

Response to:

Targeted Charging Review

ENGIE, formerly known as GDF SUEZ, is a global energy company operating in three key sectors of power, natural gas and energy services. The company puts responsible growth at the heart of all its businesses in order to address major energy and environmental challenges: responding to the demand for energy, ensuring security of supply, combating climate change and making optimum use of resources.

ENGIE is present in 70 countries worldwide and has expertise in four key sectors: independent power generation, liquefied natural gas, renewable energy and energy efficiency services.

In the UK, ENGIE has interests in a number of activities across the energy value chain, from gas exploration and production through to services. In total, ENGIE employs approximately 17,000 people throughout the UK across all of its businesses. In generation, ENGIE is one of the country's largest independent power producers, with interests in 4,025 MW of plant. This comprises a mixed portfolio of generation assets that include gas, CHP, wind and the UK's foremost pumped storage facility. ENGIE also operates a major energy retail business supplying electricity and gas to the Industrial and Commercial sector, and is entering the domestic retail market in 2017.

ENGIE is also the UK's leading district energy company. We design, build, finance and operate district heating schemes on long term concession agreements. ENGIE's high profile district heating schemes include; the Queen Elizabeth II Olympic Park, Southampton District heating scheme, Whitehall District Heating scheme, Leicester District Heating Scheme and Birmingham District Heating Scheme.

Outside of energy, ENGIE is a leading services provider to the public and private sector in the UK, delivering a wide range of facilities management and back office services.

Thank you for the opportunity to comment on the Targeted Charging Review. Our summary view of the question raised is set out below as well as detailed answers to the questions:-

- **We support Ofgem in the scope and direction of the TCR.**
- **Our preferred approach for the methodology used to recover the residual cost of the transmissions system (TDR):**
 - **for domestic users a £/meter charge is simple and pragmatic; and**
 - **for non-domestic users a capacity charge moderated by a user specific diversity factor or time related variable.**
- **Changes to storage arrangements should sit outside of the TCR, be proposed National Grid and/or industry and should include:**
 - **storage being exempt from the demand residual charge**
 - **storage to be exempt from BSUoS on its imports and exports to maximise the system benefits from this class of user.**

Q	Question	Response
1	Do you agree that the potential for residual charges to fall increasingly on groups of consumers who are less able to take action than others who are connected to the system, is something we should address?	<p>The TDR charge is the residual cost of the transmission system with elements that cannot be influenced by demand or generation actions. Generating or not generating, taking or reducing demand has no effect on the total size of the residual charge that needs to be collected from users.</p> <p>The methodology used to collect this charge should be designed to ensure that all users pay an appropriate share of the residual cost. The residual charge should not be capable of being avoided and no more should be recovered than is required to meet the actual cost.</p> <p>We believe that the current methodology does not reflect these principles as such the issue needs to be addressed.</p>
2	If so, why do you think, or do not think, action is needed?	<p>Action is required as the TDR charge is based on either Triad values for half hourly customers or a "MWh" based for non-half hourly customers. Both of these methodologies allow users to reduce their own specific charge. This increases the cost borne by others but with no effect on the total cost. All users of the system should pay an appropriate share of the sunk or TDR costs. This is likely to reflect the capacity that has been installed for the user or collection of users at a transmission level.</p>

Q	Question	Response
3	We are proposing to look at residual charges in a Significant Code Review. Are there any elements of residual charges that you think should be addressed more urgently? Please say why.	CMP 264/5 will move to a supplier gross charging arrangement and we believe that it is important to implement this in as early a time frame as is possible.

