



scottish
renewables®

Transmission Network Use of System Charge

TNUoS

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In 1992, the UK's energy system was a very different place.

Coal generation provided the overwhelming majority of the country's power, with the first combined cycle gas turbine plant commissioned in the previous November in Cumbria.

The UK's first commercial onshore wind farm, at Delabole in Cornwall, was just a month old, with Scotland's first, at Hagshaw Hill in Lanarkshire, still three years away.



In Denmark, the world's first offshore wind farm, Vindeby, had been energised a year before.

Almost 30 years on, much has changed - but one thing has stayed the same.

In 1992 civil servants at National Grid, as the UK's electricity system operator, were drafting a review of charging arrangements in light of the organisation's statutory duties under the Electricity Act 1989, setting out a model of how the UK's electricity network would be paid for.

In 2021 our industry - at the heart of the economy and with a vital role in meeting net-zero - is hamstrung by that very model.

Now called the **Transmission Network Use of System (TNUoS)** charge, it penalises Scottish renewable energy projects to the tune of tens of millions of pounds every year.

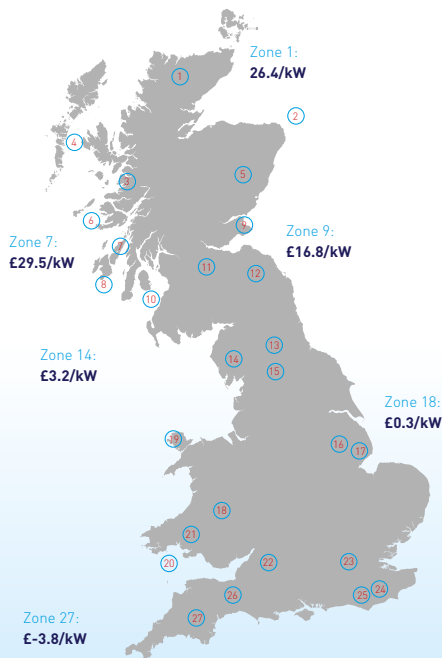
Put simply, TNUoS charges make Scottish offshore wind farms 20% more expensive than those in English waters. While an average 1GW Scottish offshore wind project would pay £38 million a year to use the electricity network, an identical wind farm in the congested seas off England's south coast would receive a £7 million payment for the same service.

These charges are volatile and unpredictable, and even mean renewable energy projects built in the south of England are rewarded for putting electrons into the national grid.

Worse than that, international developers now face a situation where these costs are not levied on their projects in Europe - projects which can make use of interconnectors to import low-carbon power to the UK rather than face the costs and risks associated with TNUoS to develop projects here.



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The potential consequences of TNUoS for Scotland's future as a renewables powerhouse are stark. Current policy is simply out of step with the UK's future ambition and objectives.

The existing charging mechanism is introducing uncertainty at a time when acceleration of deployment, and the associated investment required to enable that, needs greater rather than less certainty.

It is also clear that those uncertainties are falling disproportionately on offshore wind: the very technology that can bring the largest volume of low-carbon electricity on to our system, and one that already bears a significant risk profile.

Quite simply, TNUoS methodology is broken.

It was devised for a different time, and a different electricity system. Then, thermal plant was built near centres of population - think Longannet and

Cockenzie near Edinburgh and, further back, Braehead and Yoker in Glasgow.

Fuel was transported to those power stations where it was burnt, with electricity transported just a few miles to consumers.

The average UK fossil-fuel power station is now more than 30 years old. They must be replaced to ensure we have enough electricity in future and to reduce the carbon emissions which are causing climate change.

Our electricity transmission system, built more than half a century ago, requires upgrades in order to cope with new ways of generating and using power - but it isn't just the cables, towers and substations which require a refresh. The way we regulate and pay for that system must change, too.

