Making a positive difference
for energy consumers

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Ofgem's response to recommendations in Committee's report, Plugged-in Switched-on Charged-up: Ensuring Scotland's Energy Security

Ofgem welcomes the Committee's recommendations from this important inquiry. The Committee has asked for our response to a number of the recommendations, which we have provided below.

As ever, we are happy to engage further with the Committee if this would be helpful.

Kersti Berge
Head of Ofgem in Scotland, and
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Paragraph 100 – Transmission charging.

The Committee report says,

"Transmission charging has been going through a lengthy process of review. We note that Ofgem's reforms were welcomed by the Scottish Government but with the Minister expressing a desire to go further.

Project TransmiT began in 2008 and cleared a judicial review only last month. It is expected to commence in its revamped form from April 2016. Due to the complexities surrounding this process the Committee recognises that further reform of the regime is unlikely in the near future. However, the Committee believes there should be greater clarity when it comes to communicating the costs and benefits to customers and generators, and also explaining how the charging regime fits with other public policy aims. We would welcome Ofgem's suggestions on how this can best be achieved."

Ofgem's response

Ofgem launched Project TransmiT in September 2010, a major independent and open review of the transmission charging arrangements. The purpose of this review was to ensure that we have in place arrangements that facilitate the timely move to a low carbon energy sector whilst continuing to provide safe, secure and high quality network services at value for money to existing and future consumers. Following extensive consultation, modelling, and industry processes, we approved a new approach in July 2014. This decision was subject to a judicial review which was dismissed in July 2015. The new charging arrangements take effect from April 2016. We welcome the Committee's recommendation and have sought here to provide a clear explanation of the charging arrangements, how they fit alongside Government energy policy tools, and why we think the new approach is in the best interests of consumers. We welcome feedback from the Committee.

What are transmission charges and what do they pay for?

Transmission network use of system charges (TNUoS) charges recover the costs of the transmission owners in building and maintaining the transmission infrastructure across GB. These are the major, high voltage routes by which electricity is transported from large generators to the lower voltage distribution network where it is taken to homes and businesses. Having a sufficient secure and reliable transmission network ensures consumers benefit from a reliable electricity supply. National Grid's latest figures show that the transmission network is over 99.99% reliable.

The amounts that can be recovered by the transmission owners through TNUoS is determined by Ofgem through the price control. This ensures that the transmission owners level of spend is efficient and delivers value to consumers. The amounts recovered include the costs of building large new transmission links such as the new Caithness Moray line. We approve this expenditure through our strategic wider works process. We assess that building the link will be in the interest of consumers based on the need for the link (e.g. the amount of generation likely to connect in future) and the costs of that link. TNUoS also recovers the ongoing operational costs of running the network and smaller pieces of transmission investment. These costs are recovered using mechanisms set at the start of a price control.

Who pays them?

The total amount needed to be recovered via TNUoS is collected in part from generators and in part from suppliers. The charge is broken down into an amount that varies by location and an amount that is charged to all users on the same basis (known as the "residual"). The residual ensures that the total amount collected is equal to the costs of the

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transmission owners in that year. The way in which the charge is apportioned to an individual user is different depending on whether a user is a generator or a supplier.

Charges to generators

The total amount to be collected through TNUoS in 2015/16 is £2.6 billion. Generators are currently charged approx. 23% (£612 million) of the total amount of revenue to be recovered via TNUoS. Generators will pass this charge on through the wholesale price of electricity. Of this charge, £269 million (approx. 44%) varies by location, which is 10% of the total transmission charges. This reflects the fact that a generator locating in areas where generation outstrips demand requires more of the transmission system to transport the electricity it generates. This imposes higher costs on the transmission network than a generator located close to demand – for example, the transmission owners might have to build new transmission lines to transport electricity over the long distances and this will increase TNUoS costs in the long term. By having charges that vary by location, generators are therefore able to take their impact on the transmission network into account in their decisions about where to build new generation or close existing generation. Locational charges change from year to year based on the balance of generation and demand in an area and any new investment in that area. This reflects the changing needs of the system over time.

For example, in 2015/16 TNUoS charges for a conventional generator in Argyll are £27.70/kw and in South Wales they are £7.90/kw. Based on latest forecasts, charges for a conventional generator in those areas for 2016/17 would be £19.66/kw and £4.91/kw respectively. By comparison, the charge for a large demand user in the same areas in 2015/16 would be £26.78/kw in Argyll and £37.60/kw in South Wales. These increase to £38.67/kw in Argyll in 2016/17 and £40.67/kw in South Wales. National Grid publish details of charges across all zones on their website.

Our decision on Project TransmiT brought in changes to the transmission charging methodology for generators to reflect both the location and type of generators. The main update to the regime was to recognise that renewable generation uses the system less than traditional forms of generation and so imposes lower costs. The change will therefore more accurately reflect the costs that different generators put on the electricity network.

Overall, we have shown this locational approach to transmission charging will lead to the most efficient network in the long term as compared to a scenario where all users pay the same level of charges. For example, our modelling in Project TransmiT showed that a socialised approach where all users pay the same charge would have increased overall costs by nearly £7 billion in the period to 2020. A more efficient network will result in lower bills for consumers in the long run.

