswitched meters without any changes (or just seasonal/one-off changes).

2.4. Some DTS tariffs have a combined structure, ie the cheap heating rate(s) are offered together with rate(s) for general electricity purposes (this could consist of a single standard rate or a day and night rate). Unlike the heating load, the normal load is not being remotely controlled. Customers on this type of DTS tariff have a single contractual arrangement, covering both normal and heating electricity use. This is the case for Scottish Power's main standard DTS tariffs (ComfortPlus Control and ComfortPlus White Meter Weathercall) and SSE's main standard DTS tariffs (Total Heat Total Control and Storage Heat Control).

2.5. Other DTS tariffs only apply to heating purposes. In this case the customer will have a separate circuit for their heating system (or more circuits for space heating, water and other electric storage facilities) wired into a separate meter. The DTS tariff will only apply to the consumption recorded by this meter. The customer will have to contract separately for electricity used for other general purposes, most often with the same supplier, as the normal and heating meter tend to be related (they are on the same premise and supply the same customer).

2.6. The presence of DTS meters and DTS tariffs is decreasing over time. As shown in Chapter 1, the estimated number of domestic customers with DTS meters has gone down from around 703,000 in 2009 to 551,000 in 2012. Moreover, through our tariff-focused research we have identified that a much lower number of DTS meters (179,000 in 2009 and 156,000 in 2012) are actually associated with a dynamic tariff (this will be either a DTS tariff provided by the ex-PES in a given geographic area or a "mirror" DTS tariff provided by another supplier). The table below shows how customers on dynamic tariffs are distributed across regions.

2.7. Suppliers have reported that they are offering less dynamic products, due to their complexity for customers, especially regarding the change in the load switching pattern, which is outside the customer's control. As a result of turning to more static type tariffs, suppliers have reduced the dynamic usage of teleswitched meters. It must be remembered, however, that dynamic teleswitching is often used to provide benefits such as weather dependent control of storage heating which cannot be achieved by static or semi-static switching. Dual MPAN arrangements allow the time varying nature of dynamic heating control to be entirely separated from fixed time of day pricing for other loads which follow a static or semi static regime which the customer is familiar with.

Table 3 Domestic customers with teleswitched meters, DTS meters and dynamic tariffs across regions as of December 2012

Region	Number of domestic customers	Number of domestic customers with teleswitched meters	Estimated number of domestic customers with DTS meters (Elexon's consultation)	Domestic customers on DTS tariffs or "mirror" DTS tariffs (our research)
Northern Scotland	790,000	106,000	82,000	~ 77,000
Southern Scotland	1,984,000	243,000	79,000	~ 47,000
East Midlands	2,453,000	390,000	390,000	~ 32,000

Source: Ofgem and information requests to Elexon and Big 6

2.8. A supplier has reported that, although meters with a dynamic capability may be still in place, most of its customers with such meters are not on a dynamic tariff and therefore it does not manage them in a dynamic fashion, ie it does not switch times on a frequent basis. Similarly, another supplier has confirmed that they have customers with DTS meters that they control, but the switching instruction was given a long time ago to the DNO and has not been changed since. Accordingly, it is not providing tariffs with rates that apply during a variable period, but rather just pre-defined time of use tariffs.

2.9. In the light of the above, we understand that the tariff product sold to the customer by a group code sponsor supplier may determine whether a teleswitched meter will be used in a dynamic or a static fashion. Moreover, we notice that, a supplier's decision to shift from a dynamic to a static regime will not necessarily be known to other agents in the market. This helps explain the discrepancy, especially

significant in East Midlands, between the number of customers with DTS meters, according to Elexon's consultation, and the number of customers with DTS or "mirror" DTS tariffs.

2.10. Whereas competition may be more vigorous for customers with static or semi-static teleswitched meters, for the reasons explained in Chapter 1, we envisage the need for further research to investigate (1) the circumstances under which suppliers do not use the dynamic functionality of these meters and (2) to what extent these customers stand to lose from not being on dynamic heating tariffs.

Tariff switching options for DTS customers

2.11. A key objective motivating this study is to understand what tariff switching options are currently available for customers with active DTS meters. In this section we illustrate these switching options in general conceptual terms, leaving the details of the actual options available to the last section of this Chapter.

2.12. We focus on the hypothetical situation where a DTS customer wishes to change tariff and/or supplier, without contemplating a change of meter or heating system¹⁰. The switching options in principle available to this customer can be summarised as follows:

1. Choose another DTS tariff provided by the same supplier: if available, this option would tend to be a very close substitute for the existing DTS tariff and would have the advantage of maintaining the match between the tariff rates structure and the meter switching time and duration; this would be possible because the same supplier offering the new tariff will also be in control of the meter switching. This situation may occur for customers who are on an incumbent's "dead" DTS tariff, that is a product not available to new customers. Depending on the specification of their heating system (eg the number of hours to be energised), they could move to an open DTS tariff provided by the same supplier.
2. Choose a "mirror" DTS tariff provided by another supplier: if available, this option would also be a close substitute for the existing DTS tariff and would have the advantage of maintaining the match between the tariff rates structure and the meter switching time and duration; this would be possible because, by definition, a "mirror" DTS tariff is designed by a competing supplier with the same structure as the DTS tariff, with the tariff rates set by the competitor and applying to the heating load being switched by the sponsoring supplier. As discussed above, we understand that offering a "mirror" DTS tariff potentially involves an imbalance risk, which reduces competitors' incentive to offer it. Thus, this type of product may not be actively advertised by suppliers.

¹⁰ We do not consider here the situation where the customer is willing to change meter and/or heating system. This would involve a substantial cost for the customer.

3. Choose an alternative non-heating tariff provided by the same or another supplier: this option could in principle be available, but may provide an imperfect substitute for the existing DTS tariffs, essentially because there will be a poorer match between the tariff structure and the meter switching time and duration relative to the match with the DTS tariff. Most suppliers have reported that they would be able to “accommodate” customers with DTS meters on their standard single-rate, Economy 7, Economy 10 and other time of use tariffs they may offer. Nonetheless, they have also pointed out that this option would generally mean that customers would no longer get the periods of cheap electricity for heating purposes that were allowed by their DTS tariff. Moreover, due to the fact that the heating load might be switched on at different times every day, the supplier would obtain a meter reading showing the total energy used for heating load, but would not know how much of this can be exactly attributed at the peak and off-peak periods of an Economy 7 or Economy 10 tariff. As a result, the “accommodation” of a DTS customer on a standard time of use tariff would involve some estimation of the amount of consumption at the different tariff rates, which may complicate the billing process.

2.13. The three options are graphically compared in Figure 5 below, using illustrative tariff examples. Option 1 is a DTS tariff provided by the code sponsoring supplier. It consists of a day rate and night rate for normal use, bundled with a cheap heating rate applying only to heating load during the hours when this is switched on (10 hours distributed across different periods). Option 2 is a “mirror” DTS tariff which has the same structure as Option 1 but its rates are those offered by a competitor. Finally, Option 3 consists of two examples: a) a time of use tariff, such that the heating load would occur during 5 hours of the peak period and 5 hours of the off-peak period and b) a uniform tariff applying to all heating and general purposes loads during the whole day. As mentioned above, in case a) the supplier would not have perfect information on the distribution of the heating load between the different tariff periods.

Figure 5 Comparison of switching options for a DTS customer

Option 1: another DTS tariff provided by the incumbent																								
	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
Tariff normal uses	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Day I.	Night I.	Night I.	Night I.	Night I.	Night I.	Night I.	Night I.	Day I.	Day I.	Day I.	Day I.
Tariff heating uses		Heat I.	Heat I.	Heat I.										Heat I.	Heat I.	Heat I.	Heat I.	Heat I.			Heat I.	Heat I.		
Meter load switching periods																								
Option 2: a "mirror" DTS tariff provided by a competitor																								
	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
Tariff normal uses	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Day C.	Night C.	Night C.	Night C.	Night C.	Night C.	Night C.	Night C.	Day C.	Day C.	Day C.	Day C.
Tariff heating uses		Heat C.	Heat C.	Heat C.										Heat C.	Heat C.	Heat C.	Heat C.	Heat C.			Heat C.	Heat C.		
Meter load switching periods																								
Option 3: an alternative non-heating tariff provided by a competitor or by the same supplier																								
	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
Two rate tariff all uses	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Day	Night	Night	Night	Night	Night	Night	Night	Day	Day	Day	Day
Meter load switching periods																								
Option 4: a single rate tariff																								
	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00	00:00	01:00	02:00	03:00	04:00	05:00	06:00	07:00	08:00	09:00	10:00	11:00
Single rate tariff																								
Meter load switching periods																								

Note: "I" stands for Incumbent and "C" stands for Competitor

2.14. How valuable the different options are for a DTS customer, with a given pattern of heating load periods, will depend on the prices charged by suppliers, including both tariff rates and standing charges (if any). In general, it will take relatively low rates/standing charges for alternative Option 3 to be competitive relative to matched Options 1 and 2.

Customer complaints

2.15. We are aware of the existence of recurring complaints by customers with DTS meters, which have been brought to our attention either directly, or through letters from Members of Parliament. This has motivated our periodic review of this market segment over time.

