TNUoS Tariffs Five Year View for 2023/24 – 2027/28 Webinar

NGESO Revenue Team

April 2022

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Agenda

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TNUoS Tariff Forecasting & Setting Team

Nick Everitt

Forecasting, setting and billing TNUoS to recover around £3.9bn of revenue per year from generators and demand

Sarah Chleboun

- Overall tariff setting
- Offshore local tariffs

Jo Zhou

- Long term strategy development
- TGR
- Onshore Local Circuits

Matt Wootton

- Demand
- EET
- TDR
- Local substation
- Generation

Heather Stratford

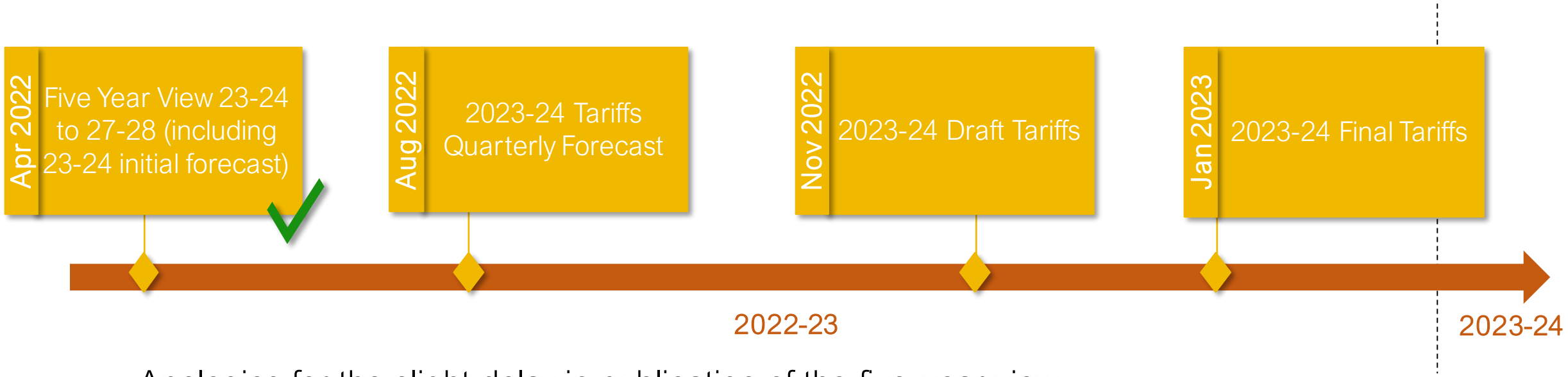
- Revenue
- Demand
- ALFs

Ishtyaq Hussain

- Revenue

Tariff Timetable

NGESO has a licence and CUSC obligation to publish quarterly TNUoS forecast and a 5 year review annually, to enable market participants to make efficient operational and investment decisions.



- Apologies for the slight delay in publication of the five-year view.
- The tariffs for 2023/24 will be refined throughout the year.
- Final Tariffs for 2023/24 will be published by 31st January 2023 and will take effect from 1st April 2023.

TNUoS Tariffs Uncertainties

Our five-year view incorporates CMP343: 'Transmission Demand Residual bandings and allocation', which has now been approved for implementation. No other changes have been implemented in these tariffs.

Regulatory Uncertainties

- Judgement has been given on the Judicial Review (JR) regarding CMP317/327/339.
- We believe that the effect is that the definition of Charges for Physical Assets Required for Connection (the connection exclusion) has to now be revisited in line with the correct definition in the CMP317/327/339 decision and the judgement.
- We are working with Ofgem to understand what this means in practice, and will communicate this as soon as we have further information.
- The published five-year forecast does not take account of this JR decision.

Sensitivities:

Having consulted the industry, we have also included sensitivities to provide industry with further information.

- Expansion Constant
- Revenue (impact on TDR)
- Additional HVDC Bootstraps
- Remote Island Links