Charges to suppliers

Suppliers are currently charged 77% (£2 billion) of the total amount of revenue to be recovered via TNUoS. Suppliers will pass this on to consumers through their retail bills. Suppliers are charged TNUoS based on how much energy they use at peak times – e.g. how much household energy is being used between 4pm – 7pm. If energy consumption can be reduced at these times, then suppliers charges will be reduced. This reflects the fact that reducing demand at peak times results in less transmission capacity being required to meet peak demand in the long term. This benefits consumers because overall their costs will be lower as the transmission companies will need to invest less money in the network.

We recently published a report[1] which explains how network charges that suppliers face are passed on to consumers and how this varies across GB. This report looks at electricity transmission charges, as well as electricity distribution charges and gas transmission and distribution charges.

[1] Regional differences in network charges, October 2015, Ofgem

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How the charging system fits with other public policy aims

Transmission charging is only one element of the costs that generators and large transmission connected industrial plant take into account when making decisions about where to locate. Other important factors in decisions about location will include ability to get planning permission, costs of transporting raw materials, access to the local labour market. Other factors such as the costs of complying with environmental legislation also impact on the profitability of new generation plant.

The primary purpose of the transmission charging methodology is to recover the costs of building and operating the network. The only signal it seeks to send to generators is therefore about the costs they will impose on the network by their location. There are other market mechanisms and Government policy tools which incentivise, for example, security of supply and a generation mix consistent with the Government's environmental targets. For example, the UK Government recently introduced a number of new mechanisms into the electricity markets through its Electricity Market Reform policy. These mechanisms are designed to deliver low carbon energy to meet the UK Government's target to derive 15% of its energy consumption from renewable sources by 2020, and to deliver reliable electricity supplies.

While the transmission charging methodology is not designed to send any other signals to generators, we do consider how the methodology, and any changes proposed, interacts with these other mechanisms and therefore whether a proposed change will result in benefits to consumers. We interpret benefits widely, this includes impact on bills but also impact on factors such as security of supply and whether it would result in it being more likely that Government renewable targets would be met.

Paragraph 189 – "Regional-based criteria" for investment in capacity.

The Committee report says,

"We ask the Scottish Government to elaborate on the "regional-based criteria" for investment in capacity, as mooted by Dr Sweeney during its evidence. We would like to see the detail of how such a proposal would work and the costs anticipated - operationally and for consumers. Once more information is available the Committee would welcome Ofgem's perspective on the matter."

Ofgem's response

The UK Government put in place the Capacity Market as part of the wider Electricity Market Reform (EMR) programme to bring forward the capacity needed to ensure security of electricity supply. Ofgem has an enduring role in this scheme both as the regulator of National Grid, who administer the EMR policies, and as owner of the rulebook for the Capacity Market, which governs the technical aspects of the policy. However, the high level policy behind EMR and the design of the Capacity Market is rightly a matter for Government.

In this response we have explained the different signals sent by the Capacity Market and transmission charges, and the action that National Grid and the Scottish transmission owners have taken to assess security of supply on a regional basis.

As the Committee and the Scottish Government note, the Capacity Market's primary purpose is to ensure security of supply. Participants in the Capacity Market will take into account different costs they face as described above, including transmission charges, costs of transporting raw materials (including gas which also varies by location), access to the local labour market etc. As Scotland currently exports electricity much of the time, there

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has been a need to reinforce the network for generators and these costs have been reflected in charges. However, if Scotland requires imports more frequently in the future, the price signal could flip to incentivise generators to locate in Scotland and reduce the need for imports. For example, in the charging region that Longannet is located in, Stirlingshire and Fife, the charge for a conventional generator has dropped from £17.15/kw last year to £3.54/kw in 2016/17.

So, while transmission charges send an economic signal about the impact of generation (and demand) on the network, the Capacity Market, and the Electricity Capacity Reports look at capacity across GB as the system is operated and balanced at a GB level. At the same time, National Grid also conducts a number of localised studies such as those published in March 2015 on the security of electricity supply in Scotland, System Operability and Black Start Capability. This type of study allows it to assess the localised challenges a part of the network is likely to encounter and the services it needs to maintain the system within agreed Security and Quality Supply Standards.

National Grid, SPT and SHE-T have conducted specific analysis of security of supply without Longannet or Peterhead and concluded that there would be sufficient transmission capacity to ensure adequate supplies to Scotland[2]. The analysis did identify a need for additional voltage control support until 2017, and following a competitive tender process, they contracted with Peterhead to provide voltage control services.

National Grid are committed to conducting regional analysis with the Scottish TO's as part of their System Operability Framework, and through this process, they will be able to identify the impact of change in the energy landscape in both short-medium and long term on the whole-system stability.

The Capacity Market is designed to bring forward adequate capacity to manage security of supply for the whole of GB. National Grid also has a range of tools to balance the system, these include additional electricity balancing services that Ofgem approved until March 2018 when the Capacity Market comes into force. We are confident National Grid has the levers to manage the electricity system even in the most testing conditions. The network studies that National Grid delivers will assess the implications of the type and location of capacity on network operability and system security.

