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Access SCR: TNUoS updates

July 2020

Session Purpose

This session on TNUoS is to update you on the work we've done since the last Challenge Group, and to tell you how we plan to model TNUoS in this SCR – it will be similar to our previous sessions on DUoS/Connection Charging.

Since the last TNUoS update, we have asked ESO to model tariffs under a number of scenarios, some of which will be fed into the CEPA IA Modelling.

If you are attending this afternoon's IA session you will hear more about our approach, and CEPA's.

For this session, if you have specific views on our approach to TNUoS modelling, you will have the opportunity to respond to our Menti questions.

Time permitting, at the end of the session, we will answer any questions you have posted on Menti (sorted by the highest number of votes)

Demand TNUoS

In our March 2020 shortlisting letter, we confirmed that we would look at the following charging options for demand TNUoS:

1. **Time of Use charging** – where the TNUoS prices, and the times at which they will apply are known in advance;
2. **Agreed Capacity charging*** – where TNUoS is levied on the basis of the MIC agreed with the DNO;
3. **Improved triad*** – where users face known TNUoS charges over variable periods

For the purposes of modelling tariffs, we have further refined these options through both qualitative assessment, and broader discussions with the ESO, and will receive zonal locational tariffs illustrating:

1. **Time of Use** for all demand based on **4-7pm** consumption, with a **seasonal** summer/winter split;
2. **Time of Use** for small users based on **4-7pm** consumption, with a **triad** approach for large users, both with a **seasonal** split

Agreed Capacity charging has not been modelled as in practice to levy charges on such a basis would require changes to the Transport Model – this is out of scope of this SCR, and is explained in more detail later

* Large users only

Demand TNUoS – Why 4-7pm?

For the purposes of modelling, we have determined that **4-7pm only** is an appropriate approach to ToU

Maintenance of equal and opposite signals:

- TNUoS charges are calculated using a capacity-based model – the output, before the ESO constructs tariffs is a **£/kW charge for a generator or demand consumer** connecting at a particular point;
- Generation charges are levied based on **Transmission Entry Capacity**^;
- To maintain an 'equal and opposite signal' for demand and generation at the same point, a **proxy** for Transmission Demand Capacity is needed;
- For the majority of consumers, the **4-7pm period** is that at which they will **use the most power**, serving as a reasonable proxy for transmission capacity, to ensure **consistency of signals**

The transport model does not consider different demand profiles:

- There are two scenarios in the model used to create the initial £/kW charge, but in both, those **charges are derived** based on the assets used by different technology types to meet the same level and location of **demand**;
- Changing the demand levels and locations in the Transport Model are **not in scope** of the SCR;
- Without a **network-related basis** to differentiate charges (i.e., "at peak, demand will use this asset which costs £x, but during baseload it only uses this asset which costs £y"), the **apportionment** of a £/kW TNUoS charge **against RAG-style timebands** would be somewhat **arbitrary**;
- It should be noted that the FL-only element of Demand TNUoS is (for small users) minimal, and that widespread **peak shifting** to 'shoulder periods' is not anticipated

^Except in zones where the tariff is negative

Why no Agreed Capacity option?

Agreed capacity charging would likely require Transport Model changes

In practice, Agreed Capacity charging requires ESO to know, and model, all Agreed Capacities:

- Our ToU and improved triad options **retain a charging approach for demand that is a reasonable proxy for capacity** – the Agreed Capacity is based on the capacity booked at distribution, whereas our ToU and new triad options are proxies for capacities on the transmission network, but give users the ability to reduce their costs if they can respond to the pricing signals
- In practice, the **aggregate Agreed Capacities** behind a GSP (plus the kW demand of smaller sites) could **exceed the capacity of that GSP**, which means that some scaling would be required in the transport model to be able to accurately derive the incremental cost of a DNO-based Agreed Capacity;
- Scaling is currently only used in relation to **generation,** and the 'factors' that apply to different technology types are captured in the Transmission network standards (SQSS);
- Creating the demand equivalent, and changing the transport model to accommodate the **demand scaling factors** may well be unachievable in current timescales, and aren't in scope of this SCR;

Seasonality

We have asked ESO to consider a Summer/Winter split in TNUoS for demand

Although the transport model does not look at when demand is taken, there is a case to say that a winter-only approach to triad no longer reflects system peaks:

- We have previously seen **system peaks outside of the triad window** (Nov-Feb) – only NHH demand paid against these times;
- The **difference** between winter and summer demand is **flattening**, but the current triad mechanism only considers winter;
- It is possible that a site's summer peak is higher than its winter – this means that they are not paying TNUoS against their capacity, so the **equal/opposite TNUoS signal is diluted**

Do you have any comments on our approach to demand TNUoS CEPA modelling for the IA?