Impact of COVID19

- No COVID19 impact has been factored into this five-year view

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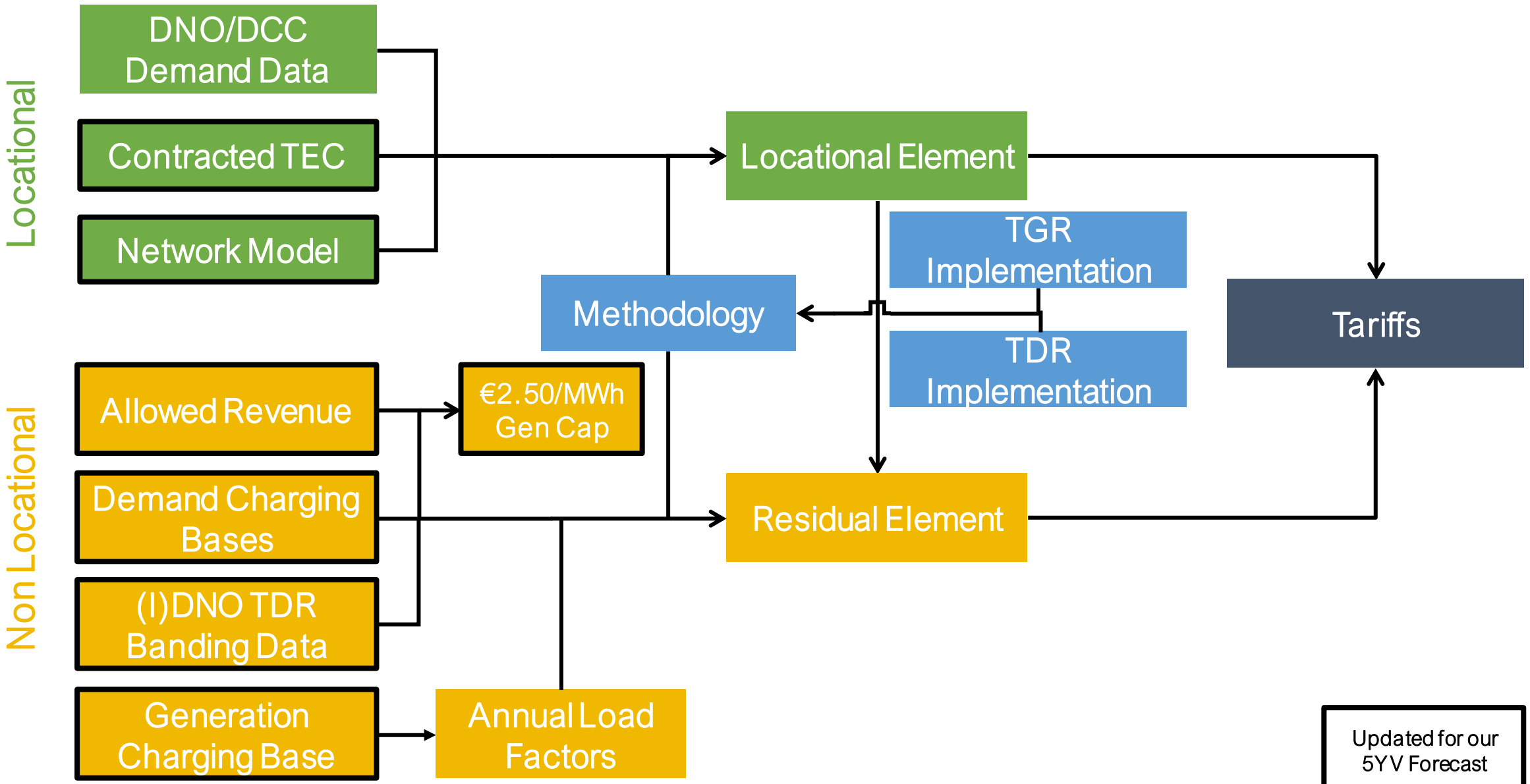
Key inputs and findings

Sarah Chleboun

Key Inputs for TNUoS Tariffs



Input changes in this tariff publication

		April 2022	August 2022	Draft Tariffs November 2022	Final Tariffs January 2023
Methodology		**Open to industry governance**			
Locational	DNO/DCC Demand Data	Initial update using previous year's data source		Week 24 updated	
	Contracted TEC	Latest TEC Register	Latest TEC Register	TEC Register Frozen at 31 October	
	DNO/IDNO Demand Residual Banding Data	Initial update using previous year's data source		Prior year out-turn data provided	
	Network Model	Initial update using previous year's data source (except local circuit changes which are updated quarterly)		Latest version based on ETYS	
	Inflation	Forecast	Forecast	Forecast	Actual
Residual/Adjustment	OFTO Revenue (part of allowed revenue)	Forecast	Forecast	Forecast	NGESO best view
	Allowed Revenue (non OFTO changes)	Initial update using previous year's data source	Update financial parameters	Latest TO forecasts	From TOs
	Demand Charging Bases	Initial update using previous year's data source	Revised forecast	Revised forecast	Revised by exception
	Generation Charging Base	NGESO best view	NGESO best view	NGESO best view	NGESO final best view
	Generation ALFs	Previous year's data source		Draft ALFs published	Final ALFs published
	Generation Revenue (G/D split)	Forecast	Forecast	Forecast	Generation revenue £m fixed

- Green highlighting indicates that these parameters are fixed from that forecast onwards.

Key findings

Total Revenue

- Total TNUoS revenue is forecast to be **£3,947m** for 2023/24 (an increase of £353m from FY2022/23), rising to **£4,405m** in 2027/28, based on figures submitted by all Onshore TOs & Offshore TOs, forecast revenues for offshore projects that are expected to asset transfer within the next 5 years and updates to pass-through items.

Generation

- Generation revenue is forecasted to be **£944m** for FY22/23, a **£102m** increase versus 2022/23 Final tariffs. This is driven by the increase in revenue from offshore local charges. This is forecast to **increase by £334m** to **£1.28bn** by 2027/28.
- The generation charging base for FY23/24 has been forecasted as **74.9GW** based on our best view, an increase of 2.5GW versus 2022/23 Final tariffs. Which is then forecast to reach **103GW** by 2027/28.
- The average generation tariff is £11.62/kW, an increase of £0.36/kW due to the increase in generation revenue.

