Scottish & Southern Electricity Networks

TRANSMISSION

www.ssen-transmission.co.uk

# Transmission Charging Stakeholder feedback report May 2021

SSEN Transmission

## About us

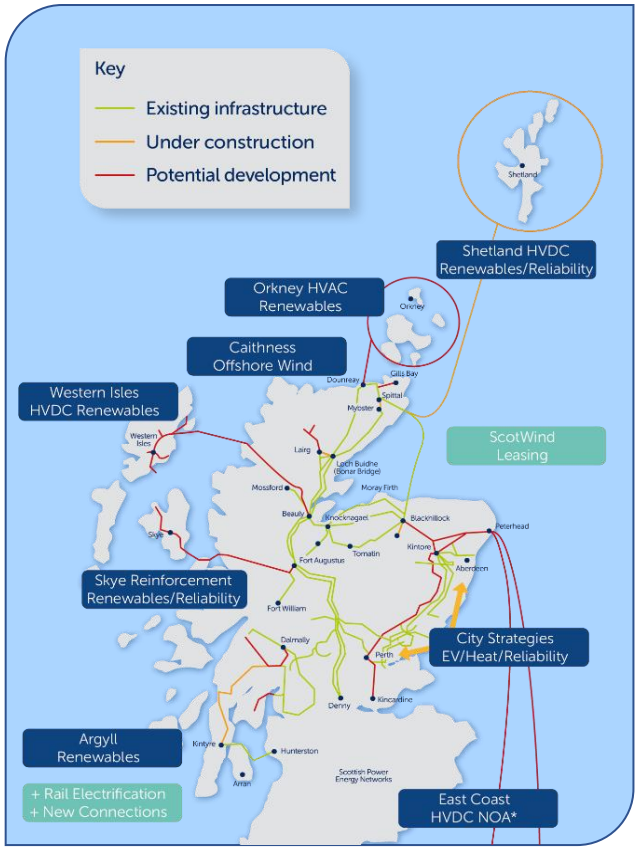
We are SSEN Transmission, part of the SSE Group, responsible for the electricity transmission network in the north of Scotland.

As the Transmission Owner (TO) we maintain and invest in the high voltage 132kV, 220kV, 275kV and 400kV electricity transmission network in the north of Scotland and the Scottish Islands.

Our focus is to deliver a network for net zero; facilitating Scotland and the UK's transition to a green, low carbon economy. Our network consists of underground and subsea cables, overhead lines on wooden poles and steel towers, and electricity substations, extending over a quarter of the UK's land mass crossing some of its most challenging terrain.

We power our communities by providing a safe and reliable supply of electricity. We do this by taking the electricity from generators and transporting it at high voltages over long distances through our transmission network for onwards distribution to homes and businesses in villages, towns and cities.

**Find out more:** www.ssen-transmission.co.uk




## Introduction.

This report will detail a consolidated view of our engagement we have had to date with direct and broader industry stakeholders on Transmission Network Use of System (TNUoS) charges. Throughout, it clearly highlights the key themes to the feedback that we have received, through the different engagement activities that we have undertaken. With the aim of broadening the conversation on TNUoS, our engagement on this issue ensures that our recommendations on reform, represent the views of industry and the interests of our stakeholders.

Since publishing our Transmission Charges paper[1] in February this year, which posed the question 'Is TNUoS the biggest barrier to Net Zero', we received an excellent response and gained valuable input from a broad variety of stakeholders.

In March, alongside Scottish Renewables we held an interactive webinar[2]. Within this report we present the main areas of feedback we received and what potential reform options have been suggested by stakeholders. Following the webinar, we circulated a short survey to those who registered their interest in the event, you can find a summary of the feedback received through the webinar and the survey detailed in this report, alongside the questions and answers from the webinar in appendix 1.