4	<p>Are there elements of the approaches in other countries that you think could be appropriate for GB residual charges?</p>	<p>We have considered the alternatives presented and these have confirmed our view that residual charging should principally be capacity basis with a degree of a diversity where usage is mutually exclusive. The “simple capacity” element is being developed in many of the example markets whilst we support this approach we believe that monthly granularity with potentially a diversity effect will give a more robust and fair charge for customers.</p> <p>Key issues:</p> <ul style="list-style-type: none"> • The challenge is how to apply these charges to the two charging groups (non-half hourly (NHH) and half hourly (HH) in a fair and transparent manner. There are around 28 million mainly domestic NHH meters, 2m light commercial/industrial NHH meters and less than 100k HH meters associated with higher demand customers. A charging methodology should be mindful of the need to implement it in a simple and effective way that can be readily explained to all consumers. Even with the wholesale introduction of HH meters, a £/meter charge may be the best approach for the 28m domestic meters. • We believe that it is not practical to look behind the settlement meter and if this was a policy need then the only solution would be to mandate additional settlement meters that could measure this class of generation in settlements. Our experience with P354 has shown that establishing output to the same quality standards as the current settlement system based on “user own metering” will be at best challenging to achieve. • The fixed charge per meter based on import capability (fuse size) has merit although there is concern that for larger customers this may not be simple to establish and for non-half hourly customers a diversity factor will already be built into the £/meter charge. The majority of domestic supplies are rated at 100 amps (~23 kW) in reality because of the diversity effect the peak load of individual consumers is significantly below this level with average Triad demand per NHH meter around 1.2 kW. Typical maximum NHH demand levels may reach up to 6 kW with economy seven users significantly above this range. The implicit diversity factor for NHH meters is taken account in the load shape used by the SSA to determine the consumption of a typical meter based on annual kWh consumption. • If a per meter charge was applied to half hourly non-domestic meters we believe that some level of diversity adjustment would be required to take account of the ability of users to share capacity with others. Baseload customers cannot share capacity and there are only limited opportunities for sharing capacity with uses that take high demand during peak periods. Customers that take high demand overnight e.g. economy 7 users, can share their capacity with peak users and we believe a capacity methodology should reflect this sharing capability. The challenge is to make sure this is not capable of being a benefit and charges customers a fair share of the capacity used based on their individual load shapes relative to the average.
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Q	Question	Response
5	<p>Are there other approaches that you know about from other jurisdictions, that you think offer relevant lessons for GB?</p>	<p>We believe that the approach used to calculate short term generation charges (LDTEC and STTEC) is worthy of consideration. This has been used for many years for transmission connected generation who access the system on a non-firm basis and is designed to ensure that a user who uses the system on a non-firm basis pay an appropriate share of the cost i.e. 120 days of use pays 90 % of the annual charge. The method used to charge LDTEC is effectively to measure a user's daily maximum capacity over a 12 month period. Then the average capacity used over the highest 120 days is set to collect 90% of the annual payment. The advantage of this method is that it brings in diversity. A user who uses the system for two months in a year will pay around 50% of the annual base load charge and this will allow other users to use the system for a different two month time period to also pay a similar charge. The charge cannot be avoided by users who use the system and it does allow all users who use the system on a non-firm basis to pay an appropriate share of the cost.</p> <p>To charge a user who only uses the system for two months the full 100% of the charge would effectively over recover from this class of user relative to other users.</p> <p>This was progressed through the CUSC charging change in 2005 (see link)</p> <p>GB ECM 03</p>
6	<p>Do you agree that our proposed principles for assessing options for residual charges are the right ones? Please suggest any specific changes, or new principles that you think should apply</p>	<p>We support the proposed principles of</p> <ul style="list-style-type: none"> • Reducing distortions; • Fairness; and • Proportionality and practical considerations. <p>The ability to “share capacity” systematically by time of day should be included in the consideration of the definition of capacity. This done implicitly in the calculation of the load shape for the various metering classes by the SSA at present.</p>

Q	Question	Response
7	<p>In future, which of these parties should pay the transmission residual charges: generators (transmission- or distribution-connected), storage (transmission- or distribution-connected), and demand, and why? What proportion of these charges should be recovered from each type of user?</p>	<p>Since the residual charge is just about cost recovery, in general we believe that only the ultimate customer gross demand that is supplied by a supplier should pay the residual charge and this should be charged in such a way that ensures that customers with similar capacity needs pay similar charges and the charge cannot become a benefit for transmission, embedded or behind the meter generations of any type.</p> <p>Storage should be exempt from demand charges. This could be achieved through the creation of a storage licence and the exemption of storage from supplier levies.</p>
8	<p>In future, which of these parties should pay the distribution residual charges: generators (transmission- or distribution-connected.), storage (transmission- or distribution-connected), and demand, and why? What proportion of these charges should be recovered from each type of user?</p>	<p>Since the residual charge is just about cost recovery, in general we believe that only the ultimate customer gross demand that is supplied by a supplier should pay the residual charge and this should be charged in such a way that ensures that customers with similar capacity needs pay similar charges and the charge cannot become a benefit for transmission, embedded or onsite generations of any type.</p> <p>Storage should be exempt from demand charges. This could be achieved through the creation of a storage licence and the exemption of storage from supplier levies.</p>