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I am not clear what costs you see against a summer Triad -- it would be good to have these explained

Is the signal expected to be similar to existing triad?

If there is a summer Triad, will there still be three periods in the winter and three periods in the summer ?

Why 4-7pm is assumed as appropriate for summer peak if consumption and weather patterns in summer are different than winter?

Short sighted to assume not much demand shifting. There certainly won't be if the signals are not there!

Why aren't you considering peak and year round charging for demand?This would be a more sensible approach

please use a different phrase - "summer" for "March to October" is unhelpful

This assumes there will be no small user load shifting, tying us into a static network rather than dynamic

What would be the alternative to DNO agreed capacities if a capacity approach was to be used?

Do you have any comments on our approach to demand TNUoS CEPA modelling for the IA?

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Summer solar output should be charged

how would the summer demand levels be determined winter is ACS there is no summer equivalents

We need to revisit the locational model. It will currently be zeroed in many regions due to the TCR changes. It looks like we're moving from a world of some signals to a world of none.

true that the equal/opposite signal is diluted when "summer" consumption is higher than Nov-Feb but are we really comparing like for like? A transmission connected generator has TEC - fairest comparison is Demand Capacity

How will suppliers pass these 4 to 7 charges on with/without HH settlement?

Surely the inequality of those able to invest and avoid charges remains here -

If my peak demand is at 0300 in the morning, aren't I jsut using spare network capacity. Does this mean that pumped storage should face a charge for pumping overnight?

Totally agree that 1MW of SDG has the same effect on the Transmission network as 1MW of directly connected TG, kirchoff's laws do not respect transformers or voltage levels, it's basic physics

Has ESO modelling shown what the impact will be on existing charged customers?

Do you have any comments on our approach to demand TNUoS CEPA modelling for the IA?

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If seasonal, need to consider weather based EG

I'm not clear on whether a locational split is envisaged. Demand in locations of high generation would reduce network flows, if the generation is working during the peak periods. Do you plan to include this in the charging regime ?

Yes, 1MW of SDG has EXACTLY the same effect on the Transmission network as 1MW of directly connected TG; kirchoff's law applies across different voltage levels whole network - transformers and ownership aren't special nor is voltage !!

Will solar generation connected at distribution benefit from summer triad?

Why is the reference node not in the CEPA TNEI modelling?

SDG should also pay local circuit charges where relevant eg. you shouldn't dodge £80/kW on a Scottish island just by connecting at a lower voltage !

Feels a long way from future-proof. Isn't this SCR supposed to be about creating charges which send signals to influence behaviour? All any of these potential charges being modelled will only send any signal for three hours a day.

The generation weighted reference node would represent a good reform. Important as sustainable (CMP327 won't be long term) and enhances EU generation competition so please prioritise

if SDG has to pay the same as TG connected generation, will they be reimbursed for the additional connection costs they paid versus TG generators? further, will SDG get the same rights to participate in black start, BM and other revenues?

Do you have any comments on our approach to demand TNUoS CEPA modelling for the IA?

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I agree with Ofgem and respondees that the choice of approach to ref node affects the absolute but not relative signals between users - differentials would NOT change

There is already an arbitrary breakpoint below which DG doesn't pay gen TNUOS, that's 100 MW and it's far too high !! (and is distortive). 1 MW makes far more sense

You are right to keep the transport model out of scope. For goodness' sake, SOMETHING has to be stable.

North South differentials inherent in TNUOS tariffs are not a problem in that they are cost-reflective. The floor in scotland on TNUoS to embedded generators is a distortion and can go

The floor in scotland on locational TNUoS to embedded generators as negative demand is a distortion and can go once SDG > 1 MW is paying gen TNUoS, right ?

We have asked ESO to provide us with tariffs reflecting >1MW SDG paying the Wider element of TNUoS

We are planning, for the purposes of modelling, to assess treating >1MW SDG in the same way as TG:

- The SQSS no longer treats embedded generation as inverse demand – demand **imports are no longer net of EG flows**;
- **In principle**, 1MW of SDG could have **the same effect** on the Transmission network as 1MW of directly-connected TG – we are undertaking analysis with the ESO to understand whether this is the case;
- The threshold of **1MW is a well-established limit in both markets and networks** – it is currently the threshold at which the **DNO must notify the ESO** of a connection (outside of Statement of Works), and it is also the minimum capacity at which a **generator can gain access to the ESO's markets** (BM/Ancillary Services);
- Separately, there is further work to do on **how any liability would be established** and the mechanics of **how charges would be levied**, if we did decide that SDG should pay either the TNUoS charge itself, or an equivalent