### How to get in touch.

We welcome any comments and feedback on this report. If you would like to get in touch with the team to ask questions, and provide feedback and comments then please use the following contact methods:

David Boyland, Commercial Policy Manager
Email: david.boyland@sse.com
Post: David Boyland,
SSEN, Inveralmond House,
200 Dunkeld Road, Perth, PH1 3AQ

For further updates on our business including events and announcements you can register to join our mailing list by emailing transmission.stakeholder.engagement@sse.com

[1] SSEN Transmission, Transmission Charges paper
[2] SSEN Transmission, Transmission Charges Webinar Recording

## Engagement process

- After gaining initial informal feedback from generation stakeholders, we decided to further explore the negative effects and unintended consequences of the high costs, volatility and unpredictability of TNUoS.
- By publishing our Transmission Charges paper, we were eager to capture further views from across industry on the current charging methodology, how it affects our customers, whether our stakeholders supported our opposed reform and what potential solutions could be.
- Throughout our engagement, we aimed and remain committed to, capturing feedback from a wide demographic of stakeholders, ensuring that we received a holistic view which considered how TNUoS affects different parties.
- Our engagement activities included; speaking at industry events, partnering with Scottish Renewables to seek their members views, publishing our Transmission Charges paper, responding to written correspondence, bilateral meetings, holding an interactive webinar and circulation of a short survey which provided stakeholders a further opportunity to engage with us.
- In summary we have engaged with a broad variety of stakeholder groups to date, including other network owners, developers of varying technologies, local authorities, economic development agencies, government, BEIS, Ofgem, the ESO and Academia.
- We plan to continue this engagement to shape and inform our position on reform and our next steps.


### Stakeholder Participation

We received an overwhelmingly positive response to our Transmission Charges paper with many stakeholders contacting us directly

12 written responses.

24 bilateral conversations with key stakeholders and decision makers.

Our Webinar attracted 186 people who registered their interest in the event, 123 people attended, and 97 people participated through SLIDO.

12 Survey Responses.

**93%***

Of all stakeholders told us that they believe that TNUoS reform is required.

**70%***

Of all stakeholders who read our Transmission Charges paper agreed with our findings.

**84%***

Of all stakeholders told us that TNUoS presents a barrier to the delivery of future projects.

**Based on all feedback received.*

### Top 5 Stakeholder Reform Options

1. TNUoS charging should not be locational. Consider implementing postage stamp methodology.
2. Cap TNUoS at zero with the removal of all negative charges.
3. Reform must include improving the certainty of TNUoS.
4. A full fundamental review of TNUoS is required.
5. Changes need to be made to the Connection and Use of System Code (CUSC) to consider decarbonisation.

# Your feedback

Following the publication of our paper we received written responses from a wide demographic of stakeholders including renewable developers, the Electricity System Operator (ESO), consultant's, academia, community groups and local authorities. All written responses received so far to date have supported our position and are in favour of reform. All responses we have received will play a pivotal role in forming our final recommendations.

## Written Responses

Academia highlighted Transmission charging has posed challenges for many years and discussed opportunities for academic course work to further analyse and study reform solutions of grid charging.

We received written correspondence from two Consultants welcoming our paper, broadly supporting our findings and conclusions. In particular around the lack of long-term clarity to support investment decisions, the scale of the disparity between generators, lack of incentive in the CUSC to decarbonise generation and volatility between the predicted five year forecast and actual costs. It was also highlighted that current charging poses a risk to those competing in the next ScotWind leasing round.

We spoke to many large and small-scale Renewable Developers, who alongside supporting our conclusion that reform is urgently required, raised a key concern about the uncertainty around the decision made by Ofgem on the Significant Code Review: Targeted Charging Review, which removed the Small Generator Discount (SDG). Further concerns were raised relating to Ofgem's Significant Code Review: Reform of Network Access and Forward-Looking Charges in relation to the "very large" negative impact that Distribution Generation (DG) over 1MW paying Wider TNUoS will have on new and existing DG developments. It was highlighted through our engagement that TNUoS charges penalise generators in the areas with the greatest hydro and wind resources. Suggestions on reform included a full rehaul of the current methodology, removing TNUoS from 132KV in Scotland and removing locational charges completely.

*"There is a lack of incentive in the CUSC to decarbonise generation" - Consultant*

*"A great piece of work which validates what we have been saying to Ofgem for years" – Developer*

*"It is time to think differently on how grid charging is undertaken" – Scottish Renewable Developer*

*"Current Ofgem charging reforms will have a negative effect on UK and Scottish Government Net Zero targets." - Consultant*

*"I was particularly struck by the volatility of TNUoS charges" – Academia*

*"To deliver benefits to consumers, TNUoS charges cannot be considered in isolation." - ESO*

We spoke to three Scottish Local Authorities who expressed deep concerns over the current high costs in Scotland and highlighted that this is something that has been raised for many years, yet no progress has been made. Concerns were raised around TNUoS acting as a barrier to renewable developments utilising the natural resources of Scotland to progress to Net Zero, alongside the economic gain that can be achieved from the deployment of renewables.