2.16. The number of complaints related to the situation of DTS customers has grown recently, especially in relation with price increases in the second half of 2012. This has led to a formal question by the ECC Select Committee, which we are addressing through this report.

2.17. Focusing on the most recent complaints, we see that they relate to consumers in Scotland. Typically they centre around the following problems:

- Limited or no switching choice – according to these complaints it is extremely difficult, if not impossible, for customers to find alternative offers. For example, in some cases they mention that after extensive enquiries on online energy switch websites they have been unable to identify any alternatives. In other cases they report that they have only been able to obtain standard Economy 7 offers.
- Excessive pricing relative to regions where customers can choose dual fuel tariffs – according to complaints coming from customers in areas of Scotland where there is no access to mains gas, the percentage price increase for their DTS tariffs has been substantially higher than that for a dual fuel tariff in other regions.
- Concerns about the level of competition in Scotland and its effect on prices.

2.18. We also understand that there have been cases where DTS customers have been so frustrated at the lack of alternative offers that they paid for their electric storage heaters to be removed and replaced with a gas central heating system. In other cases, we have also learnt that the move away from the DTS system has occurred at the expense of comfort loss by the consumer.

2.19. A recent research by Consumer Focus (now Consumer Futures)¹¹ into energy consumers' experiences of time of use tariffs reveals a serious lack of information on the situation of DTS customers and recommends the need for further investigation on the profiles and experience of consumers on DTS tariffs.


Information request to the Big 6 suppliers

2.20. According to our own research, none of the suppliers providing DTS or "mirror" DTS tariffs are actively advertising these products, although they may provide information on request to customers. In particular, prices for these products are not generally available through suppliers' websites or through online switching websites.

2.21. On 22 February 2013 we issued an official information request to the Big 6 suppliers, pursuant to Section 47A of the Electricity Act 1989. We asked each supplier for two types of information:

- a) Prices excluding VAT, namely:

¹¹ Consumer Focus, "From devotees to the disengaged. A summary of research into energy consumers' experiences of Time of Use tariffs and Consumer Focus' recommendations", August 2012, available at <http://www.consumerfocus.org.uk/files/2012/09/From-devotees-to-the-disengaged.pdf>



The state of the market for customers with dynamically teleswitched meters

- Tariffs provided to domestic customers with an active DTS meter, if the supplier controls load switching
- If the supplier does not control load switching, “mirror” tariffs provided to domestic customers with an active DTS meter
- Standard Economy 7 or Economy 10 or other time of use tariffs

b) Information on domestic customers and consumption related to the above tariffs, namely:

- Number of customers supplied on a given tariff
- Total consumption supplied for a given tariff
- Best estimate or observed value for the percentage of consumption supplied at different tariff rates

2.22. We required a breakdown of the above information according to the following categories: year, electricity distribution area, product name, meter type, payment method and tariff structure (eg single or multiple unit rates, single or multiple tiers, and standing charges, if any).

Analysis of the information sent by the Big 6 suppliers

2.23. To inform our analysis we took into account the information provided by the Big 6 suppliers together with that made available to us by Elexon on customer numbers and consumption values, based on their Market Domain Data. This allowed us to compare data and to focus our analysis on three electricity distribution areas: Northern Scotland, Southern Scotland and East Midlands, where almost all dynamically teleswitched meters are located.

2.24. As to prices for DTS, Economy 7 and Economy 10 tariffs, the analysis presented below is based on the information submitted by the Big 6 suppliers, in response to our official request of 22 February 2013.

Northern Scotland

2.25. Northern Scotland is probably the region where dynamic teleswitching has retained most of its initial rationale, due to the presence of remote load managed areas and the lack of connections to mains gas.

2.26. As of December 2012, in Northern Scotland there were around 106,000 radio teleswitched meters at domestic premises, representing around 13% of all domestic electricity customers in the area. Approximately 82,000 of these meters are considered as dynamic¹² and some 77,000 are being supplied under a DTS tariff by the local incumbent, SSE¹³ or under a “mirror” DTS tariff by a competitor. SSE acts as the group code sponsor for all radio teleswitched meters located in the Northern

¹² Source: Ofgem information request to Elexon

¹³ Source: Ofgem information request to SSE

Scotland area, and is therefore responsible for the switching instructions to these meters regardless of whether it keeps a supply contract with the customer.

2.27. SSE provides a variety of different DTS tariffs to customers on DTS meters. Most of these are legacy products, that are no longer available to new customers or are available but not actively marketed.

2.28. The standard Storage Heat Control (SHC) and the standard Total Heat Total Control (THTC) are the most representative among SSE’s DTS tariffs. THTC accounts for the majority of SSE’s DTS customers, while SHC only for a small number. As indicated by SSE, the company no longer market THTC and SHC to new customers. However, when launching new products, SSE report they create a THTC and SHC version in order to allow their existing customers to switch products if they so wish.

2.29. As described in table 4 below, both standard THTC and SHC are two-rate combined tariffs, applying to normal and heating usages. Heating load is switched on usually during 8 hours a day, with the daily switching time being adjusted according to the weather conditions (temperature and wind chill).

Table 4 Main features of standard DTS tariffs in Northern Scotland

Product name	Structure	Application
Total Heat Total Control (THTC)	<p>Fixed daily service charge</p> <p>Two variable rates:</p> <ul style="list-style-type: none"> One for general purposes One for space heating and water heating 	<ul style="list-style-type: none"> Not actively marketed, but still offered to new customers upon request Recommended for premises where electric storage heating account for at least 60% of all heating and where water heating is also done electrically Storage space heating is energised between 5 and 12 hours a day, usually for 8 hours, chosen by SSE on the basis of weather conditions. The most common times are: 04:00 - 08:00 12:45 - 16:00 18:45 - 19:30 Water heating is also usually energised for 8 hours per day, the most common times being: 01:30-03:30 05:30-07:00 13:30-16:30 21:00-22:30
Storage Heat Control (SHC)	<p>Fixed daily service charge</p> <p>Two variable rates:</p> <ul style="list-style-type: none"> One for general purposes One for space heating and water heating 	<ul style="list-style-type: none"> Not actively marketed, but still offered to new customers upon request Recommended for premises where electric storage heating account only for some of the house heating (the rest, as well as hot water, may be on gas) Storage space heating is energised during 8 hours, including a minimum of three hours between 10 pm and 10 am and a minimum of two hours between 10am and 10 pm, chosen by SSE on the basis of weather conditions.

Source: SSE

2.30. The nature of most remaining DTS tariffs offered by SSE is generally quite bespoke, depending on the size/profile of the customer's heating load, although SSE have said they broadly follow the same principles as THTC and SHC tariffs. The company also has several legacy tariffs that are provided to just one or very few customers and they often only apply to heating meters.

2.31. All the other Big 6 are also active in the Northern Scotland region, albeit with a minimal presence (as seen in Chapter 1, in December 2012 SSE accounted for 95% of customers with dynamically teleswitched meters and of 93% of customers with all teleswitched meters).

2.32. Only one supplier reports that it offers a "mirror" tariff, directly competing against SSE's main DTS tariff, the THTC tariff. This "mirror" tariff has the same structure as SSE's THTC tariff, with the competitor's rates, but the heating load switching remains under SSE's control. The number of customers on this tariff has remained quite low during the analysed period (below 300 customers).

2.33. On the other hand, all Big 6 offer Economy 7, Economy 10 and single-rate tariffs in the region and have indicated that they are able to "accommodate" DTS customers on them. Nevertheless, few suppliers have provided information on DTS customers who are on these tariffs. In general, suppliers have reported that they have difficulties in identifying with some precision which of their customers have active DTS meters.

2.34. We have considered SSE's standard DTS tariffs along with a number of standard Economy 7, Economy 10 and single-rate tariffs provided by the other large suppliers in the Northern Scotland region. The products have very different rate structures, including multiple and single-rate tariffs, with and without standing charge, rates varying negatively with consumption, etc. Moreover, most products have multiple rates applying to different uses and/or times of the day, and, thus, involving a certain split of the total annual consumption among the different rates.

2.35. Our own research, based on data provided by Elexon and suppliers, suggests that the consumption profile varies a lot across customers and shows seasonal variations, especially significant in Northern Scotland. Nonetheless, it can be said that, in general, customers on DTS tariffs have a higher percentage of consumption on the low heating rate (above 60-70% on average during the year), compared to the percentage that Economy 7 or Economy 10 customers use on the reduced night rate (around 40-60%, as a year average). It is important to notice that one of SSE's DTS tariffs, the standard SHC, has a relatively low heating consumption percentage (49%) relative to the THTC tariff. We understand that this is due to the different nature of the two products, as explained in Table 4. Unlike the THTC tariff, SSE recommends the SHC tariff to domestic premises which rely only partially on electric storage heating.

2.36. In order to compare the different products we have considered the following:

- If the DTS customer were to move to a "mirror" tariff, it is reasonable to assume that the consumption split would be the same as that associated with

the mirrored DTS tariff. This is because the heating load would still be controlled dynamically by the incumbent and the tariff structure would be replicating that of the DTS tariff.