Demand

- Demand revenue for FY23/24 is forecast to be £3bn an increase of £250m in comparison to 2022/23 Final tariffs. This increase is driven by the increase in total revenue to be recovered through TNUoS. By 2027/28 demand revenue is forecast to reach just short of £3.13bn.
- From April 2023 TDR banded charges methodology will be implemented as per the decision of CMP343.

Consumer Bill

- The impact on the end consumer is forecast to be **£38.13** for FY23/24, minimal change versus 2022/23 Final tariffs (£38.14). For 2027/28 the consumer bill impact is forecast at **£39.75**, This is due to the increase in the demand revenue driven by an overall increase in revenue.

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Revenue

Heather Stratford

TO Revenue

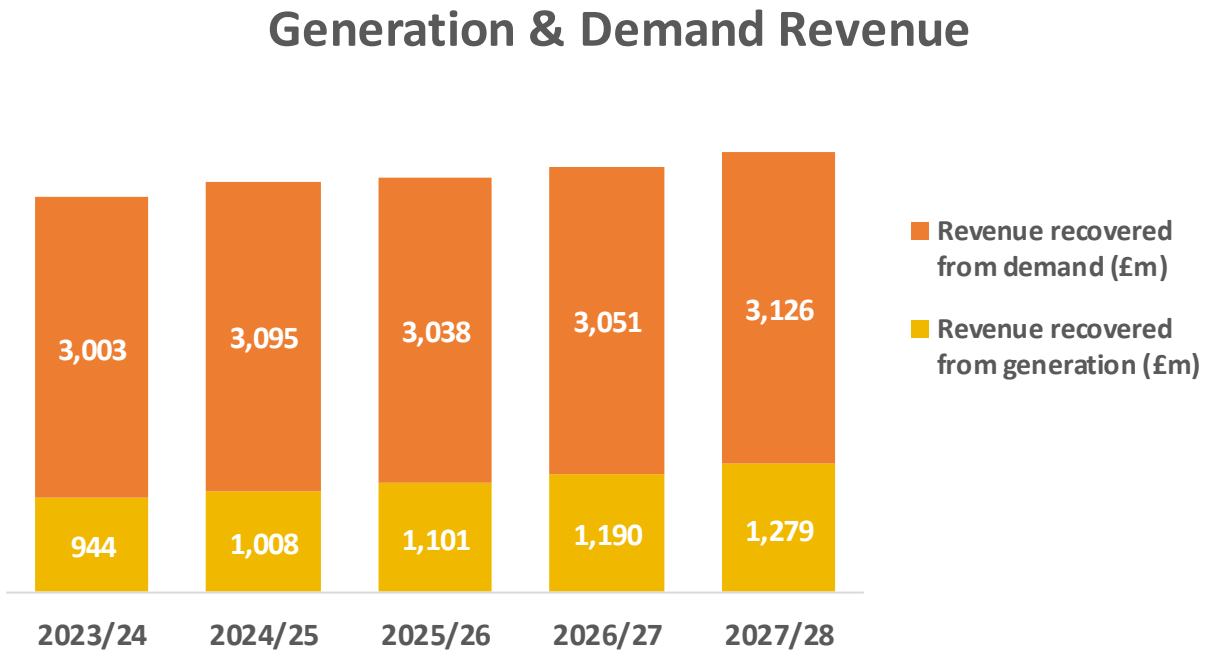
£m Nominal	2023/24	2024/25	2025/26	2026/27	2027/28
TO Income from TNUoS					
National Grid Electricity Transmission	1,991.6	1,995.2	1,995.9	2,035.8	2,076.5
Scottish Power Transmission	421.2	430.6	420.5	428.9	437.5
SHE Transmission	712.4	801.9	759.7	740.0	758.5
Total TO Income from TNUoS	**3,125.2**	**3,227.7**	**3,176.2**	**3,204.8**	**3,272.6**
Other Income from TNUoS					
Other Pass-through from TNUoS	87.0	75.4	75.2	78.2	81.6
Offshore (plus interconnector contribution / allowance)	735.2	800.3	887.6	959.0	1,051.1
Total Other Income from TNUoS	**822.2**	**875.7**	**962.8**	**1,037.3**	**1,132.6**
Total to Collect from TNUoS	**3,947.3**	**4,103.5**	**4,139.0**	**4,242.0**	**4,405.2**

- Total revenue is forecast to be £3,947m in 2023/24 and increase by £457.9m to £4,405m in 2027/28.
- The TOs have provided their 5-year submission to us in January. Total TO income is forecast to rise by £147m across the 5 year period.
- The ESO pass-through is forecasted at £87m in 2023/24 and plateaus through the remaining years of the forecast.
- Offshore revenue forecast is £719m for 2023/24, increasing by £291m to £1,010m in 2027/28. The increase in revenue is due to the amplified offshore generation.