We welcomed positive engagement from the ESO who agreed with our conclusions that TNUoS is difficult to predict, and that there is benefit in reviewing the underlying TNUoS charging principles and methodology. It was noted it is important that any review considers the impact that the methodology has on consumers as well as on the system as a whole. The ESO highlighted that to deliver benefits to consumers, TNUoS charges cannot be considered in isolation, wider consideration is required for the interactions with markets, network constraint costs and BSUoS. In relation to the locational element the ESO noted that the charge results in higher costs for generation in Scotland, reflects the higher network cost of transporting electricity further. The system impact of increased generation in Scotland can include increased constraint costs in day-to-day operation, and/or new infrastructure being required to transport the energy generated in Scotland to large areas of demand in the south of England. This cost is passed on to the consumer, therefore a locational cost signal for generators can help to reflect and potentially mitigate this by encouraging generators to site in locations favourable to the system overall charges. The ESO is interested to understand whether TNUoS itself is a barrier to entry for new generation in Scotland, when considering the future strong pipeline of investment.

## Bilateral Discussions

We took the opportunity to speak to as many stakeholders directly as possible and gained further support of our analysis of the issues of TNUoS charging, alongside opposing views which will contribute to our decision making.

We spoke with BEIS and Ofgem who welcomed engagement in this area.

Other Network Owners told us that unpredictable and volatile TNUoS charges throughout GB is a concern and broadly agree that reform of grid charging is paramount. It was highlighted that charging should account for policy objectives and decarbonisation and supported in exploring the lack of guiding principles around Net Zero, this included considering the objectives of the System Operator Transmission Owner Code (STC).

Scottish Local Authorities highlighted that this has been a long-standing issue and agreed that it was now time to bring about positive change. Echoing the point that creating a level playing field and enabling decarbonisation is key to achieve national policy objectives. The way that the current charging regime works blocks this and discriminates against Scottish generation.

Economic Development Agencies had similar views expressing that, despite raising concerns nothing has been done to address the issue. Maximising the socio-economic benefit, that could be delivered through renewable energy projects, particularly offshore wind, is a huge objective for Local Authorities. They expressed disappointment that large scale renewable energy schemes did not progress in their area, losing out on jobs, skills training, supply chain opportunities, and believed that TNUoS played a role in this.

We spoke directly with trade bodies and generation developers, purposely aiming to broaden the debate. The developers we spoke with varied, including small independent developments, developers with large portfolios, developers in different locations of GB and developments with varied technologies.

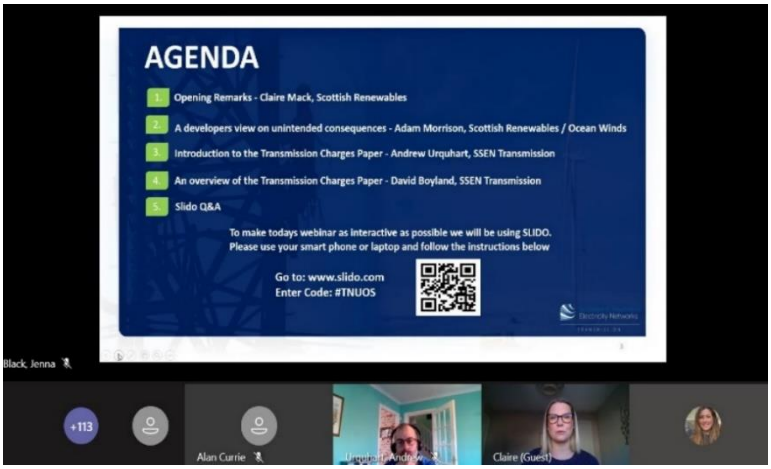
Onshore and offshore wind and solar developers agreed with our findings, they told us;