- If the DTS customer were to move to an Economy 7 or Economy 10 tariff, the consumption split among tariff rates would differ from that associated with the DTS tariff. As explained above this will depend on the heating load periods and on suppliers' estimate of how much consumption should be billed at each tariff rate. Thus, the comparison with an Economy 7 or Economy 10 tariff can only be an indirect one, which assumes the observed consumption split for existing Economy 7 and Economy 10 customers, without dynamically controlled heating load.

2.37. We have calculated the annual bill for customers with an average annual consumption of 8,000 kWh on SSE's standard DTS tariffs (THTC and SHC), on direct debit payment¹⁴, over the period 2009-2012. We have compared it against the bill associated with the average and lowest prices for Economy 7, Economy 10, standard electricity and standard dual fuel rates provided by the Big 6 suppliers. The latter should be taken as a very indicative figure, since it involves assuming an equivalent amount of gas consumption if the customer were to change his/her current electric heating system into a gas heating system.

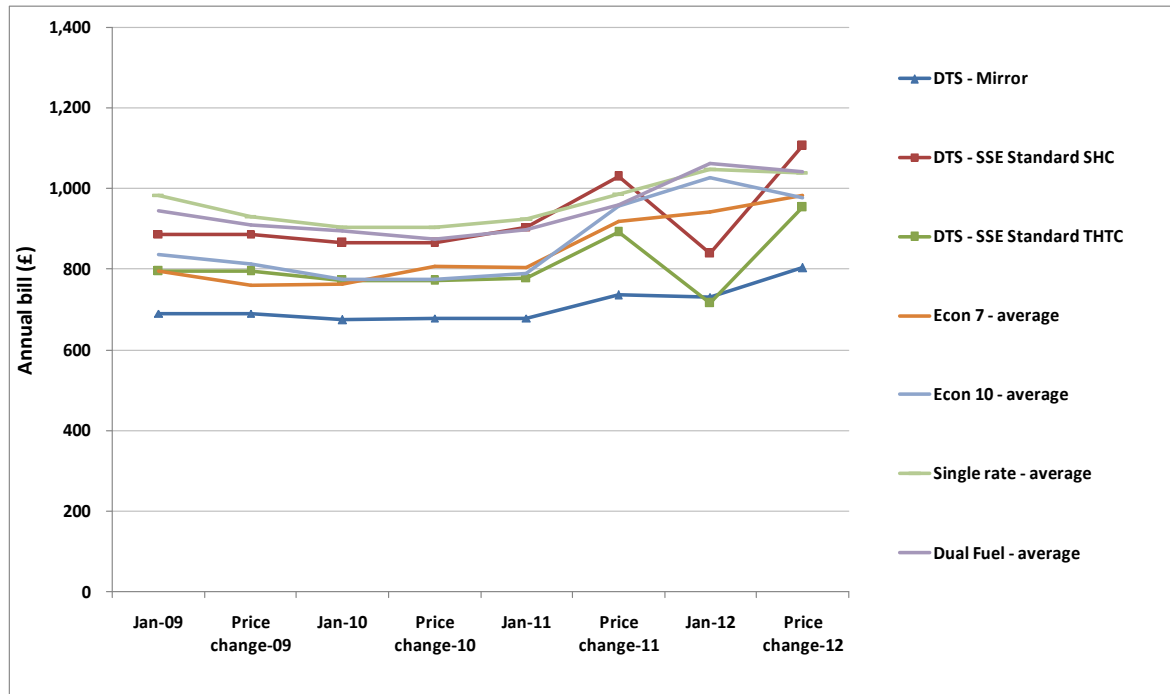
2.38. Our choice of the average consumption level is based on consumption and customer data provided by SSE for their customers on the standard THTC tariff: in 2009 they reported an average consumption between 6,600 and 10,500 kWh and for 2012 they reported a similar range, between 5,000 and 10,100. As a general reference, it should be recalled that the typical medium consumption figure used by Ofgem for households on a time of use tariff, such as Economy 7, is 5,000 kWh, while the figure for the typical high consumption for these customers is 8,300 kWh¹⁵.

2.39. We have found that SSE's THTC tariff compares quite favourably with the average Economy 7, Economy 10, standard single-rate and dual fuel tariffs in the Northern Scotland region during the period 2009-2012, although it is more expensive than the "mirror" DTS tariff. On the other hand, SSE's SHC tariff tends to imply one of the highest annual bills throughout the period.

¹⁴ We have also carried out the same analysis for prepayment and standard credit. The results are similar to those obtained for customers on direct debit.

¹⁵ See our recent Review of typical domestic consumption values, July 2013, Consultation, Reference: 113/13

Figure 6 Indicative comparison of bills from direct debit DTS tariffs and average Econ 7, Econ 10, single-rate and dual fuel tariffs - Northern Scotland - 2009-2012

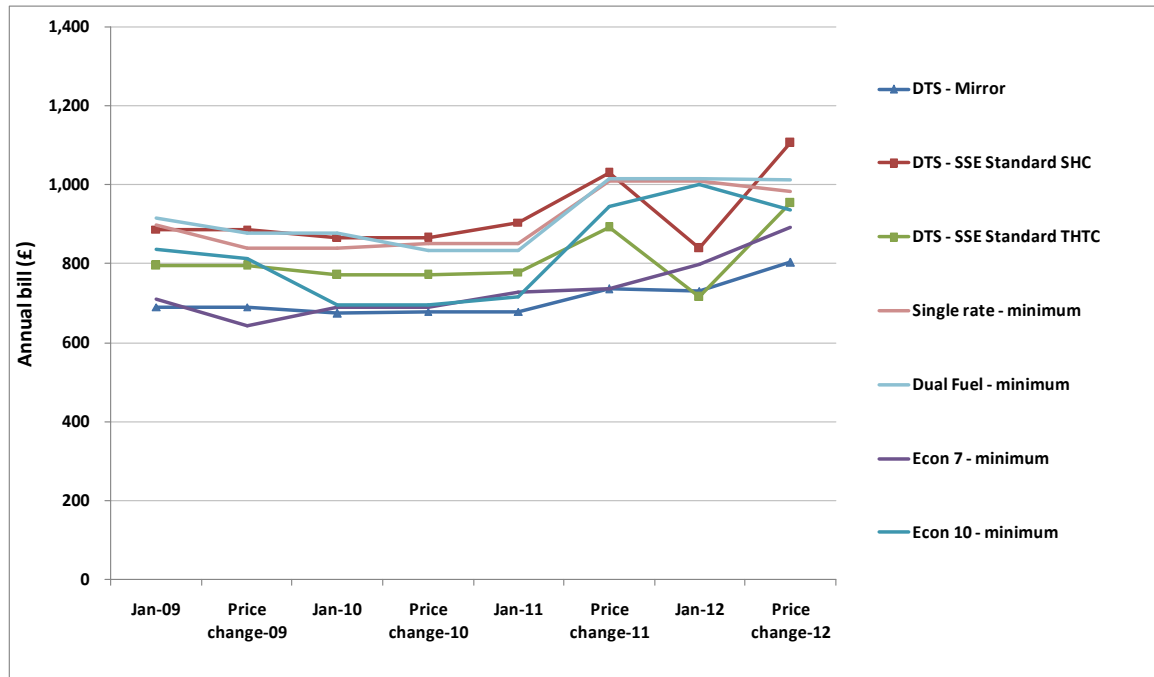


Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used "Price change-xx" to refer to any month during "year xx" when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

2.40. The comparison is less favourable if we consider SSE's DTS tariffs together with the lowest price, each year, for Economy 7, Economy 10, standard electricity and standard dual fuel rates. The bill associated with the best Economy 7 offer tends to be cheaper than SSE's THTC tariff during most of the period and the best Economy 10 offer was cheaper in 2010 and 2011. SSE's THTC tariff remains cheaper than the best offers for standard electricity single-rate and dual fuel tariffs during the whole period.

Figure 7 Indicative comparison of bills from direct debit DTS tariffs and best offers for Econ 7, Econ 10, single-rate and dual fuel tariffs - Northern Scotland – 2009-2012



Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used "Price change-xx" to refer to any month during "year xx" when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

2.41. Overall, the evidence shows that, in Northern Scotland, SSE’s THTC customers, with a higher heating load, have had a bill in line or below that implied by the average Economy 7, Economy 10 tariffs and below the best single-rate and dual fuel single-rate tariffs. However, DTS customers with relatively lower heating loads, on SSE’s SHC tariff, have generally experienced prices above average Economy 7 and Economy 10, and, in some years, even above average single-rate and dual fuel tariffs.

Southern Scotland

2.42. As of December 2012, in Southern Scotland there were around 242,000 domestic customers with radio teleswitched meters, representing about 12% of all domestic electricity customers in the region. Nevertheless, as explained above, only just above 79,000 of these meters are considered as dynamic¹⁶ and only approximately 50,000 are being supplied under a DTS tariff by the local incumbent,

¹⁶ Source: Ofgem information request to Exelon

Scottish Power¹⁷, or under a “mirror” DTS tariff by a competitor. Scottish Power acts as the group code sponsor for all radio teleswitched meters located in the Southern Scotland area, being responsible for the switching instructions to these meters.