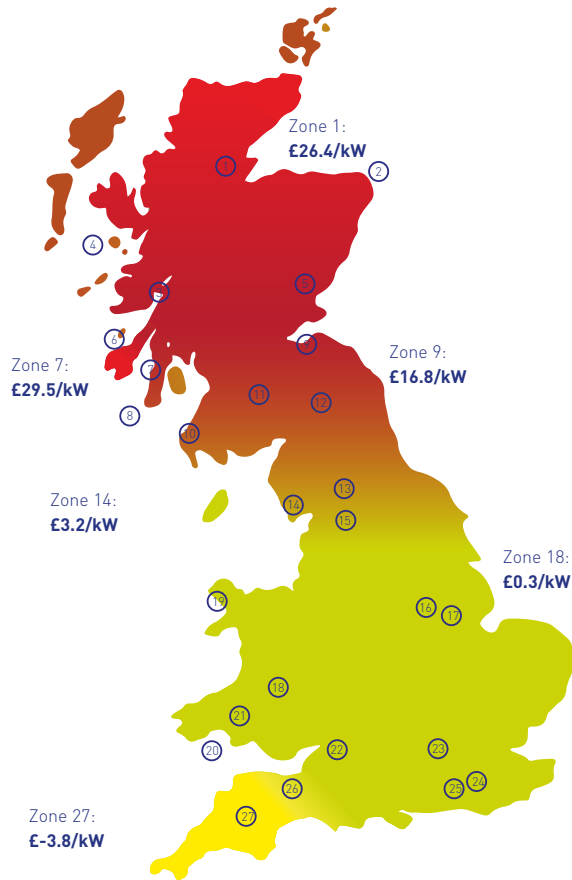
The model we have now, with TNUoS at its heart, harks back to 1992 - the days of fossil fuel generation. It doesn't recognise the shift in focus of both the

UK and Scottish Governments to not just set ambition to meet net-zero, but also to put in place legislation to ensure we do so.

Transmission charges as they stand reflect neither the need for complementary technologies as part of the new low-carbon energy system, nor the additional wider socio-economic benefits which that development brings.

Those benefits include the creation of jobs from developments across the whole of the UK, rather than the very tightly-defined areas where generation has happened in the past.

It's now time for the policies and regulations which underpin electricity transmission to consider not just the location of consumers of energy but also the location of the very best renewable resources in order to build out the projects that will take us further and faster towards net-zero.



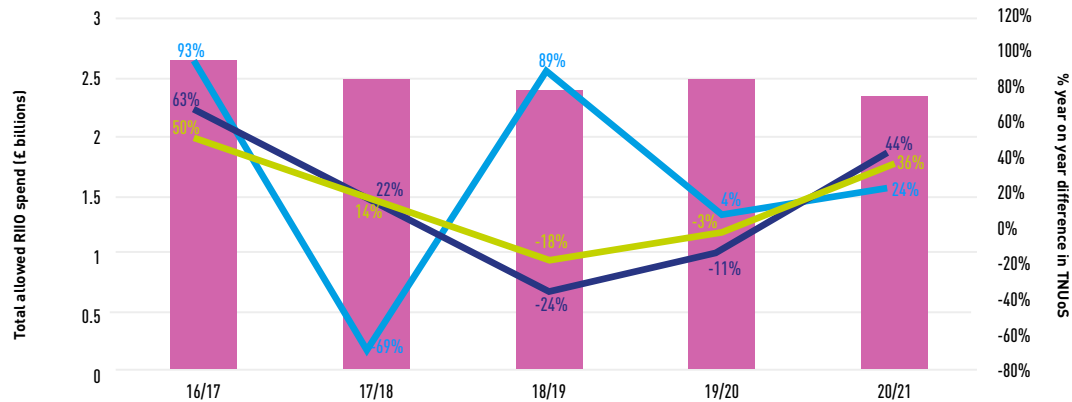
2021/22 Wider Zonal Tariffs

HIGHEST +VE CHARGES

HIGHEST -VE CHARGES



TNUoS no longer does what it was designed to do



While the cost of maintaining the electricity network has remained stable for many years, the TNUoS charges levied to pay for it have varied wildly.