- TNUoS could be the blockade that deters reaching Net Zero.
- The barrier to the deployment of renewables has a negative effect on the delivery of associated social and economic benefits for local communities.
- Increasing renewables in different locations in GB due to the correlation of wind speeds between North and South was highlighted as being critical to future security of supply and balancing the system.
- Scottish renewable generators are at a significant competitive disadvantage in subsidies, due to the decreasing cost of renewable energy and the cost of TNUoS increasing.
- Existing generation sites can not react to the locational cost signals of TNUoS. The high, volatile and unpredictable costs associated with TNUoS can be a forward-looking signal for new developments to signpost where is best to connect, however for existing units they have got little or no control and cannot move location to meet the signals of TNUoS.
- Developers with a wide geographic portfolio of assets explained that, despite the locational signal in the South providing a credit, that high charges in the North outweighs the credits received in the South. Reform of TNUoS is a priority as charges negatively affect business models.

We spoke to a developer with a portfolio of conventional generation, in particular CCGT and CHP, they told us,

- They were concerned that our discussions and paper solely focussed on renewable generation being required to reach Net Zero and although it was recognised that renewables will play the most significant part in the transition, the diversity of the generation mix including conventional generation within GB will play a critical role.
- Conventional generation will be required, to ensure security of supply and/or manage voltage levels.
- Some conventional generators rely on the locational signals of TNUoS. Generating units that are rarely dispatched, however can be called upon at any time, rely on the credits received from TNUoS alongside other mechanisms to sustain their plants.
- Undertaking they had their own decarbonisation strategy to meet Net Zero, with the use of Carbon Capture and Storage (CCS) and the exploration of hydrogen was another area that was flagged to be missing from the debate.
- Concerns were raised on the lack of detail outlined in our paper relating to how constraint costs and whole system intertwine with TNUoS. It was strongly felt that these areas should have been included.
- Despite having opposing views as to why reform should take place there was broad agreement that reform is required to present a solution to the volatility and unpredictability of the current TNUoS regime.

## Webinar Engagement & Follow Up Survey




Hosted in March this year, the webinar was supported by Claire Mack, Chief Executive, Scottish Renewables who opened the event and Adam Morrison, Chairman of the Board, Scottish Renewables/ Project Director, Ocean Winds who presented a developer's view of the unintended consequences that the current TNUoS charging regime poses in Scotland. The webinar was a useful engagement tool which encouraged strong participation from a wide variety of key stakeholders including policy officials, ESO, Economic Development Agencies, Local Authorities and current and future generation customers (thermal / CCGT, offshore and onshore wind and solar). The majority of the attendees agreed with our findings within our paper and expressed their concerns over the volatility, unpredictability and high costs of TNUoS charges. There was a predominant theme to the responses throughout which echoed our concerns in relation to TNUoS posing a barrier to the progression towards Net Zero. Contrarily we received opposing views which questioned our rationale, in particular around the cost to transport electricity long distances from North to South, this feedback will go towards shaping our next steps as we will ensure that all views are taken on board.

## Next steps based on your feedback.

Throughout our engagement so far on TNUoS, we have received an excellent response from across industry. It is clear from our analysis and engagement, that there is **overwhelming support for reform to TNUoS** and urgent action is required. We have captured differing views on this subject from various stakeholders, which will support our decision making and approach in proposing balanced and holistic reform options.

Amongst feedback we received from stakeholders, is that the development and deployment of **Offshore Wind will be critical to the transition to Net Zero** and that TNUoS is a significant barrier to developments. To further this conversation, we will be exploring the effect that TNUoS has on Offshore Wind developments.

One thing that came across strongly is that as an industry, we **need to act now to deliver the 2030 policy targets**. A long-term review may not happen quickly enough. There are many reviews of the electricity industry, we therefore suggest that including TNUoS, and the negative effect that TNUoS has on progressing to Net Zero, in these reviews will be critical to progress this at the pace that is required.

At this point it is clear from the findings of our engagement, that the desired reform options are likely to include a balance of short-term fixes, for example CUSC modifications and ensuring the principles and objectives of CUSC aligns with decarbonisation, and a more long-term rigorous review of the methodology that derives TNUoS charges is required to recognise Net Zero policy objectives. We suggest that Ofgem and the UK Government are best placed to lead on this.