2.43. Scottish Power offers a variety of DTS tariffs to these customers, including evergreen and legacy products. Our analysis focuses on the two standard evergreen products: ComfortPlus Control and ComfortPlus White Meter with Weathercall, accounting for the majority of Scottish Power’s DTS customers. Scottish Power’s remaining DTS customers are now on dead DTS tariffs. These were originally fixed-term offers that have now expired, having the same structure and application as the two standard evergreen tariffs for the meter types.

2.44. It should be mentioned that Scottish Power also offers other specialist heating tariffs in Southern Scotland including White Meter No.1, Economy 2000 and various off-peak tariffs. However, the company confirmed that these products are not dynamically teleswitched.

2.45. The Comfort Plus Control tariff is a two-rate DTS tariff with a daily standing charge, while the Comfort Plus White Meter with Weathercall is a three-rate DTS tariff with a daily standing charge. As described in the table below, both include rates for general purpose and heating uses.

¹⁷ Source: Ofgem information request to Scottish Power

Table 5 Main features of standard DTS tariffs in Southern Scotland

Product name	Structure	Application
ComfortPlus Control	<p>Fixed daily service charge</p> <p>Two variable rates:</p> <ul style="list-style-type: none"> • General purposes • Electricity supplied by the heating meter, made available on three circuits 	<ul style="list-style-type: none"> • Available to new customers • Only recommended when the electric system provides whole house heating and storage heating forms at least 60% of the total installed heating load. • The storage space heating is energised between 0 and 14 hours chosen by Scottish Power on the basis of weather conditions • The storage water heating circuit supplies storage water heating and is energised for periods formally defined at ScottishPower's discretion totalling 4 hours per day, but in practice would normally be 0400 to 0830. • The direct space and water heating circuit supplies direct acting space and water heating and is energised 24 hours per day.
ComfortPlus White Meter with Weathercall Option*	<p>Fixed daily service charge</p> <p>Three variable rates:</p> <ul style="list-style-type: none"> • Day rate other purposes • Night rate other purposes • Electricity supplied via a separate controlled circuit to storage space heating (does not include water heating) 	<ul style="list-style-type: none"> • Available to new customers • Recommended for houses with correctly sized heating systems using high capacity storage heaters. • The controlled circuit rate applies to electricity supplied to storage space heating. This is energised for periods of an aggregate daily duration between 0 and 14 hours chosen by Scottish Power on the basis of forecast weather conditions

Source: Scottish Power

*Scottish Power also provides a similar tariff without the Weathercall Option, but this is not a dynamic tariff

2.46. All the other Big 6 are also active in the Southern Scotland region, albeit with a reduced presence (as seen above, in December 2012 Scottish Power accounted for 93% of customers with dynamically teleswitched meters and of 87% of customers with all teleswitched meters, both on static and dynamic regimes).

2.47. A few suppliers have reported that they offer customers on DTS meters a "mirror" tariff in the Southern Scotland region, replicating the structure of one or both of Scottish Power's DTS tariffs. However, the number of customers on these "mirror" tariffs was below 2,500 throughout the analysed period.

2.48. On the other hand, all Big 6 offer Economy 7, Economy 10 and single-rate tariffs in the region and have reported being able to "accommodate" DTS customers on those, although they have said this would involve a mismatch between the tariff

period switching pattern and the meter switching pattern and the loss of a specific low heating rate. Suppliers other than the incumbent have also indicated they face difficulties in identifying with precision which of their customers have active DTS meters.

2.49. Through our research we have obtained the details of Scottish Power's standard DTS tariffs, those of "mirror" tariffs, as well as of a number of standard Economy 7, Economy 10 and single-rate tariffs provided by the other large suppliers in the Southern Scotland region. The products are very different in many respects, including tariff structure and split of consumption between the different uses and times. We notice that Scottish Power reports the highest consumption percentage on the heating rate for its ComfortPlus Control DTS tariff (78% on average during the year), and lower percentage on the heating rate for its ComfortPlus White Meter with Weathercall Option (59% on average during the year). This is essentially because the former applies to all heating uses, whereas the latter only applies to storage space heating, with most hot water being heated at the night rate (rate 2).

2.50. In order to compare the different products for a DTS customer we make the same assumptions explained for Northern Scotland and, in particular, we assume the following concerning the different "mirror" tariffs observed in Southern Scotland:

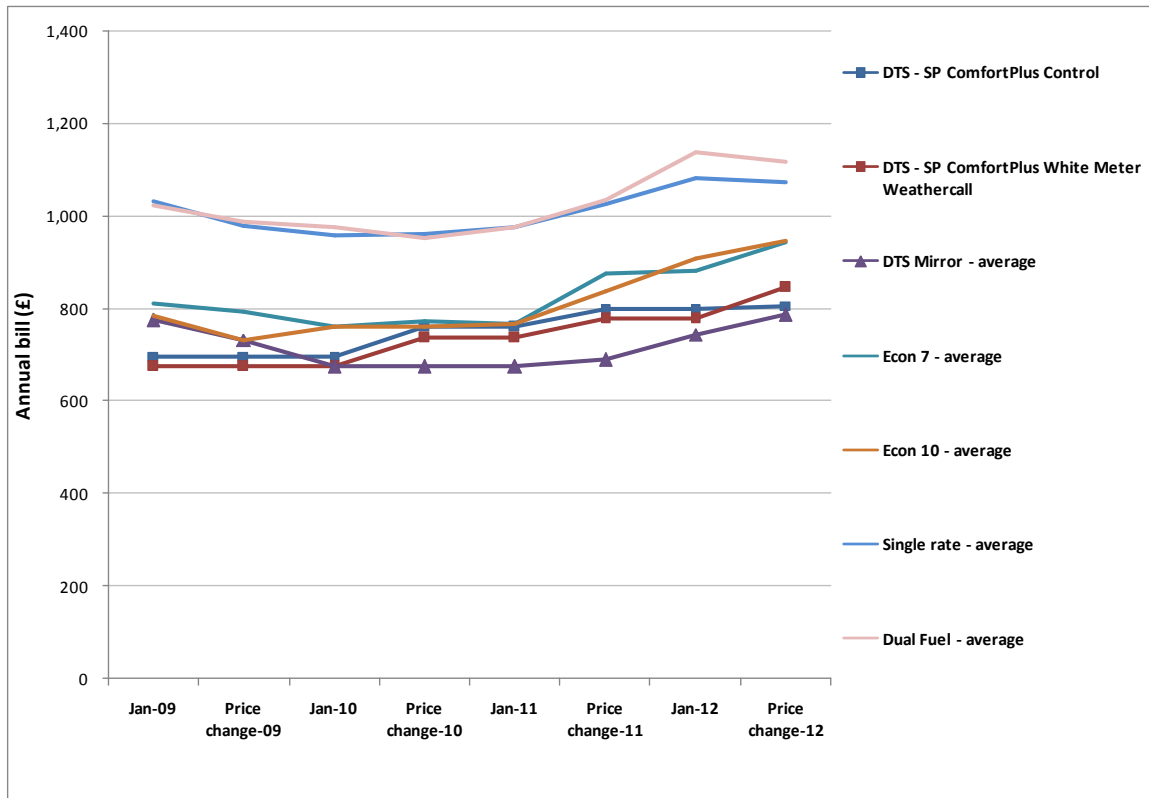
- For "mirror" tariffs competing with Scottish Power's ComfortPlus Control, we assume that the relevant consumption split is the same as that provided by Scottish Power for this DTS tariff.
- For "mirror" tariffs competing with Scottish Power's ComfortPlus White Meter with Weathercall Option, we assume the consumption split provided by Scottish Power for this DTS tariff.

2.51. Using the same methodology as before, we have analysed the evolution, over the period 2009-2012, of the annual bill of DTS customers with an average annual consumption of 8,000 kWh on Scottish Power's standard DTS tariffs (ComfortPlus Control and ComfortPlus White Meter with Weathercall Option) and compared it against the bill associated with the average and lowest prices for Economy 7, Economy 10, standard electricity and standard dual fuel rates provided by the Big 6 suppliers. We focus here on the standard credit payment, as this is the only payment method for which all "mirror" tariffs are available. Nevertheless, our findings also hold for customers on direct debit and prepayment.

2.52. The choice of the average consumption level for a DTS customer takes into account the consumption and customer data provided by Scottish Power: in 2009 they reported customers on DTS tariffs as having an average consumption between 6,700 and 9,500 kWh and for 2012 they reported a similar range, between 6,700 and 10,000.

2.53. Our main finding is that, throughout the period examined, Scottish Power's DTS tariffs compare favourably with the average single-rate, dual fuel, Economy 7 and Economy 10 tariffs available in Southern Scotland. Until 2010 they were also cheaper than the average "mirror" DTS tariff. However, from 2010 onwards, they have tended to be more expensive than the average "mirror" DTS tariff.