TNUoS is bad for UK consumers

The unpredictability of electricity network charging means it is now one of the **major risks** faced by developers of renewable energy projects.

It is estimated that the cost of that risk by 2030 could be almost **£400 million per year** – a cost which will ultimately be paid by energy consumers, and which equals more than **£14 per UK household.**



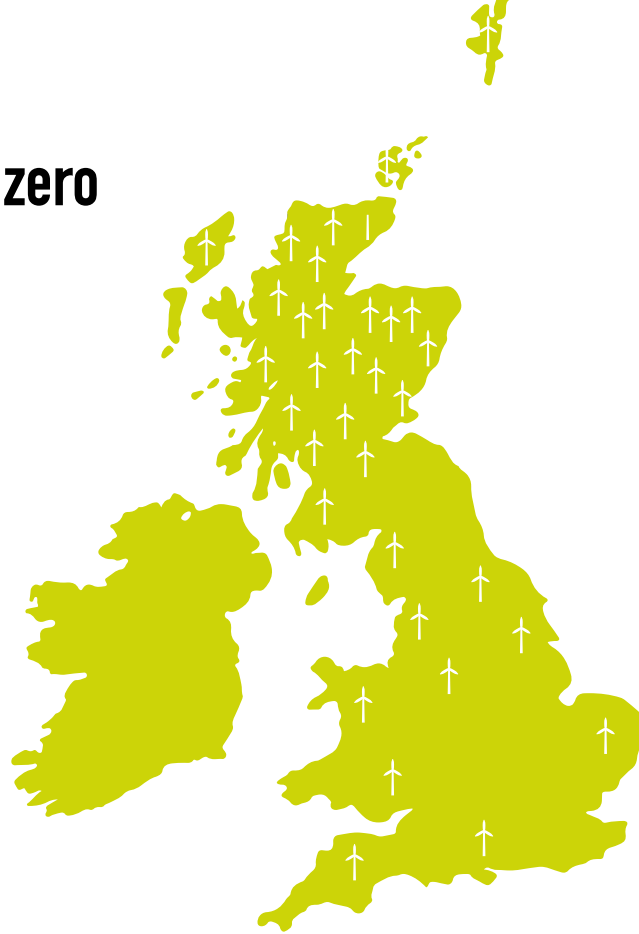
TNUoS is bad for net-zero

Tackling climate change means using every tool in the toolbox.

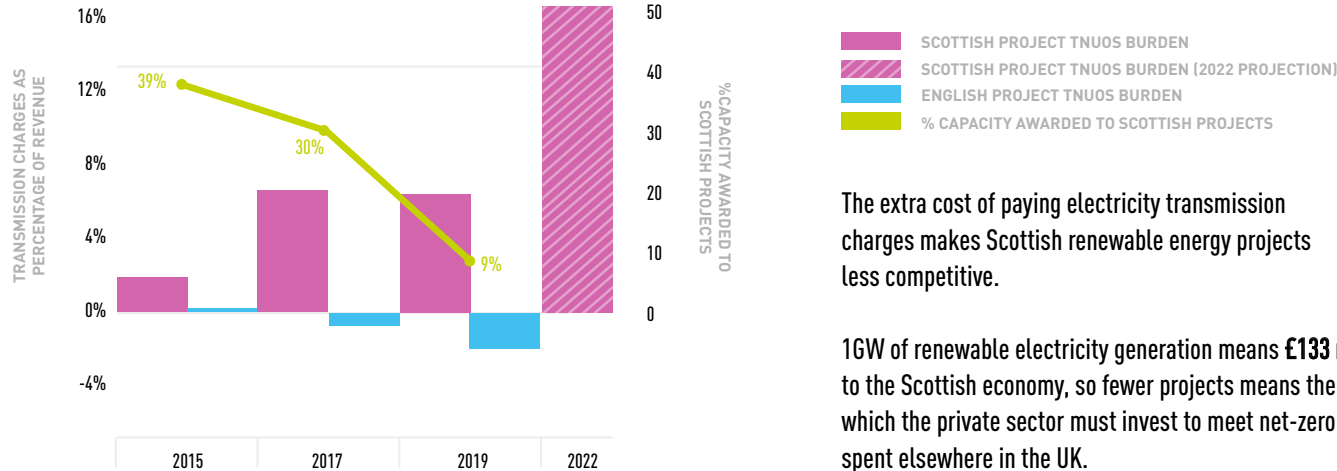
Scotland has the wind, land and sea necessary to build the renewable energy projects needed to meet net-zero.