Summary of revenue to be recovered

Revenue	2023/24	2024/25	2025/26	2026/27	2027/28
Total Revenue (£m)	3,947.00	4,103.11	4,138.61	4,241.69	4,404.85
Generation Output (TWh)	194.88	199.88	206.92	212.30	212.30
% of revenue from generation	23.92%	24.56%	26.61%	28.07%	29.03%
% of revenue from demand	76.08%	75.44%	73.39%	71.93%	70.97%
Revenue recovered from generation (£m)	944.18	1,007.82	1,101.09	1,190.49	1,278.55
Revenue recovered from demand (£m)	3,002.81	3,095.30	3,037.51	3,051.20	3,126.30

- The generation output is set to increase by ~16TWh, an increase of 9%
- Demand revenue is proportionately set to decrease through the 5 years, compensated for by an increase in the proportion of revenue recouped by generation
- Although the demand proportion decreases by 5%, the overall revenue is set to increase by £123m across the 5 years



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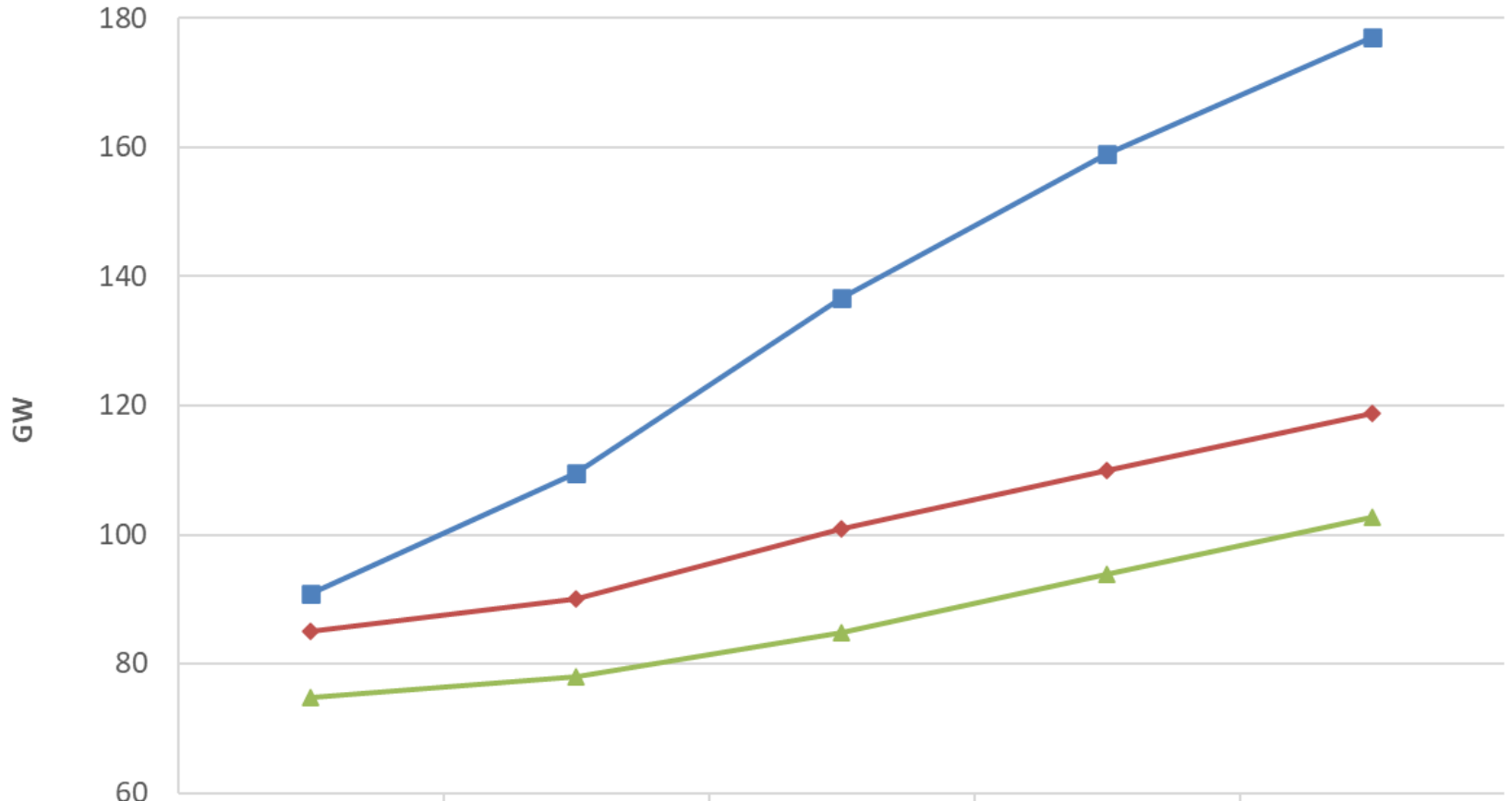
Generation Tariffs

Matt Wootton

Contracted, Modelled & Chargeable Generation Capacity

- CONTRACTED:
  - Full TEC register used
- MODELLED:
  - Reduction in TEC in line with FES forecast and internal best view
- CHARGEABLE:
  - Modelled TEC minus interconnector capacity



