

TNUoS Demand Tariffs in Scotland

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Introduction

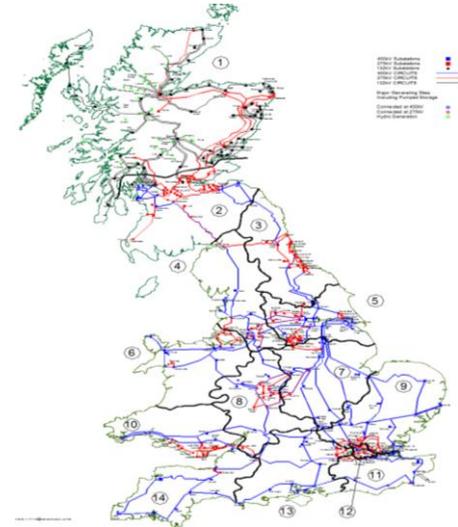
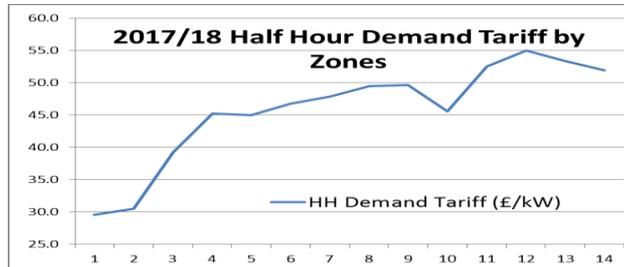
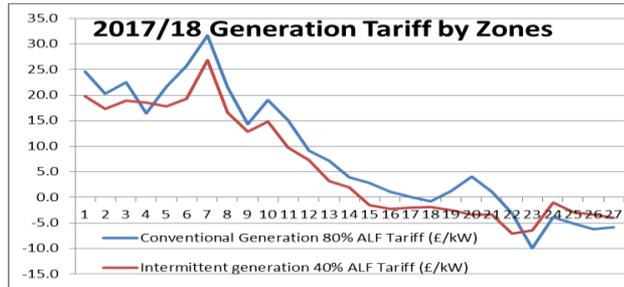
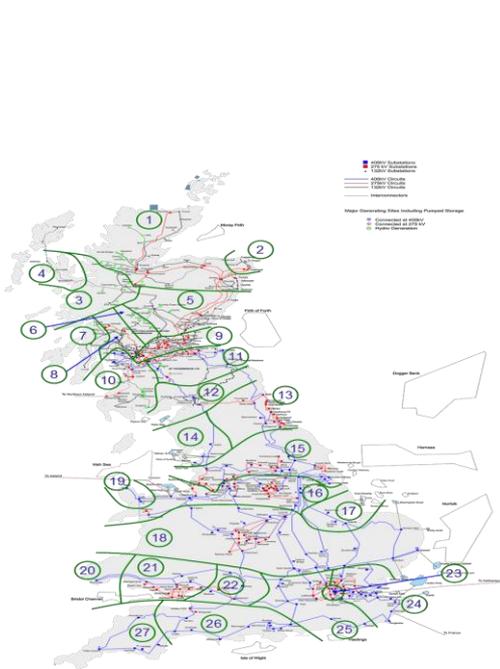
- Background
- Cost-Reflectivity
- The Existing TNUs Methodology
- Mixture of Exporting and Importing GSPs within a Zone
- Next Steps
- Q & A

Background

- The Transmission Network Use of System (TNUoS) charge recover the cost of providing and maintaining shared (or potentially shared) electricity transmission assets
- The TNUoS charges vary by location, to signal the users (generators or demand) of the excessive (or deficit) network capacity at local level
- Electricity generally flows from North to South, so a generator in North Scotland sees higher TNUoS generation tariff than generators located in the south
- Conversely, a demand user in North Scotland see lower TNUoS demand tariff, as demand users connecting to North Scotland will reduce the North → South flow