Figure 8 Indicative comparison of bills from standard credit DTS tariffs and average Econ 7, Econ 10, single-rate and dual fuel tariffs - Southern Scotland - 2009-2012

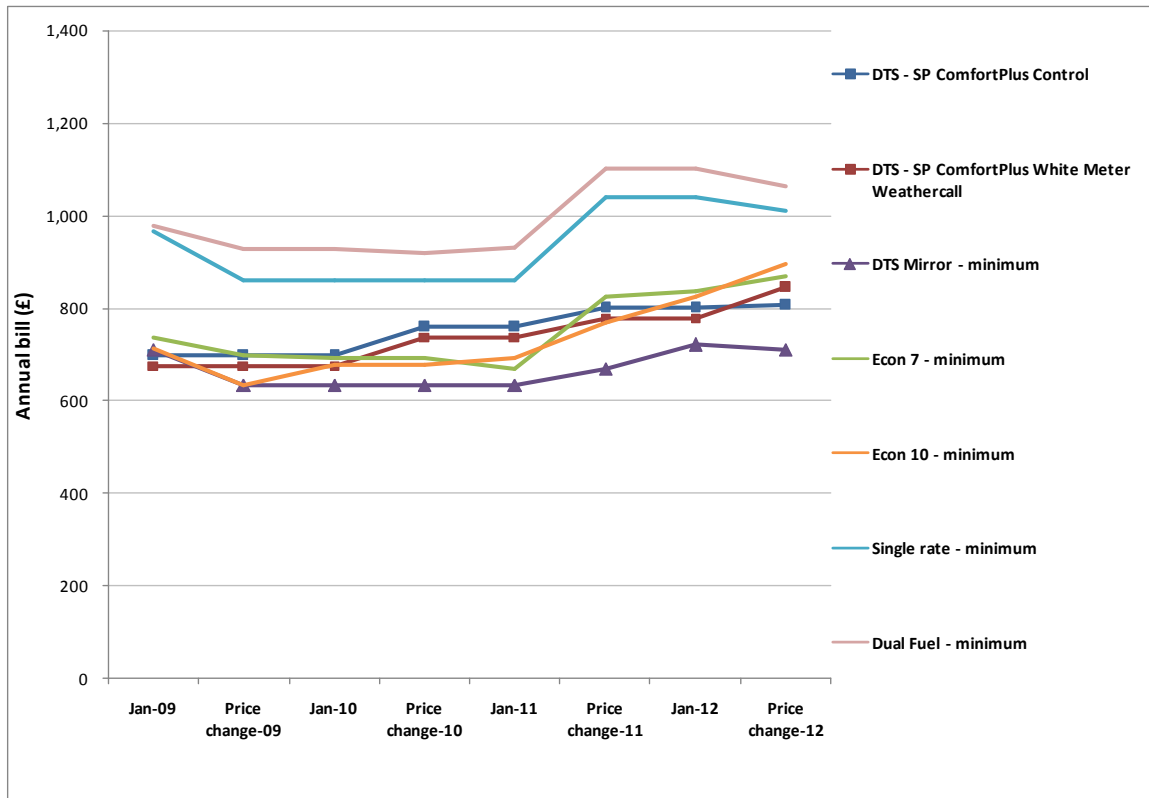


Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used "Price change-xx" to refer to any month during "year xx" when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

2.54. Considering the lowest price each year for alternative tariffs reveals that Scottish Power's DTS tariffs still compare favourably with the lowest single-rate and dual fuel tariffs during the whole period, but do not always compare favourably with the Economy 7 and Economy 10 lowest tariffs. In particular, they have been slightly more expensive than these tariffs during 2010 and 2011 and have become cheaper in 2012.

Figure 9 Indicative comparison of bills from standard credit DTS tariffs and best offers for Econ 7, Econ 10, single-rate and dual fuel tariffs - Southern Scotland – 2009-2012



Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used "Price change-xx" to refer to any month during "year xx" when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

2.55. Overall, the evidence gathered shows that DTS prices have changed broadly in line with alternative tariffs in Southern Scotland and it does not suggest that DTS customers have been placed at a comparative price disadvantage. Although limited and not very well publicised by competitors, we note that close substitute products to DTS tariffs are available in this region and may exert some competitive pressure on the incumbent.

East Midlands

2.56. As of December 2012, in the East Midlands there were around 390,000 customers with radio teleswitched meters at domestic premises, representing close to 16% of all domestic electricity customers in the region. Almost all these meters are considered as dynamic¹⁸. Nevertheless, only approximately 31,000 are being supplied under a DTS tariff by the local incumbent, E.ON¹⁹, acting as the group code sponsor for all radio teleswitched meters located in the East Midlands area.

2.57. The reason for this significant difference stems from the fact that E.ON is not really managing most of these meters in a dynamic fashion, ie it is not changing the switching time on a frequent basis, but rather on the basis of a programme which is rarely changed. In turn, this reflects the fact that E.ON is supplying many of these meters with time of use, static type products (mainly Economy 7 tariffs).

2.58. E.ON only provides two dynamic tariffs to its customers in the East Midlands region: these are known as Heatwise and Warmassist Heatwise. The former is an evergreen product, applying only to heating consumption, which is available on the three different payment methods (prepayment, direct debit and standard credit).

2.59. The Warmassist Heatwise tariff is also an evergreen product, which was introduced in 2008. This tariff has the same structure and works in the same way as the Heatwise tariff, but is only available, at a discount, on direct debit and standard credit to vulnerable customers that are eligible according to a number of criteria²⁰. E.ON reports a very small number of customers on this product, below 300 in January 2013.

2.60. Our analysis focuses on the Heatwise tariff. As indicated by E.ON, this provides 10 hours of storage and water heating (5 continuous hours during the night, 3 during the afternoon and 2 during the evening, which are the same for both storage and water heating). Unlike DTS tariffs seen in other regions, the switching times and number of hours available are not determined or dependent on weather conditions. E.ON changes the switching times based on the cheapest wholesale prices within each band (night, afternoon and evening).

¹⁸ Source: Ofgem information request to Elexon

¹⁹ Source: Ofgem information request to E.ON

²⁰ As reported by E.ON, the account holder or, if the premises are occupied by two persons both household members, must be over 60 and either in receipt of Pension Credit or, at E.ON's discretion, based on medical needs with a household income lower than the E.ON WarmAssist threshold level, and spending at least 10% of the household income on energy

Table 6 Main features of standard DTS tariffs in East Midlands

Product name	Structure	Application
Heatwise	<p>Fixed daily service charge</p> <p>Three variable rates:</p> <ul style="list-style-type: none"> Rate applying to a boost facility enabling the customer to have their storage and water heating on outside the reduced rate periods Reduced rate applying to storage space heating Reduced rate applying to water heating 	<ul style="list-style-type: none"> Available to new customers Only applies to electricity demand for heating purposes E.ON provides 10 hours of storage and water heating, chosen on the basis of the cheapest wholesale prices within each band indicated below: <ul style="list-style-type: none"> Night – 5 continuous hours between 00:00 and 07:00 in weekdays (08:00 in weekends) Afternoon – 3 continuous hours between 13:00 and 16:30 in weekdays (17:30 in weekends) Evening – 2 continuous hours between 17:30-22:00 <p>There must be a gap of at least 1 hour between the afternoon and evening switching periods.</p>

Source: E.ON

2.61. All the other Big 6 suppliers are also active in the East Midlands region, with a significant presence in the segment of teleswitched meters with dynamic capability. As seen in Chapter 1, in December 2012 EON accounted for about 40% of customers with DTS meters with the remaining 60% being mainly supplied by other large suppliers.

2.62. No “mirror” tariffs have been reported, with a rate structure matching E.ON’s DTS tariffs, but all suppliers have suggested they can “accommodate” DTS customers on their standard tariffs. In particular, two suppliers have indicated that they have a significant number of customers with DTS meters on single-rate and time of use tariffs, which totalled about 54,000 in January 2009 and 64,000 in January 2013.

2.63. Through our research we have obtained the prices for E.ON’s Heatwise tariff and a number of standard Economy 7, Economy 10 and single-rate tariffs provided by the other large suppliers in the East Midlands region.

2.64. The only DTS tariff available, E.ON’s Heatwise, is unbundled, ie it only applies to the heating load. The associated consumption split applies to the different heating uses and is not directly comparable to the consumption splits for other tariffs, which apply to the consumer’s total demand. Therefore, in order to make an approximate comparison of the different options for a customer on E.ON’s Heatwise tariff we have assumed that the DTS customer’s remaining consumption for uses other than heating is charged at EON’s Standard Economy 7 tariff or at E.ON’s Standard single-rate tariff . Moreover, the consumption split between heating and general purpose load is taken to be 60-40%, using a conservative assumption.