Paragraph 221 – Settlement

The Committee report says,

"The clearest and most compelling evidence on the market aspects of energy security came via the provisional findings of the Competition and Markets Authority. The Committee awaits with interest the authority's final report and decision on its proposed remedies on the adverse economic consequences that it has identified in the contracts for difference auction process. In the meantime, we are concerned by what may transpire with the introduction of smart meters without an accompanying reform of the current settlement system. The CMA suggested that a "very big prize" to be gained from DSR in terms of potential savings for consumers could instead end up going to those energy suppliers that best understand the market. We seek further views on this from the CMA itself, Ofgem and National Grid."

Ofgem's response

We agree that settlement reform is necessary to help to create the right environment for more demand-side response (DSR). The rollout of smart and advanced meters makes it possible for actual (rather than estimated) half-hourly consumption data to be used in the

[2] Security of Electricity Supply in Scotland, A paper by National Grid, SP Transmission and SHE Transmission, March 2015

settlement process. In this response we have explained the importance of the settlement process, the case for reform, the changes that have already been delivered, and the work that Ofgem is starting to make half-hourly settlement a reality for all consumers.

Why reform is important and how the rollout of smart meters supports this

Generators and suppliers buy and sell electricity in half-hourly periods. However at present, the majority of consumers are settled 'non-half hourly' using estimates of when electricity is used based on a profile of the average consumer (within a given profile class). This is because most sites do not have meters that can record consumption in each half-hour period.

Smart meters record the amount of energy consumed or exported within every half-hour period and this data can be provided to energy suppliers remotely. Energy suppliers are required to take all reasonable steps to install smart meters in every home and small business premises by 2020. This presents an opportunity to make the settlement process more accurate and timely.

We think it is in consumers' interests to be settled using their half-hourly consumption data, because it will:

- promote innovation and competition in the energy market
- help to create the right environment for more demand-side response (DSR), leading to a more efficient energy system. Half-hourly settlement (HHS) will allow suppliers to help customers move load to periods when electricity is cheapest (or export when it is beneficial to the system)
- help suppliers to forecast demand more accurately, strengthening competition and reducing costs
- make the settlement process itself faster and more efficient, reducing barriers to entry to the energy market.

Taken all together, these will help the energy market to deliver the outcomes we wish to see for consumers: lower bills, reduced environmental impacts, enhanced security of supply and a better quality of service.

However, settling all consumers on a half-hourly basis raises a number of policy questions. For example, the impact of tariffs that enable DSR – such as time-of-use (ToU) tariffs – will vary between consumers. In particular, those who consume electricity at more expensive peak periods and who are unable to significantly change their consumption patterns could end up paying more. Therefore the distributional effects of HHS will need to be examined and, where necessary, possible mitigations considered. It is also important to consider how best to support consumer engagement and understanding in a market that is more complex, for example as a result of ToU pricing. Consumer action is necessary to help make the overall system more efficient. In these areas, DECC will be involved in progressing this work.

Progress so far – mandating settlement for larger non-domestic consumers

The UK Government introduced a requirement on suppliers to roll out advanced gas and electricity meters to their larger non-domestic consumers by 6 April 2014. We approved a modification to the Balancing and Settlement Code (BSC) that requires larger non-domestic consumers to be settled using half-hourly consumption data. This applies to new contracts being agreed from 5 November 2015, and to all contracts by 1 April 2017. This change will affect an estimated 160,000 meters across GB. This factsheet explains what these changes mean for businesses and how they can take advantage of them.

At the same time, we established an expert group to examine what issues would need to be addressed so that all consumers could be moved to HHS, and published a summary of this work earlier this year.

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The next steps to deliver half-hourly settlement for all consumers

The mass rollout of smart meters to domestic and small business consumers is due to begin in summer 2016 and we are keen to make progress towards HHS becoming a reality for all consumers. The Department of Energy and Climate Change and the Competition and Markets Authority have both also shown clear interest in HHS recently.

We recently published an open letter about a programme of work that will deliver cost-effective elective HHS for domestic and small business consumers by the first half of 2017. (It is technically possible to settle any site half-hourly at present, but the current rules designed for larger non-domestic consumers may be too burdensome and expensive for small sites). Removing the barriers to elective HHS is the right first step towards achieving this ambition. It will support competition, by enabling innovative suppliers to differentiate themselves. However, we expect that we will need to mandate all suppliers to settle their customers on a half-hourly basis to realise the full benefits. Starting with elective HHS will enable us to learn about the types of products that suppliers offer in response to the new arrangements and in turn how consumers react to them. Furthermore, much of the work that will be required for a transition to mandatory HHS will be carried out in this first step, reducing the work and time required for this later transition.

We have also set out our ambition that changes to central systems and industry codes that will be needed to deliver mandatory HHS for all consumers should be in place by 2018. The UK Government have committed themselves to bringing forward proposals to give Ofgem powers to progress settlement reform more quickly than current industry processes may allow.

We will keep the Committee updated on this work as it progresses.

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