Background – the Locational Signal

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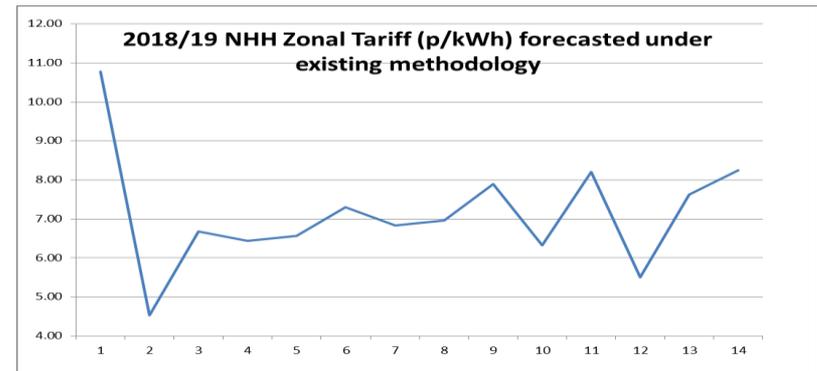
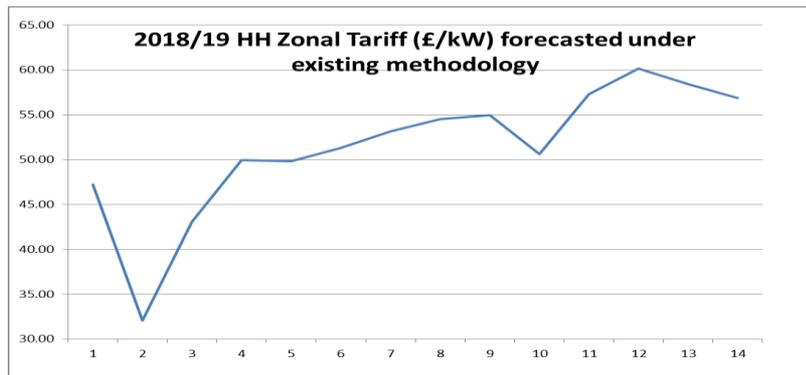


Cost-Reflectivity

- Due to high volumes of embedded generation compared to demand in Northern Scotland, the cost-reflectivity of the locational tariff demand signal is being distorted, when applying the current methodology to calculate the zonal tariffs
- The current methodology leads to higher than expected tariffs for demand customers in North Scotland

An Example

- For the financial year 2018/19, it is forecasted that the Half-Hour demand tariff for demand zone 1(North Scotland) will be around £47.2/kW, a big step change from year 2017/18 tariff (£29.58/kW)
- The non Half-Hour tariff in North Scotland is forecasted to be 10.78p/kWh, the highest among all demand zones and an increase of 6.22p/kWh from 17/18



The Existing TNUoS Methodology

- The TNUoS Transport model calculates the electrical power flow (measured in MWkm), to reflect the incremental cost of building additional capacity at different locations
- The TNUoS Tariff model converts the locational MWkm figures into tariffs.
- Tariffs are aggregated by zones, instead of being set at individual substation locations, to keep the tariffs relatively stable across years

Mixture of Exporting and Importing GSPs within a Zone

- With the increased number of exporting GSPs, the amount of MW exports in North Scotland is comparable with the amount of imports within the same zone
- The existing methodology struggles to cope with large number of exporting GSPs compared to importing GSPs within the same zone