	23/24	24/25	25/26	26/27	27/28
Contracted TEC (GW)	91.0	109.6	136.6	159.0	176.9
Modelled TEC (GW)	85.1	90.1	100.8	109.9	118.7
Chargeable TEC (GW)	74.9	78.0	84.9	93.9	102.7

Generation Tariffs

- This 5-Year View forecast includes the implementation of the TGR (CMP317/327), which took effect from April 2021.
- CMP368/369 has not been included in this 5-Year View, as the decision to implement it to the charging methodology has not yet been made.
- All local onshore and local offshore tariffs are excluded in the European €2.50/MWh cap for generator transmission charges, in line with the final decision on CMP317/327.
- The adjustment tariff has been introduced under the TGR, to ensure compliance with the €2.50/MWh cap

Generation Tariffs (£/kW)	Final 2022/23	April 2023/24	2024/25	2025/26	2026/27	2027/28
Adjustment Tariff	- 0.228726	- 0.958471	- 2.374983	- 2.703222	- 3.928044	- 5.330796
Average Generation Tariff*	11.622336	12.608758	12.925836	12.975199	12.676928	12.458362

* *The average generation tariff is calculated by dividing the total revenue payable by generation over the generation charging base in GW. It includes local charges*

- The average tariff is forecast to increase to £12.61/kW in 2023/24 an increase of £0.99/kW compared to 2022/23 final tariffs
- Average tariffs are forecast to peak at £12.97/kW by 2025/26 and then gradually reduce to £12.46/kW by 2027/28.

Generation TNUoS Tariffs – Wider tariffs

The generation TNUoS wider tariffs are made of the four elements below:

Peak Security | Year Round Shared | Year Round Not Shared | Generator Adjustment

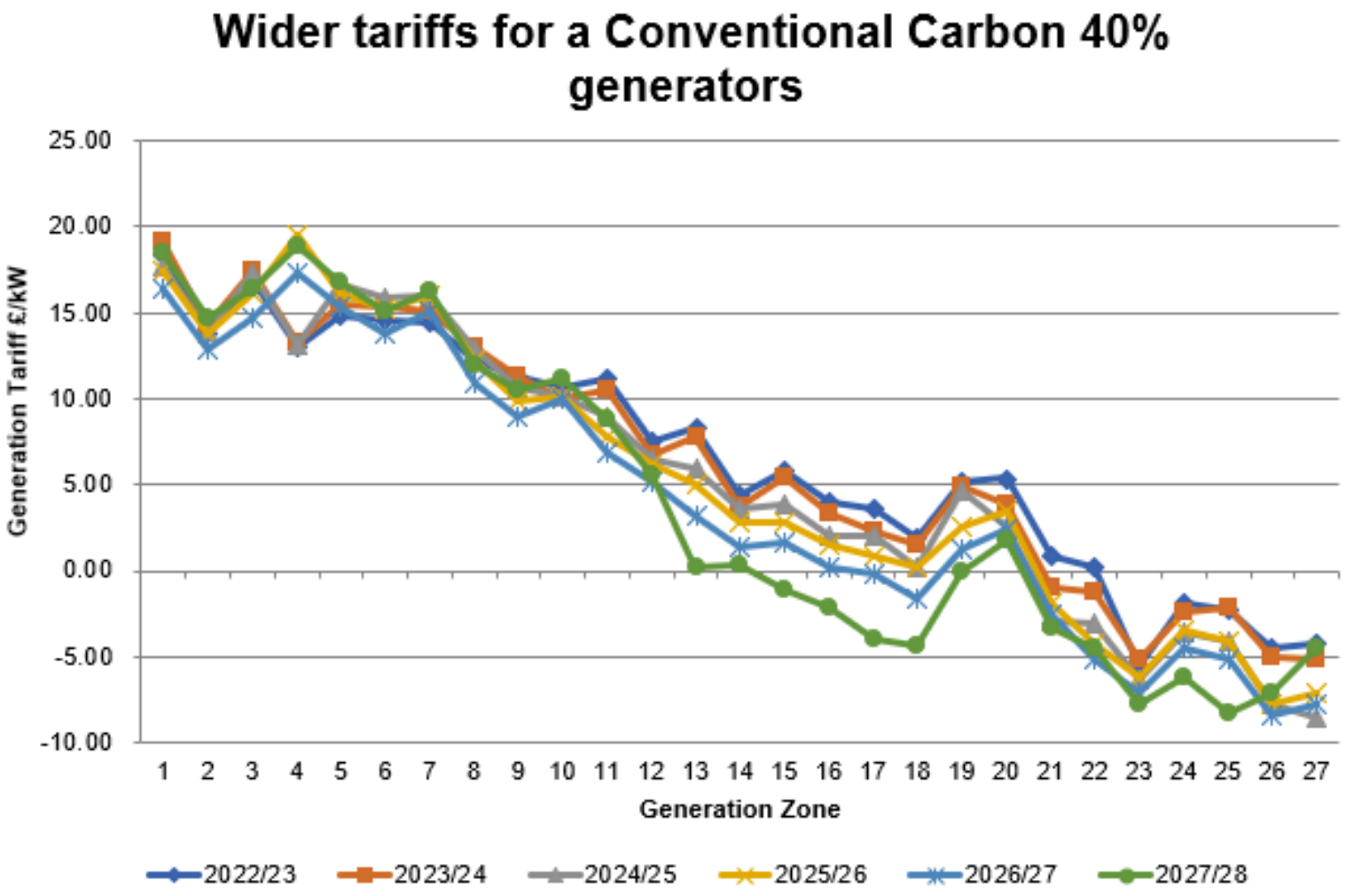
Year Round Shared and Year Round Not Shared elements are multiplied by Annual Load Factors (ALFs) dependent on generation type