Our **next public stakeholder session** is planned for the Scottish Renewables Onshore Conference on the 1st of June 2021.

Scottish & Southern Electricity Networks

TRANSMISSION

We are a Living Wage Employer

SSEN Community

@ssencommunity

ssen-transmission.co.uk

FairTax

## Appendix 1 Webinar Questions & Answers

## Questions answered live

**Are Ofgem's Net Zero Advisory Group and Citizen's Advice aware of the damaging impact of the current TNUoS Charging Methodology?**

Adam Morrison – I think it is fair to say that some of the evidence that developers themselves or trade bodies have been presenting is relatively new, so perhaps not in full and perhaps that is something that we need to keep working on as a sector is making sure that we are quantifying some of these impacts a lot them we have talked about conceptually before. In short it is something that we can do better at, in relation to quantifying these impacts.

**Storage facilities are required to pay TNUoS for import & export, whilst interconnectors pay zero. Why are we favouring one solution over another?**

Andrew Urquhart – Again this is a legacy issue with TNUoS not being charged to interconnectors. Storage came in more recently, it is a historic legacy thing and is something that should be on the table when it comes to reform as long as it contributes towards net zero.

Adam Morrison - The interconnector situation is a matter of law. It is another competitive barrier for us when looking to deliver renewable power in Scotland we are competing against interconnectors

**Have SR considered an appeal to the competition and markets authority?**

Claire Mack - Short answer is no at the moment, there is a lot of analysis coming forward, one of the great difficulties is, and I would need to look into the detail of this in terms of what the CMA consider the market to be, is whether they see the market being a GB market or would Scotland be looked at separately. If members wanted us look at that CMA work in more detail then we would clearly do that, but it would require significant capacity to do so properly. One thing is clear, which is that the levelling-up agenda will need change and effort to deliver evenly and doing so will obviously be a lengthy and expensive process. Issues like this one with TNUoS charging feel like they work against that agenda.

**Rather than T connected generators, are you considering embedded generators connected to the D network that will be affected by the TCR on TNUoS charges?**

David Boyland - As a TO we have been highlighting through involvement at both a working and delivery group level on Ofgem's Significant Cod Review: Reforming Network Access and Forward-Looking charges. One of the options is that DG =>1MW will also pay wider TNUoS. We have flagged this and liaised with Ofgem through consultation responses and requests for information etc. that this is great concern. We see the issues that transmission connected generation face being emulated on DG. With the majority of DG being renewable low carbon generation, yet again it is that further barrier to Net Zero levying these charges on them. The other element of this is that the more renewable you have within a particular zone the higher the year round not shared costs gets for everyone so we foresee DG paying TNUoS we will see the Transmission connected generators costs increase. Now we know that the TNUoS is meant to be sending a locational signal on where to connect, but the question is what do current connected DG do to react to that signal there isn't anything that can be done.

**Why does the paper have no acknowledgement of the genuine cost of transporting energy from North Scotland to Southern demand?**

Andrew Urquhart - The paper itself is focussed on the wider element, the forward-looking charge, there is a whole bit of TNUoS in terms of what is required to connect to the network which is focussed on local circuits and substations and the assets to get that energy  further away - it is all about the forward looking element that we have been looking at, and that's what really drives the behaviours, in theory, from how it was set up before to get the generation down towards the demand centres and that the element that is really highlighted that is misaligned with Net Zero principles and how it was set up before, that the real crux about what we have been focussing on.

Questions answered post event.

**Are you planning to raise a CUSC mod? What is the potential solution to this issue?**
David Boyland – We don't have any plans to raise a CUSC modification as of yet, we have seen in the past that CUSC modifications can somewhat be a short-term fix to a long-term problem often referred to as a band aid approach. We are continuing our engagement with industry to find an enduring solution to ensure that TNUoS is fit to enable decarbonisation and aligns with reaching Net Zero.

**There is a role for large scale onshore wind in Scotland too. Can you assure us that your aims will not disadvantage onshore despite the easier political win?**
David Boyland - We know that we need **ALL** renewable generation in order to reach Net Zero, our role in this is not to favour any one type of renewables. We plan to publish a paper on the effect that TNUoS has on Offshore Wind however this will also cover the effect that Offshore Wind (high capacity of renewables) has on TNUoS and the unintended consequences that this has on other renewable generation technologies.