We received a lot of feedback following our reference node webinar

Key points from stakeholders:

- More work is needed on the node owing to its complexity – there is a risk that smaller participants are unable to engage with this topic;
- The choice of node affects the absolute but not relative signals between users and therefore we should look at how much revenue should be collected from Generation vs. Demand;
- Changing to a Generation-Weighted approach may support competition with European generators and could, in some circumstances better reflect system conditions/the NOA;

Our current thinking:

- We have had to prioritise work across the SCR due to the Coronavirus – to date, the reference node approach has not been a key focus of our activities;
- However, following **your responses** to our webinar/request for evidence, we asked ESO to provide tariffs, including the "**Offset approach** " where adding 1MW of Generation to a Node in the Transport Model **displaces** 1MW of Generation at other Nodes, as this option was raised by several stakeholders as being a valid change to make;
- Whilst we **do not** currently plan to feed these into the CEPA IA modelling, we do think there is some **further work** to do on the reference node approach **in light of the feedback** we have received, and so will conduct some **standalone analysis** as part of the SCR – details will be shared with industry as soon as is reasonably practicable

Do you have any comments on our approach to SDG and reference node CEPA modelling for the IA?

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slide #8 incorrect - choice of Ref Node does affect relative signals

Reference node changes will invalidate all numbers from IA: MUST be considered holistically!

If SQSS doesn't treat Gen and Demand as equal and opposite, why does the charging model continue to do so? Presumably the network isn't homogenous?

Is it correct to assume that if SDG paid wider TNUoS then the current Embedded Export Tariffs etc. would fall away completely?

Would the standalone reference node analysis look at the issue wholistically, taking into account SCR changes to TNUoS as well?

Any changes to the reference node would require a significant implementation time. So, reference node development must be kept completely separate to CMP317/327 where changes and implementation dates are well understood by the market.

The RN is pivotal to an enduring TNUoS regime. This has been demonstrated by third party independents and Ofgem have seen this. Lack of focus here is inexcusable and suggests decisions made without due consideration of evidence. Not impressed!

If timelines are preventing fully considered decision making, Ofgem can delay SCR

If all SDG>1MW are to pay TNUoS does this imply they will be part of the BM and have TEC?

Do you have any comments on our approach to SDG and reference node CEPA modelling for the IA?

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This strikes me as another barrier to dg when net zero requires lots of dg flexibility.

Like to see whether charges are going to be equivalent across tg and sdg.

If a standalone assessment on the RN is carried out would the timescales differ from the core CEPA IA? Needs further alignment across the piece

Can corona be an excuse? What has staff absence been in this team due to corona? Seems like an excuse rather than a reason

SDG paying TNUoS will have a significant impact on investment decisions on location of new plant between areas where wider tariff is positive/negative. DG (esp. solar) hasn't been exposed to this. How to give confidence e.g. boundaries won't move?

Ofgem - you need to think bigger picture than this. I am disappointed. Net zero, for example. The Decarb Action Plan is becoming more lip service than strategy every time we hear from you

SGD face different Network charges (DUOS) so potential for conflicting signals

Will SDG be compensated for being off supply due to transmission events?

Reference node changes must be economically justified on their own merits - it is not a tool to deliver that a particular desired outcome. You get the approach to the reference node right and then the outcome follows.

Do you have any comments on our approach to SDG and reference node CEPA modelling for the IA?

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How will TNUoS be levied on SDG?

What size of charge are we looking at - is this just gen forward looking?

What will happen to AGIC? EG have instrinsic value to transmission network

Continued mis-match in security of connection - transmission connected can be paid to be bid off, will DG have direct access to this i.e. financially firm connections/direct BM access if it now has to pay for it?

SDG paying based on what? Equivalent of TEC? So no operational signal, only investment signal? Hard to expect investment signals on network charging for SDG to be meaningful given the recent history of SDG consistently bearing the brunt of changes.

Adding TNUoS signal to SDG will push new sites to locate where TNUoS wider tariffs negative. That may start to overlap with areas (esp for solar) where DG is causing net exporting distribution network - and hence high DUoS for generators. Conflicting

SDG paying TNUoS wider tariffs makes wind in Scotland unaffordable. Need to take advantage of best wind resource to hit Net Zero at least overall cost. Doubt IA modelling on e.g. extra CfD costs will get load factor variation right. Model more wires?

Ask me anything

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46 questions
123 upvotes