We publish examples for each generation type calculation using example ALFs, the example ALFs were updated in the August forecast to more accurately reflect the ALFs we would expect to see for these fuel types:

Conventional Carbon 40%	Conventional Low Carbon 75%	Intermittent 45%
Biomass	Nuclear	Offshore wind
CCGT/CHP	Hydro	Onshore wind
Coal		Solar PV
OCGT/Oil		Tidal
Pumped storage (including battery storage)		

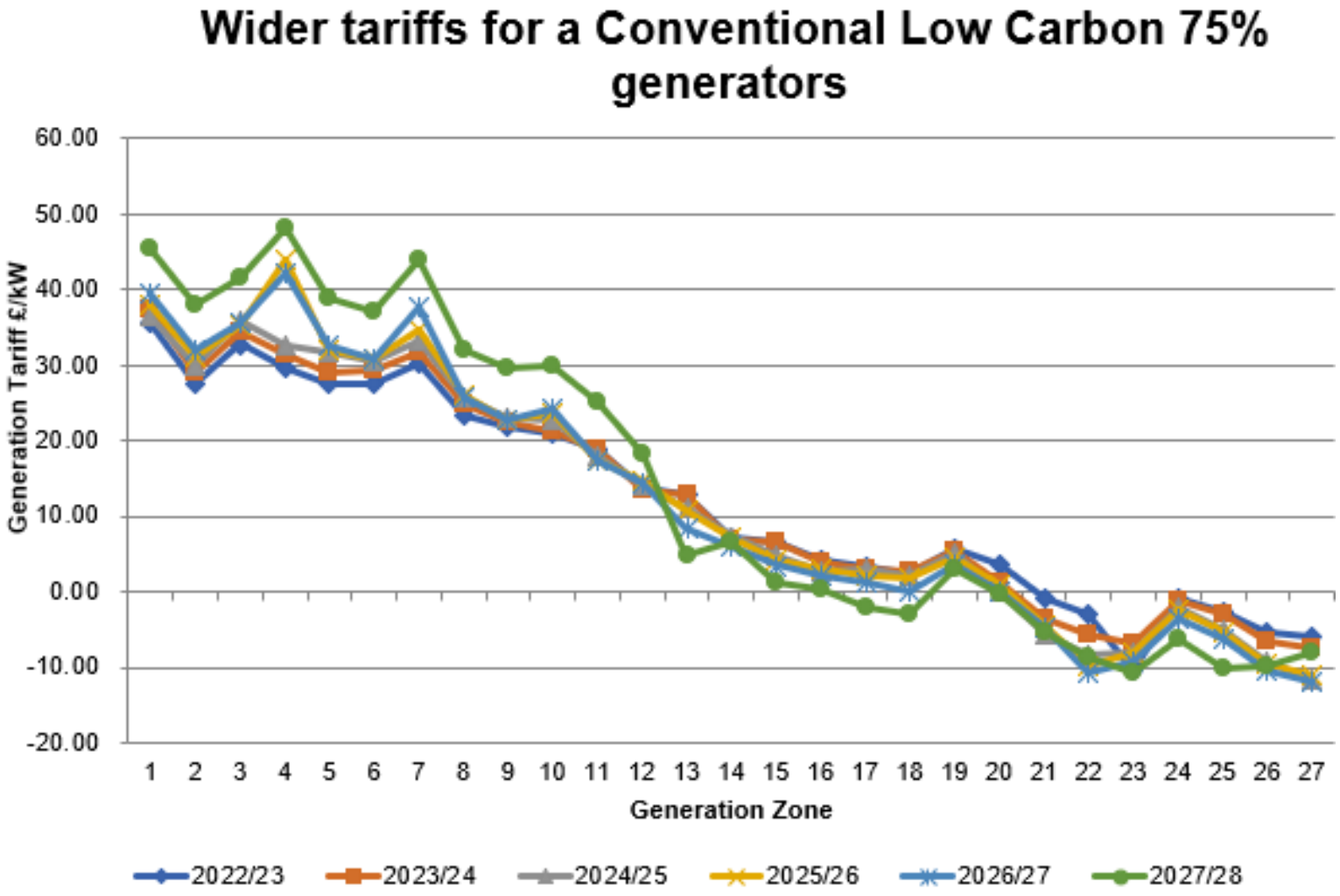
Generation Tariffs – Conventional Carbon