Mixture of Exporting and Importing GSPs within a Zone

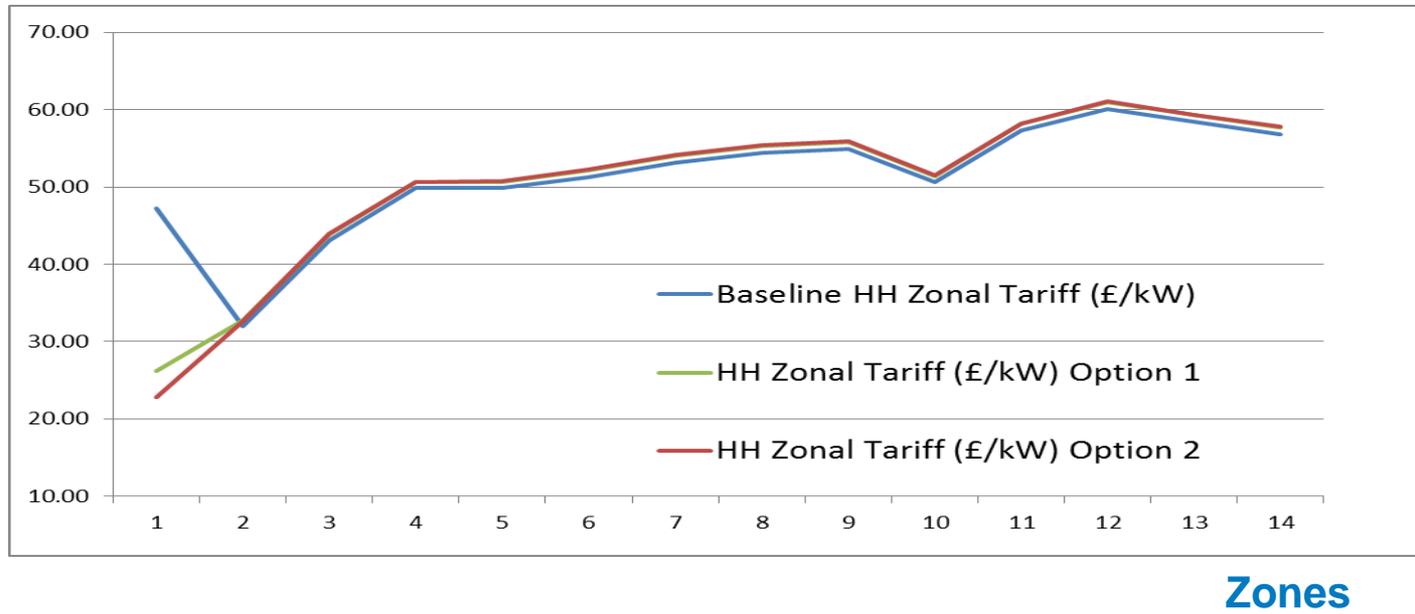
- When aggregating the locational costs within a demand zone into zonal tariff, under the existing methodology, demand at importing GSPs and exporting GSPs tend to “offset” each other
- Therefore the total net demand within the zone do not match the level of total costs, leading to skewed zonal tariff

Next Steps

- The existing methodology needs improvement – changes are needed for 2018/19 tariff setting
- A CUSC modification proposal is being prepared for the June CUSC panel meeting
- Options considered so far –
 - When aggregating, only use positive demand (importing GSP) substations
 - When aggregating, use positive and negative demand substations, but use “magnitude” of their import/export

Indicative Analysis Results

Demand
Tariff
(£/kW)



Indicative Analysis Results

Zone No.	Zone Name	published Feb C5 Tariff		Alternative Methodology under Option 1		Alternative Methodology under Option 2	
		Baseline HH Zonal Tariff (£/kW)	Baseline NHH Zonal Tariff (p/kWh)	HH Zonal Tariff (£/kW) Option 1	NHH Zonal Tariff (p/kWh) Option 1	HH Zonal Tariff (£/kW) Option 2	NHH Zonal Tariff (p/kWh) Option 2
1	Northern Scotland	47.20	10.78	26.18	5.95	22.86	5.19
2	Southern Scotland	32.07	4.53	32.72	4.62	32.63	4.61
3	Northern	43.06	6.67	43.89	6.79	43.96	6.80
4	North West	49.96	6.44	50.66	6.53	50.61	6.52
5	Yorkshire	49.84	6.56	50.70	6.68	50.79	6.69
6	N Wales & Mersey	51.29	7.30	52.15	7.42	52.24	7.44
7	East Midlands	53.18	6.83	54.03	6.94	54.12	6.95
8	Midlands	54.49	6.96	55.34	7.07	55.44	7.08
9	Eastern	54.95	7.89	55.80	8.01	55.89	8.03
10	South Wales	50.61	6.32	51.46	6.42	51.55	6.44
11	South East	57.31	8.20	58.16	8.32	58.25	8.34
12	London	60.16	5.50	61.01	5.57	61.10	5.58
13	Southern	58.44	7.62	59.30	7.73	59.39	7.75
14	South Western	56.89	8.24	57.74	8.36	57.83	8.38

Any Questions?



AOB

Next meetings

July

12

Wednesday

August

9

Wednesday

September

13

Wednesday

Will be an 10:30am start unless otherwise notified.

We value your feedback and comments

If you have any **questions** or would like to give us **feedback** or share **ideas**, please email us at:

cusc.team@nationalgrid.com

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