But the increased costs TNUoS imposes make Scottish projects uncompetitive.

The Climate Change Committee has said the UK needs 30GW of onshore wind by 2050. 20GW of this expected to be developed in Scotland, but with TNUoS disadvantaging Scottish projects in the CfD there is a risk these projects will not be built – damaging our hopes of reaching net-zero.



TNUoS is harming Scotland's economy

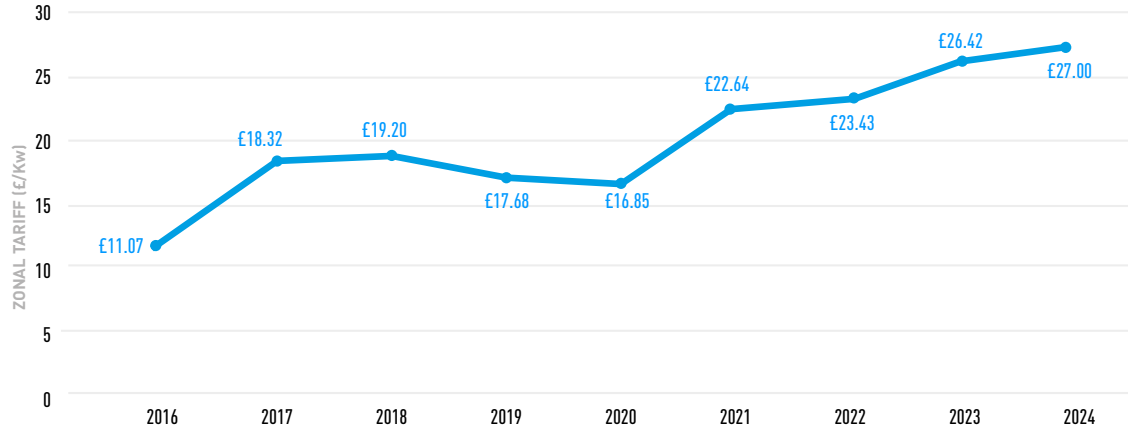


The extra cost of paying electricity transmission charges makes Scottish renewable energy projects less competitive.

1GW of renewable electricity generation means **£133 million** to the Scottish economy, so fewer projects means the money which the private sector must invest to meet net-zero will be spent elsewhere in the UK.

The TNUoS situation will get much worse

AVERAGE TARIFFS ACROSS SCOTTISH CHARGING ZONES



The average locational charge in Scotland will increase from **£11 per kW** in 2016 to a predicted **£27 per kW** in 2024 – an increase of 145%

A resolution to this issue is in the hands of the UK Government and Ofgem

JONATHAN BREARLEY
CHIEF EXECUTIVE

ofgem

Ofgem itself is going to need to change and we are fully up for the conversation about what that might mean about our roles and our duties.

We were designed in a world that was not moving the way the energy system is moving now so we want to become a more adaptable and responsive organisation.



ENERGY WHITE PAPER



UK Government

The detailed technical and commercial rules of the energy system, established in a collection of codes and engineering standards, also need an overhaul to ensure that they are fit for purpose as we transition to a clean energy system.

Without [reform] we risk having an energy system which makes less effective investment and operational decisions, resulting in excessive costs for consumers or a failure to reduce emissions in line with our net zero target.