**Are North of Scotland (mainland) Zone 1 generators factoring in the increase in Wider after Island links are included (after CMP324/5)?**
David Boyland - In relation to CMP324, A decission was reached by Ofgem to remain with the 27 generation zones. Our initial view of this was that moving to 14 zones may have seen the costs decrease. However, remaining with 27 generation zones was preferred rather than changing the zones to 48. For CMP325 this is a good point in relation to Island links being considered in TNUoS costs. We provided data to the ESO to calculate the Expansion Constant (EC) for the T2 however in doing so we raised deep concerns around the utilisation of this data. The RIIO-1 EC value used for 2020/21 tariffs was set at £14.93/MW/km, whereas the RIIO-2 EC increased by 83% to £27.38/MW/km this led to CMP353 being raised. Ultimately the way that the EC is calculated is commercially sensitive to the ESO, so we do not know the process. The uncertainty of the EC (CMP353) is a prime example as to why the current methodology is not fit for purpose. When looking at the National Grids forecasts if the island links are included in zone 1 it sees the costs increase dramatically, alongside the already high costs, volatility and unpredictability of costs could potentially result in developments being unsustainable. This is a concern not only to the local economy but reaching policy objectives in particular net zero,

**ESO have refused to prioritise CMP358/359 to retain the SGD as it was "known", however the charging environment is not stable. Do you support this Mod?**
David Boyland- The SGD removal from a GB point of view made sense to remove distortions, from a Scottish perspective given that our transmission network comprises of 132Kv we understand the concerns around this. This is something that we will to explore further.

**Do you consider TNUoS system future proof where it comes to more storage coming online?**
David Boyland - Utilising storage is going to be key in the transition to Net Zero, that said we welcomed the proposed changes to BSUoS that will be levied on final demand only not including storage. In relation to TNUoS we are yet to explore what this means as although if more storage is connected to the network in the north of Scotland it will increase demand i.e. shorten the distance electricity needs to travel to reach demand, we don't see the methodology considering this anywhere nor how the TNUoS methodology treats storage. This is something that we will need to explore further

**Is the Aurora analysis Adam mentioned published? The research around future volatility and increased costs of system balancing.**
David Boyland – The full analysis is not published however you can see the slides from the webinar SSEN Transmission, Transmission Charges Webinar Recording

**Having a different offshore methodology seems strange. How can marine renewables progress to commercialisation under current regime?**
David Boyland – The current TNUoS methodology presents a significant barrier to all technologies in Scotland.

**Do you think that Ofgem's lack of focus on this topic is due to lack of skills/knowledge there?**
David Boyland - No, from liaising with Ofgem's Head of Grid Charging, they have a wealth of knowledge on grid charging in particular CUSC and TNUoS.

**Is it time to consider carbon intensity when calculating TNUoS?**
David Boyland - This is a potential reform option which we will consider as part of providing our recommendations.

**If TNUoS costs were flattened wouldn't that adversely affect demand in Scotland by putting up charges? Wouldn't postage stamp approach result in the abolition of "hydro benefit"?**

David Boyland - It would depend on what options were explored to reform TNUoS e.g. if the reform only concentrated on the pot of revenue to be recovered from generation then no. An example of this is that a number of suggestions have been made on our webinar to cap negative TNUoS at zero, in doing this if the credits received in the south where spread across northernly generators then demand would not be affected. Our main goal is to explore options which remove the risks that volatility and unpredictability brings through the current TNUoS charging regime. If a reform option was to increase costs for consumers as an unintended consequence this is not something that we would advocate.

**When levying TNUoS on Distribution projects the additional revenue is allocated to end customers. Shouldn't this just be allocated across all generators?**

David Boyland - This is an interesting point, one that we will look into further to form part of our recommendations.

**Would this problem be solved if ESO put out long term (20yr) TNUoS forecasts based on their best view and used a more cost reflective modelling methodology?**

David Boyland - We currently see great concerns over the current five year ahead forecasts that are published by the ESO, our analysis on unpredictability shows that these forecasts can be far from the reality of the actual costs. This is due to the number of variables and different parameters that go into setting TNUoS tariffs. Given this it would be difficult to determine the value of extending these forecasts further.