9	<p>Do you support any of the five options we have set out for residual charges below, and why?</p>	<p><u>Option A: a charge linked to net (kWh) consumption</u></p> <p>We do not support a kWh charge as this allows low load factor customers and customers with behind the meter generation to pay a reduced share of the charge despite potentially using significant capacity in higher demand periods therefore benefiting from the size of the peak system. It also unduly penalises economy 7 customers and other off peak users that share capacity at different times with others.</p> <p><u>Option B: a fixed price charge</u></p> <p>This is similar to the £/meter charge by connection capacity. We do not support a single fixed charge across all users groups and believe that some element of diversity will need to be incorporated to reflect level of capacity used by time of day (not MWh) as well as higher charges for consumers who have higher maximum demands.</p> <p>As a fundamental principle two users whose use the system in a mutually exclusive way should only pay a single capacity charge e.g. user A uses the system from midnight to 12 am and user B then uses the system 12 am to 12 pm. If a fixed charge was applied both would face the same charge. If a diversity factor methodology was implemented a single charge would be paid with the user using the system off peak paying a smaller share of the charge compared to the peak user.</p> <p><u>Option C: fixed charges set by connected capacity</u></p> <p>We believe that this option has merits and should be developed further. Domestic meters (currently classes 1 and 2) could be easily accommodated and it is seen as a practical way to level a charge on this group of customers.</p> <p>If this was used as a methodology for domestic customers some modifications would be needed to accommodate half hourly/ larger customers and a more complex (although achievable) solution would be required with explicit diversity factors for each customer taking account of the time of use of the capacity. This is effectively a load duration diversity factor based on the maximum demand in each individual period in for example a month. A customer whose use matched the average load shape for this group would be allocated a diversity factor of 1 and would pay based on their own monthly maximum demand irrespective of where it occurs in the month. Customers that run base load would have a diversity higher factor. This factor (which could for example be up to 1.25 x average) represents their sole use of capacity for this customer. Customers that had higher loads overnight that but lower peak demands would have a lower diversity factor (down to for example 90 %) and this represents the potential to share the use of capacity and the associated residual charge with other customers.</p> <p>Monthly diversity factors for HH customers in combination with monthly maximum demand by period would be worth consideration alongside other methodologies. It does not seem to be possible to benefit behind the meter generation as it is based on a monthly maximum but does take account of the</p>
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Q	Question	Response
		<p>shape of use compared to the average load shape the ability to share capacity with other customers on a systematic basis. The average diversity factor would be 1 representing average load shape. This option is based on the maximum demand in each period in the month i.e. the March 15:00 demand would consider each day in March and return the highest demand in the month during that period. This would ensure that solar and wind are unlikely to effect the resulting diversity factor unless they were present in significant quantities on every day of the month.</p> <p><u>Option D: gross kWh consumption</u></p> <p>We believe that it is not practical to look behind the settlement meter and if this was a policy need then the solution would be to mandate additional settlement meters that could be used to net generation from the main importing meter. Our experience with P354 has shown that establishing output to the same quality standards as the current settlement system based on “user own metering” will be impossible to achieve in many circumstances.</p> <p><u>Option E: hybrid approach low usage domestic consumers pay on net volumetric consumption, others pay fixed charges based on capacity</u></p> <p>We do not support the hybrid approach as it allows domestic consumers with own generation to avoid paying a fair share of the charge and similar unduly penalises economy 7 users who consume energy at times where there diversity in consumption reduces the overall size of the system and the ultimate residual cost.</p> <p>We do however support a hybrid of a £/meter for domestic combined with a capacity based charge for others.</p>

Q	Question	Response
10	Are there other options for residual charges that you think we should consider, and why?	<p>We believe that there is a need for a diversity element within the TDR capacity mechanism that takes account of the time users use the capacity relative to other users. This mechanism would allow two users to effectively share the charge as long as they don't use it at the same time. The methods described do not allow "netting" to take place but do reflect a diversity element which is the basis of the domestic £/meter charge. For non-domestic hh users it could be developed in several ways two examples are shown below.</p> <ul style="list-style-type: none"> • LDTEC (Generation charging methodology) type approach should be considered (Q 5) this is a simple, daily capacity based charge where 90% of the capacity based charge is paid over the first 120 days irrespective of time or day of use. • The calculation of capacity should take account of load diversity and the ability to share capacity by time of day. Monthly maximum demand by period with diversity factor (Q9 option C) is one solution to this. This option is based on the maximum demand in each period in the month i.e. the March 15:00 demand would consider each day in March and return the highest demand in the month during that period. This would ensure that solar, wind and other forms of intermittent/occasional generation are unlikely to effect the resulting diversity factor unless they were present on every day of the month. Customers whose use matches the average load shape will have a calculated diversity factor of 1.0 and would pay based on their own monthly maximum demand irrespective of where it occurs in the month. Customers that run base load would have a diversity higher factor. For base load the factor would be 1.24% x average with 0.55% representing midnight to 12am demand and 0.69 % post 12 am demand. The 1.24 % factor is the demand weighting factor for base load compared to average January demand and this represents their sole use of capacity. Customers that had lower daytime loads and higher loads overnight would have a lower diversity factor (down typically to 80 %) and this represents the potential to share the use of capacity and the associated residual charge with other customers. The average diversity factor would be 1 representing average load shape.
11	Are there any options that you think we should rule out now? Please say why.	Yes we believe that behind the meter gross MWh is not achievable based on current metering.