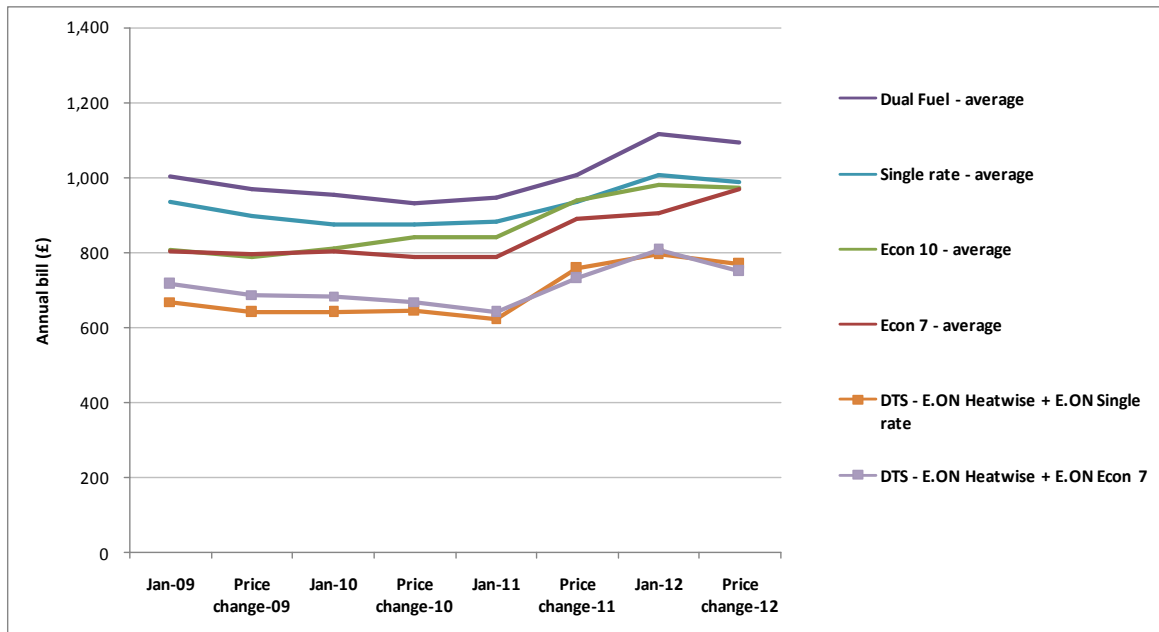
2.65. Likewise for Northern and Southern Scotland, we have analysed the evolution, over the period 2009-2012, of the annual bill of a DTS customer on the combination

of E.ON’s Heatwise and E.ON’s Standard Economy 7 tariff or E.ON’s Standard single-rate tariff. We have compared it against the bill associated with the average and lowest price of Economy 7, Economy 10, standard electricity and standard dual fuel rates. We have focused here on the direct debit payment option²¹.

2.66. Again, we have assumed an average annual consumption of 8,000 kWh (60% of which being for heating purposes) based on data provided by suppliers and, in particular, on the the following E.ON’s data: in 2009 they reported customers on DTS tariffs as having an average heating consumption between 4,000 and 5,400 kWh and for 2012 they reported a slightly higher range, between 4,300 and 6,800.

2.67. Throughout the period examined, the combination of E.ON’s DTS Heatwise tariff, with either a single-rate tariff or an Economy 7 tariff, compares favourably with the average single-rate, dual fuel, Economy 7 and Economy 10 tariffs available in East Midlands.

Figure 10 Indicative comparison of bills from direct debit DTS tariffs and average Econ 7, Econ 10, single-rate and dual fuel tariffs - East Midlands - 2009-2012



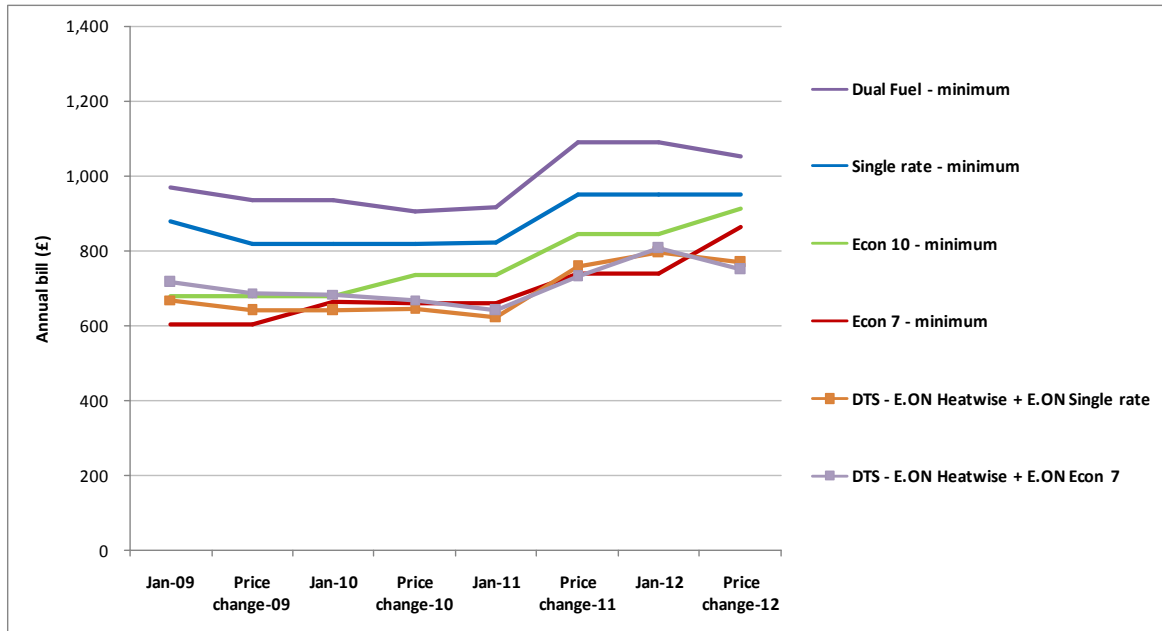
Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used “Price change-xx” to refer to any month during “year xx” when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

²¹ We have also carried out the same analysis for prepayment and standard credit. The results are similar to those obtained for customers on direct debit.

2.68. Both E.ON's DTS tariff combinations also compares quite favourably with the lowest prices available for Economy 7, Economy 10, single-rate and dual fuel tariffs.

Figure 11 Indicative comparison of bills from direct debit DTS tariffs and best offers for Econ 7, Econ 10, single-rate and dual fuel tariffs - East Midlands - 2009-2012



Note: During a given year, suppliers may have changed their prices. Since this tends to occur at different dates for different suppliers, we have used "Price change-xx" to refer to any month during "year xx" when the change may have taken place.

Source: Ofgem and Big 6 information submission to Ofgem, March-May 2013

2.69. Our analysis suggests that in East Midlands there is no evidence that customers on DTS tariffs may have been disadvantaged by the incumbent's pricing strategy. Although in the region suppliers have not reported any specific "mirror" tariff competing against E.ON's DTS tariff, it is important to notice that many customers on DTS meters (possibly not managed in a dynamic fashion by E.ON) are being supplied by competitors on Economy 7 and single-rate tariffs.

Conclusions on the DTS tariff comparison in the different regions

2.70. In order to understand the possible switching options available to DTS customers we have focused on the standard DTS products in each region and compared them with available alternatives, including close substitutes, such as "mirror" tariffs, and more distant substitutes, such as Economy 7, Economy 10, single-rate and dual fuel tariffs, during the period 2009-2012.

2.71. The following results can be highlighted:

- In Northern Scotland, traditionally featuring the highest supply concentration in the retail domestic market and lacking connection to mains gas in many areas, SSE provides two standard DTS tariffs, accounting for the great majority of customers with DTS meters. Only a few customers have moved to alternative options, including one “mirror” tariff, and other standard time of use and single-rate tariffs offered by large suppliers. Prices for SSE’s DTS customers with higher heating loads tend to compare quite favourably against most alternative Economy 7, Economy 10, single-rate and dual fuel rate tariffs. However, this is not the case for DTS customers with lower heating loads, that have been priced above most alternative options.
- In Southern Scotland, also featuring a relatively high degree of concentration in the retail domestic market, Scottish Power provides two standard DTS tariffs, accounting for a large proportion of customers with DTS meters. A reduced number of customers have moved to several “mirror” tariffs, offered by other large suppliers and to other standard time of use and single-rate tariffs offered by large suppliers. Scottish Power’s DTS tariffs are in line with alternative average Economy 7 and Economy 10 tariffs in Southern Scotland and cheaper than the best single-rate and dual fuel offers. Thus, the evidence analysed for this region does not suggest that DTS customers have been placed at a comparative price disadvantage.
- In East Midlands, which shows a moderate degree of concentration in the retail domestic market, E.ON provides one standard DTS tariff that only applies to heating consumption. In the region there are no specific “mirror” tariffs competing against E.ON’s DTS tariffs, but it is important to notice that many customers on DTS meters, not managed in a dynamic fashion by E.ON, are being supplied by E.ON and competitors on Economy 7 and single-rate tariffs. E.ON’s DTS tariff, either combined with a single-rate tariff or with an Economy 7 tariff for non-heating consumption, tends to represent the cheapest deal relative to most alternative time of use, single-rate and dual fuel tariffs. Therefore, we have found no evidence that DTS customers might have been priced at a comparative disadvantage in East Midlands.

2.72. These findings lead to the conclusion that in most cases customers with dynamically teleswitched heating load tend to be better off compared to customers with Economy 7, Economy 10 and unrestricted meters, that do not offer the heating remote control service. This is in line with the expectation that DTS should provide customers with high electric heating consumption with energy at a more affordable price. However this does not seem always the case in Northern Scotland, where the price paid by a small number of customers on a specific DTS product is more expensive than alternative options.