- Scotland
  - zone 4 increases significantly in later years
  - Other zones are broadly consistent
- England & Wales
  - Tariffs get more negative in line with the gradual reduction of the adjustment
  - Change during 2027/28 mainly driven by the Torness – Hawthorn Pits HVDC



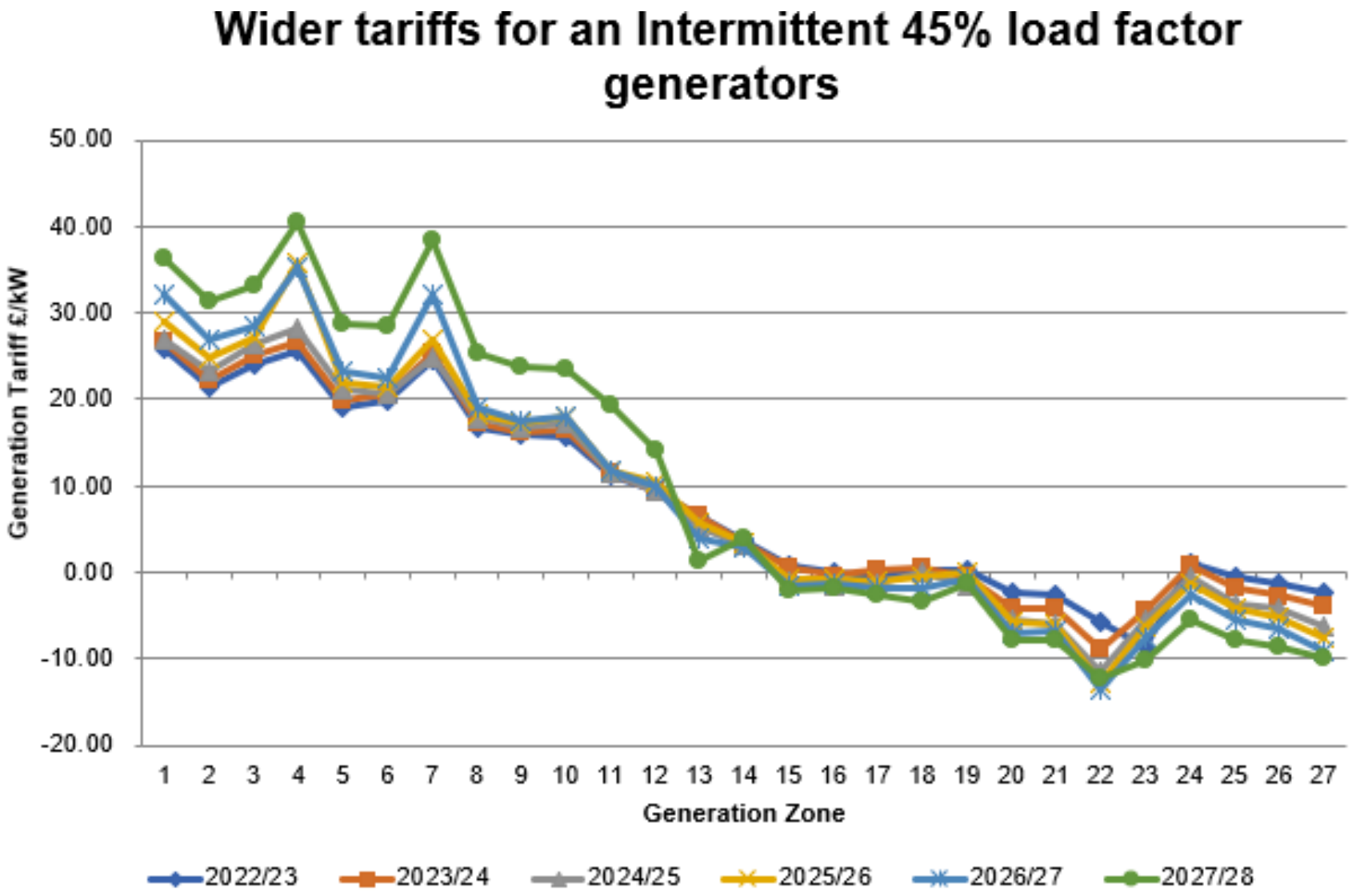
Generation Tariffs – Conventional Low Carbon

- More polarised tariffs in later years, mainly driven by the increased North – South flows and the new HVDC



Generation Tariffs – Intermittent

- Scotland
  - Tariffs follow similar profile to Conventional Low Carbon generators, but tariffs are slightly lower due to exclusion of peak security tariffs
  - Higher tariffs in 2027/28 mainly due to the new HVDC
- England & Wales
  - Decreases follow the decrease in the adjustment and the introduction of the new east coast HVDC



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Local Tariffs

Jo Zhou/Sarah Chleboun

Onshore Local Substation Tariffs

- Onshore local substation tariffs are inflated annually, in line with the increase of May-Oct CPIH
- The local substation tariffs for 2023/24 will be updated and "locked down" when the CPIH actual figure is known