Q	Question	Response
12	Do you think we should do further work to analyse the potential effects of the charging arrangements for smaller EG (called 'embedded benefits')?	We note these and benefits will need to be reviewed at an appropriate point in time but believe the review may need to be wider than the individual benefits. BSUoS for example has several element some relate to market access arrangements (e.g. transmission constraints) and others relate system services that all parties benefit from. It will be important as part of any review to consider how these elements effect different classes of users and charging bases.
13	Do you think changes are needed to the current charging arrangements for smaller EG, and when should any such changes be implemented?	See answer to Q12
14	Of the embedded benefits listed in our table, do you think that any should be a higher or lower priority?	See answer to Q12
15	Do you think there are other aspects of transmission or distribution network charging which put smaller EG, or any other forms of generation or demand, at a material disadvantage?	No with the exception of the issues raised in P344 and P354 (difficulty of metering behind the meter generation) that relate to market access we do not believe there are any other issue not consulted on to be addressed.
16	Do you agree with our view that storage should not pay the current demand residual charge, at either transmission or distribution level?	<p>Storage provision is largely transmission connected and takes little or no demand over the peak periods where demand charges are allocated. Despite demand paying for the vast majority of network costs, the network charging arrangements whereby storage pays network charges on both its generation and demand are currently rarely an issue for storage. The growth in embedded storage which may be consuming at peak periods couple with potential changes to how these costs are allocated (via this TCR) may necessitate change to ensure the continued viability of existing storage and investment in new storage.</p> <p>Whether or not change is necessary and also the type of change does depend on the outcome of this SCR. In principle, ENGIE agrees with Ofgem that storage should not pay demand residual charges at either the transmission or distribution level and would continue to pay forward looking charges for both generation and demand at the transmission level for transmission connected storage and the distribution level for distribution connected storage.</p>

Q	Question	Response
17	Do you agree with our view that storage should not pay BSUoS on both demand and generation?	<p>ENGIE highlighted in its response to the flexibility call for evidence the disproportionate impact that the BSUoS charges have on transmission connected storage versus other sources of flexible generation. Taking account of pumping efficiency, BSUoS charges can add up to £16/MWh to generation costs and this is without considering that the 'fuel cost' overnight may well have a high BSUoS element. The current BSUoS methodology does not maximise the system benefits of storage and results in inefficient operation. ENGIE therefore welcomes Ofgem's invitation to propose rule changes to address this and is currently developing solutions.</p>
18	Which of the BSUoS approaches describe is more likely to achieve a level playing field for storage?	<p>Storage currently pays an implicit BSUoS cost on the power it imports (as this is part of the cost of the MWh it buys), then pays BSUoS on its imports and also pays it on its exports.</p> <p>Storage is not like generation or demand in that it 'time shifts' energy. ENGIE therefore believe that charging BSUoS on either exports or imports particularly given storage pays an implicit BSUoS import cost anyway when it purchases energy is not appropriate.</p> <p>We believe that the full system benefit of storage will only be realised if BSUoS is removed from both the imports and exports of this class of user. With this, peak energy prices when storage is exporting and at the margin will be lower</p> <p>If the net consumption model as suggested by Ofgem is chosen then at a high level this could be achieved by establish the efficiency of storage and applying BSUoS charges on $(1 - \text{efficiency} \%) * \text{imports}$. If Ofgem did review the application of BSUoS then this model may need to be reconsidered – particularly if BSUoS was only charged to demand.</p>
19	Do you think the changes in this chapter should be made ahead of any wider changes to residual charging that may happen in future? Do you agree with our view that these changes should be implemented by industry through the standard code change process?	<p>We believe that the changes as to how BSUoS charges are applied to storage could be made ahead of the wider review and we would look to propose changes either directly or in response to any National Grid proposal.</p> <p>Reform to the application of the demand residual charge is less of a pressing issue for ENGIE as our storage assets do not consume over the period when the demand residual charge is levied. Changes may be needed once there is more clarity on how demand residual charges will be levied in the future. This could either be through a standalone process or incorporated into the SCR and subsequent modifications.</p>

Q	Question	Response
20	We would welcome your thoughts on the potential make-up of a CCG. Please refer to the potential role, structure, prioritisation criteria and assessment criteria.	The makeup of the Charging Co-ordination Group will need to be carefully thought through by Ofgem to ensure that it can deliver effective change in areas that are likely to be highly controversial across the industry. We believe that the group's members should be drawn from the industry associations as well as from Elexon and the various working groups based on recommendations from previous CUSC/BSC working group chairs. A technical sub-group will be important to look at the detailed technical issue associated with these proposal and the ability to practically deliver them.
21	Do you agree with our proposed delivery model, including its scope?	Yes
22	Do you agree that our proposed SCR process is most appropriate for taking forward the residual charging and other arrangements for smaller EG discussed in this document?	With no obvious solutions, ENGIE supports the use of the SCR process to develop changes to the residual charging arrangements.

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