2.73. We have also reasons for concern regarding customers with teleswitched meters who are not on a DTS tariff. First, it is not always clear to customers or suppliers where this occurs, which may mean that these customers are not aware of the choices open to them. Second, as shown by our comparison exercise, customers with statically used teleswitched meters are likely to be on static Economy 7, Economy 10 or single-rate tariffs, which tend to be more expensive than DTS tariffs.

3. The outlook for DTS meters and tariffs

Chapter Summary

The future of DTS meters and tariffs is inherently influenced by the roll-out of smart meters for domestic customers, to be completed by 2020. Once installed, smart meters will have the potential to eliminate the barriers to entry associated with the radio teleswitching system and enhance the development of competition for customers with load control tariffs. However, in the short term we consider that there remain issues around the levels of customer awareness of the options they face and suppliers' willingness to actively promote alternative tariffs to these customers. In the context of our Retail Market Review, we intend to take a number of steps to find out more about and improve the experience of DTS customers, including a round table with suppliers, new consumer research, ad-hoc information solutions and ongoing close monitoring.

The future of DTS meters

3.1. The RTS is currently the only widely-used system for dynamic switching of non-half hourly tariff registers in Great Britain. As explained in Chapter 1, the RTS relies on the transmission of messages through the BBC's 198 kHz long wave infrastructure to teleswitch devices attached to customers' meters in order to turn heating installations on and off.

3.2. Concerns were raised in the past about the possible discontinuation of the RTS. However, the BBC and ENA have recently reached an agreement to keep the RTS working until March 2020, so that the continuity of service for DTS customers should not be at risk over the next few years.

3.3. Nevertheless, radio teleswitched meters use a technology that is increasingly obsolete and smart meters provide an opportunity to improve on this. The Government goal is for all households and other small energy customers to have smart meters installed by their energy suppliers by 2020. It is expected that smart meters will enhance domestic consumers' energy awareness/energy efficiency through the provision of better consumption information, in a more accessible and frequent way. Moreover, as the deployment of smart metering proceeds, an increasing range of market-led devices is expected to become available to assist consumers to manage energy displays, smart appliances and home automation tools. These devices will be able to securely connect to the smart meter, receiving and reacting to consumption and pricing data.

3.4. The new smart metering infrastructure is set to become the primary mechanism for dynamic switching, replacing the RTS within the 2020 horizon. The transition from the existing system to the new one will require changes in the arrangements

that regulate the transmission of switching times and their notification for balancing and settlement purposes²². It will also possibly require a new supplier-DNO framework replacing the set of responsibilities established for each party under the current Radio Teleswitch Agreement.

3.5. Beyond the technical issues, which remain outside this report's scope, the roll out of smart meters has important implications for DTS consumers and competition.

3.6. In the short term, given the imminence of the smart meter roll out, potential competitors, who already face difficulties and costs in entering this market segment, as described in Chapter 1, could become even more reluctant to grow their DTS customer base. This lack of incentive might be reinforced by the fact that the first generation of smart meters (known as SMETS 1) does not allow for auxiliary load control switches²³.

3.7. However, in the medium to long-term, once installed, smart meters have the potential to eliminate the barriers to entry associated with the RTS, thereby enhancing the development of competition in this segment of the market. It is expected that the second generation of smart meters (known as SMETS 2 meters) will have the same key functionalities as SMETS 1 meters and, in addition, will allow suppliers to remotely control heating load without the downside associated with the control of groups of meters by a single supplier.

3.8. The smart metering system would avoid the difficulties of offering dynamic heating tariffs through the RTS infrastructure, in that suppliers will be able to exercise control over load when meters are switched (rather than relying on the incumbent group code sponsor) and would not need to visit the customer premise to reconfigure the meter. As a result, the costs associated with offering load control tariffs shall reduce significantly.

3.9. Moreover, the new access processes controlled by the Data and Communication Company (DCC) will not allow suppliers to issue load control instructions to other suppliers' smart meters²⁴ and will therefore end the legacy Group Sponsor Code arrangements under the Radio Teleswitch Agreement.

²² Under the current teleswitching arrangements ENA provides a single, daily report of teleswitch times to the Supplier Volume Allocation Agent (SVVA), which uses it to calculate profile coefficients to ensure that energy is allocated to the correct half hour periods. Under the new smart arrangements, the Data and Communications Company (DCC) will process meter register switch requests and remote load control requests from suppliers and send commands to be applied by the relevant smart Electricity Metering System.

²³ See Appendix 2 for a more detailed description of SMETS 1 and SMETS 2 meters.

²⁴ See Elexon, Dynamic Switching Roadmap, 22 of August 2012.

3.10. As an additional advantage, the two-way functionality of smart meters will put customers in control of their consumption, creating the opportunity to overcome a key limitation of teleswitched meters as a demand response tool.

3.11. The roll out itself will also provide an occasion for suppliers to update information on which premises still have electric heating in use and thus clarify what the actual tariff options for customers are.

3.12. Finally, we notice that, as suppliers acquire the capability to easily change the meter switching times in the new smart meter environment, further work will be needed to clarify the regulation and commercial arrangements to ensure that DNOs can still access this capability for network management purposes. Some of these issues were highlighted in our recent demand-side response consultation document.²⁵

DTS tariffs and the Retail Market Review

3.13. Our analysis confirms the existence of a variety of DTS tariffs, generally provided by a few suppliers, typically the ex-PES in a particular region, which face limited pressure from competitors, especially in areas of Scotland. DTS customers tend to stick with their original DTS tariff and/or supplier, in a context where:

- Each supplier tends to offer a high number of DTS tariffs, not just related to the type of meter, but also the specificity of the customer's heating system. On the other hand, a significant number of DTS tariffs are "dead" products, not available to new customers, or not actively marketed by suppliers. Some of these tariffs may be more expensive than other comparable products.
- There is a serious lack of publicly available information on DTS tariffs and "mirror" DTS tariffs, which is preventing consumers from comparing their current tariff with alternatives and assessing whether it is convenient to switch.

3.14. In March 2013 we put forward the final Retail Market Review (RMR) proposals for the domestic market and in June 2013 we published our Statutory Consultation on these proposals. The proposed new rules eliminate unnecessary complexity in tariff choices, provide consumers with better, more relevant information and establish legally binding fairness obligations. We envisage that these rules will be implemented from summer 2013, largely in place by the end of the year and fully operational over the next twelve months.

3.15. We envisage that the implementation of our proposed RMR package, if undertaken, can also help address the problems associated with DTS tariffs, although it will require the development of ad hoc solutions.

²⁵ See our consultation on "Creating the right environment for demand-side response", April 2013, Reference: 64/13

3.16. In our latest document of June 2013 we have taken into account the feedback from interested parties on specific supply arrangements, including the issue that the proposed cap on the number of tariffs and the standardised tariff structure could hinder the service to customers on bespoke heating metering arrangements, such as DTS and other teleswitched meters. We have also considered the concern that our general proposals on the provision of better information could lead to unclear messages to these customers if the specificity of their heating system are not appropriately reflected in supplier's communications.

3.17. Accordingly, we have proposed several rules to accommodate specific heating systems:

- Tariffs for heating systems (including DTS tariffs): we propose to define separately heating system supply arrangements and treat them separately from the five categories of metering arrangements identified for the purposes of the tariff cap.
- Exemptions: we propose to exempt the tariffs for heating systems from the tariff cap and the requirement to have only one unit rate at any point in time (but we maintain the prohibition on unit rates that vary by the level of consumption). We also propose to exempt such tariffs from our general Tariff Comparison Rate (TCR) requirements. Heating systems arrangements would still be required to comply with all of the remaining tariff rules (including in relation to discounts, bundles and reward points).
- TCR and personal projection: where a heating system supply arrangement contract requires a heating tariff to be taken in conjunction with another tariff, or the heating system tariff and another tariff operate jointly under a single contract (eg a bundled DTS tariff), we propose that suppliers will be required to calculate a single personal projection. However, we would not require a TCR to be calculated in this circumstance. A single TCR would require assumptions to be made about the consumption split. We intend, therefore, to take this issue forward with industry and other stakeholders as part of a TCR workgroup we propose to establish immediately after RMR publication. On the other hand, where such arrangements constitute supply under more than one contract, we propose that suppliers will be required to calculate a personal projection and a TCR for each contract.
- Tariff Information Labels: where a contract requires a heating tariff to be taken in conjunction with another tariff, a single TIL should be generated. This should display all applicable unit rates, and where appropriate, all associated tariff names.
- Cheapest Tariff Messaging: our general proposal means that, with the exception of prepayment meters, consumers will only be offered, in the cheapest tariff message, tariffs that their meter can support. This also applies to those consumers on heating systems supply arrangements, where heating systems are tied to a particular meter. The tariffs included in the savings calculation must be compatible with the two meters in a property. We recognise there may be some practical difficulties for some suppliers with the rules we are proposing to apply to heating systems supply arrangements. If this remains a material issue, suppliers can now apply for derogation from these rules, for our consideration.

3.18. Finally, we notice that customers on “dead” DTS tariffs will benefit from our proposed rule that suppliers must migrate a customer to their cheapest comparable evergreen tariff if the customer is on an evergreen tariff no longer open to new customers and would save money by moving to the supplier’s cheapest open evergreen tariff. This should ensure that DTS customers are not left on more expensive dead DTS tariffs, when there is a cheaper alternative that is equally compatible with their heating systems.

Next steps

3.19. The roll-out of smart meters for domestic customers, due to be completed by 2020, will enable a longer-term solution to some of the issues we identified. As indicated above, once installed, smart meters will have the potential to eliminate the barriers to entry associated with the radio teleswitching system, although changes will be required to market arrangements to enable suppliers to offer dynamic tariffs using smart meters.

3.20. In the shorter term, however, we consider that there remain issues around the levels of customer awareness of the options available to them and suppliers’ willingness to actively promote alternative tariffs to these customers. In this context, we intend to take a number of steps:

- We plan to invite larger suppliers and consumer representatives to a round table in early autumn to discuss the main findings of this report and to consider possible solutions. These include improving the information available to DTS customers and establishing plans to enable these customers to benefit from smart meters at the earliest opportunity.
- There has been little consumer research into the experience of DTS customers, as highlighted recently by Consumer Futures, though anecdotal evidence is not positive. We plan to undertake new consumer research, to better understand customers’ experiences with DTS meters and tariffs.
- We have already committed to setting up a working group to look at how the RMR information remedies such as Tariff Comparison Rates would work with time of use tariffs. We would expect this group to look at the information requirements of customers on heating tariff arrangements, including DTS.
- As part of our ongoing monitoring of the retail market we will continue to keep this segment of the market under review.

Appendices

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Appendix 1 – Features of smart meters and radio teleswitched meters

In April 2012 DECC published the first version of the smart metering equipment technical specifications (SMETS). SMETS 1 meters are being deployed by some suppliers and it is expected that there will be around 2 million SMETS 1 meters during this initial Foundation stage, ahead of the mass roll out from autumn 2015 to 2020. In January 2013 DECC published a second version of SMETS, which was signed off by the European Commission (an updated version should be published in spring 2014). SMETS 2 meters are not expected to be available for testing/trialling until 2014, but should be ready for replacing SMETS 1 meters around the start of the mass roll out. In addition to the key smart grid functionalities provided by SMETS 1 meters, SMETS 2 meters will deliver load control switches that can be used to switch on and off large loads (eg water/space heating or electric vehicles), as well as the ability to report on maximum import demand and electricity export (eg from microgenerators).

The table below compares the key features of radio teleswitched meters with those of the second generation of smart meters (known as SMETS 2), expected to be ready for the mass roll out from 2015 to 2020.

Table 7 Summary comparison of key features of RTS and SMETS 2 meters

Radio teleswitched meters	SMETS 2 meters
Switches can be inside the meter or a separate unit	Switches can be inside the meter or a separate unit
Provide some support for different behaviour by load type	Provide flexible schedules for each load (including future types)
Support on/off schedules for 24hr cycle and can manage more complex schedule (weekday/weekend, seasonal, etc.) via occasional updates	Allow flexible schedules by day, day type, month, or date to accommodate any identified tariff on a standing basis
Support daily 'dynamic' schedules, eg 'warmth'	Support 'dynamic' tariffs via daily schedule updates
Broadcast commands to groups of load/devices	Cannot broadcast. Allow/require individual commands for each load switch in each home.
Can shed load en masse in c.12s (eg 450k homes, >500MW) but this isn't really used.	Cannot support such rapid load shedding, but actual maximum throughput is TBC with CSP selection
Are bulk-managed by DNOs, notionally on behalf of suppliers, allowing management of load diversity	Are individually managed by suppliers, allowing greater flexibility but will need new coordination approach

Source: DECC

Appendix 2 - Glossary

A

Access Provider

The role of DNOs when they manage the dynamic switching schedules of DTS meters on behalf of suppliers.

C

Central Teleswitch Control Unit (CTCU)

The system used to collate and direct switching times to the British Broadcasting Corporation (BBC).

D

Data and Communications Company (DCC)

The new entity that will be created and licensed to deliver central data and communications activities for smart metering.

Direct debit

A method of payment where a fixed or variable amount is taken from a bank account each month, quarter or year.

Distribution Network Operator (DNO)

A company which operates the electricity distribution network, including all parts of the network from 132kV down to 230V in England and Wales. In Scotland 132 kV is considered to be a part of transmission rather than distribution, so their operation is not included in the DNO's activities.

Domestic Customer

A customer who uses energy for non-commercial purposes.

Dynamically Teleswitched (DTS) Meter

A teleswitched meter where the switching schedule of the heating load may vary from day to day, following the supplier's instructions, most often to take into account prevailing or forecast weather conditions.

Dynamically teleswitched (DTS) tariff

A type of tariff associated with an active DTS meter, where the supplier offering this product is the group code sponsor and controls heating load switching for this meter.

E

Economy 7/Economy 10 tariffs

Type of tariffs that have different unit rates for consumption during the day and the night and other off-peak periods. The number following Economy refers to the number of hours for which off-peak rates are available.

Energy Network Association (ENA)

The Association representing the transmission and distribution network operators for gas and electricity in the UK and Ireland.

Ex-PES

The previous Public Electricity Supplier for one of the 14 electricity regions in England, Wales and Scotland. From privatisation in 1990 until 1998 the ex-PES had a monopoly of electricity supply and distribution in their designated areas. Local distribution is still a monopoly regulated by Ofgem, however, competition has been introduced in supply, and so these 14 suppliers (consolidated now into five: EDF Energy, E.ON UK, RWE npwr, SSE and Scottish Power) are known as ex-PES suppliers.

G

Group code sponsor

A supplier (typically an ex-PES) who determines, in agreement with the DNO, the switching time for pre-established groups of meters with a special teleswitch device installed at the customer premises. Radio teleswitches with the same group code and other features respond simultaneously to the instructions sent by one group code sponsor.

I

Incumbent

See ex-PES supplier

M

[Market share](#)

The proportion of total customers (usually proxied by the number of meter points) within a market that are registered to a particular supplier.

[Market Domain Data](#)

This is the reference data used by Suppliers, Supplier Agents and DNOs in the retail electricity market.

[Meter Point Administration Number \(MPAN\)](#)

The unique number associated with the customer property. It appears on the electricity bill issued by the supplier.

[Mirror DTS tariff](#)

A type of tariff with the same structure as a DTS tariff provided by a group code sponsor supplier, but which is offered by a competing supplier. The meter switching remains under the control of the group code sponsor supplier.

R

[Radio Teleswitching System \(RTS\)](#)

The system which makes use of the BBC's long wave Radio 4 service infrastructure, in order to send signals to teleswitched meters and allow for remote load control. The system relies on a chain of messaging, rules and contractual agreements among suppliers (acting as group code sponsors), DNOs (acting as access providers), ENA and the BBC.

[Radio Teleswitch Agreement](#)

The commercial framework that allows suppliers access to the teleswitching infrastructure.

S

[Semi-Static Teleswitched \(DTS\) Meter](#)

A teleswitched meter where the switching schedule of the heating load is changed a few times a year, for example with the GMT/BST clock change.

[Smart meter](#)

A meter that provides measured gas or electricity consumption data for multiple time periods, and is able to provide the relevant supplier with remote access to such data.

Standard credit

A method of payment where the consumer receives a bill for their energy use over a number of months and pays their bill by cash, cheque or credit/debit card.

Standard Settlement Configuration (SSC)

It is a code that defines how a non-half hourly meter is configured for settlement. It defines how many registers the meter has and the times at which the registers record consumption.

Standing Charge

In respect of the supply of electricity to a customer's premises, a monetary amount that is continuously chargeable to a customer on a daily basis, in addition to charges arising on the basis of a unit rate.

Static Teleswitched (DTS) Meter

A teleswitched meter where the switching schedule is rarely, if ever changed, so the heating load is switched on/off at the same times every day.

Switching

The process of changing gas or electricity supplier, or changing to a new tariff with the same supplier.

T

Tariff Comparison Rate (TCR)

A metric that would allow consumers to compare the price of energy tariffs on a like-for-like basis using a typical consumption figure.

Tariff Information Label (TIL)

A table of key facts that would allow consumers to compare the price and non-price features of energy tariffs on a like-for-like basis.

Tariff structure

The way in which a tariff's charges are structured. For example, currently some tariffs have a single unit rate, whilst others have more than one unit rate (multi-rate).

Teleswitched Meter

A particular type of electricity meter with time of use registers that are switched remotely through messages sent via the Radio Teleswitching Service. Following instructions from suppliers, or distribution companies, messages are sent via the



The state of the market for customers with dynamically teleswitched meters

BBC's 198 kHz long wave network to a teleswitch device in the customer's meter to turn the customer's heating on and off.

Time of use tariff (ToU)

A tariff where the charges vary by the time when the energy is consumed, for example through different unit rates for energy consumption during the day and during the night.

U

Unit Rate

The actual charge made in respect of each unit of electricity consumed.