Local substation tariffs for 2023/24

2023/24 Local Substation Tariff (£/kW)				
Substation Rating	Connection Type	132kV	275kV	400kV
<1320 MW	No redundancy	0.158491	0.079249	0.054662
<1320 MW	Redundancy	0.333959	0.169623	0.120443
>=1320 MW	No redundancy	-	0.232832	0.165770
>=1320 MW	Redundancy	-	0.350373	0.252003

Onshore Local Circuits Tariffs

- Local circuits models for 2023/24 will be updated in November, with the new ETYS data.
- We list the local circuit tariffs for non-MITS sites that are forecast to have directly-connected generators in the specific charging year.
- Tariffs can be positive or negative, depending on the "incremental" impact on the local networks.

Connection Point	2023/24 (£/kW)	2024/25 (£/kW)	2025/26 (£/kW)	2026/27 (£/kW)	2027/28 (£/kW)	Connection Point	2023/24 (£/kW)	2024/25 (£/kW)	2025/26 (£/kW)
Aberdeen Bay	2.807792	2.863948	2.921227	2.979651	3.039244	Edinbane	7.539269	7.690195	7.843928
Achruach	- 2.749481	- 2.804406	- 2.860731	- 2.917571	- 2.976788	Elchies			2.399414
Aigas	0.720316	0.734722	0.749416	0.764405	0.779693	Energy Isles			
An Suidhe	- 1.029043	- 1.049556	- 1.070779	- 1.091985	- 1.114698	Enoch Hill	1.614905	1.647203	1.680148
Arecleoch	2.559646	2.610839	2.663056	2.766186	2.770643	Ewe Hill	1.637992	1.670752	1.704167
Ayrshire Grid Service		0.152243	0.155288	0.158394	0.161562	Fallago	- 0.069240	- 0.069312	- 0.069417
Beaw Field			55.123265	55.579397	56.096453	Farr	3.839522	3.916312	3.994638
Beinn Tharsuinn			7.980097	8.139699	8.302493	FAW SIDE			5.154813
Beinneun Wind Farm	1.451300	1.480314	1.509907	1.540091	1.570883	Fernoch	4.844490	4.941382	5.040236
Bhlaraidh Wind Farm	0.711091	0.725313	0.739819	0.754616	0.769708	Ffestiniogg	0.272449	0.277898	0.283456
Black Hill	1.672386	1.705834	1.739951	1.774750	1.810245	Fife Grid Service		0.132939	0.135597
Black Law	1.924479	1.962969	2.002228	2.042273	2.083118	Finlarig	0.352653	0.359706	0.366900
BlackCraig Wind Farm	6.400996	6.529016	6.773161	6.908624	7.046797	Foyers	0.315436	0.321745	0.328180
BlackLaw Extension	4.081108	4.162730	4.245985	4.330904	4.417522	Galawhistle	1.763267	1.798532	1.834502
BLARGHOUR			- 0.020392	3.585589	3.657301	Gills Bay			2.821541
Clash Gour			0.572689	0.584336	0.596550	Glen Kyllachy	0.503790	0.513866	0.524144

For full details of this table see Table 11 in the report / published tables file

Offshore Local Tariffs

- Tariffs are set at asset transfer, or the beginning of a price control, and are indexed in line with the OFTO licence.
- Most tariffs have increased, due to updates to the inflation forecast.
- Projects expected to asset transfer during 2022/23 onwards will have tariffs calculated once asset transfer has taken place.

Offshore Generator	2023/24 April Tariff Component (£/kW)		
	Substation	Circuit	ETUoS
Barrow	9.809468	51.822915	1.286834
Beatrice	8.148209	22.397333	-
Burbo Bank	12.348075	23.865045	-
Dudgeon	18.061011	28.338003	-
Galloper	18.487887	29.240495	-
Greater Gabbard	18.277077	42.294994	-
Gunfleet	21.347488	19.686213	3.679466
Gwynt y mor	23.188182	22.925740	-
Hornsea 1A	8.253296	29.201452	-
Hornsea 1B	8.253296	29.201452	-
Hornsea 1C	8.253296	29.201452	-
Humber Gateway	13.646374	31.309478	-
Lincs	18.944427	74.501954	-
London Array	12.856093	44.078615	-
Ormonde	30.159856	56.375309	0.449264
Race Bank	10.937251	30.377770	-
Rampion	8.934681	23.372745	-
Robin Rigg	-0.661971	37.574824	12.038735
Robin Rigg West	-0.661971	37.574824	12.038735
Sheringham Shoal	28.216888	33.232638	0.722380
Thanet	21.547139	40.368615	0.971815
Walney 1	26.049000	52.078574	-
Walney 2	24.234774	49.320180	-
Walney 3	11.234805	22.761042	-
Walney 4	11.234805	22.761042	-
West of Duddon Sands	10.047556	50.085752	-
Westermost Rough	20.430023	34.769302	-

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Demand Forecasts

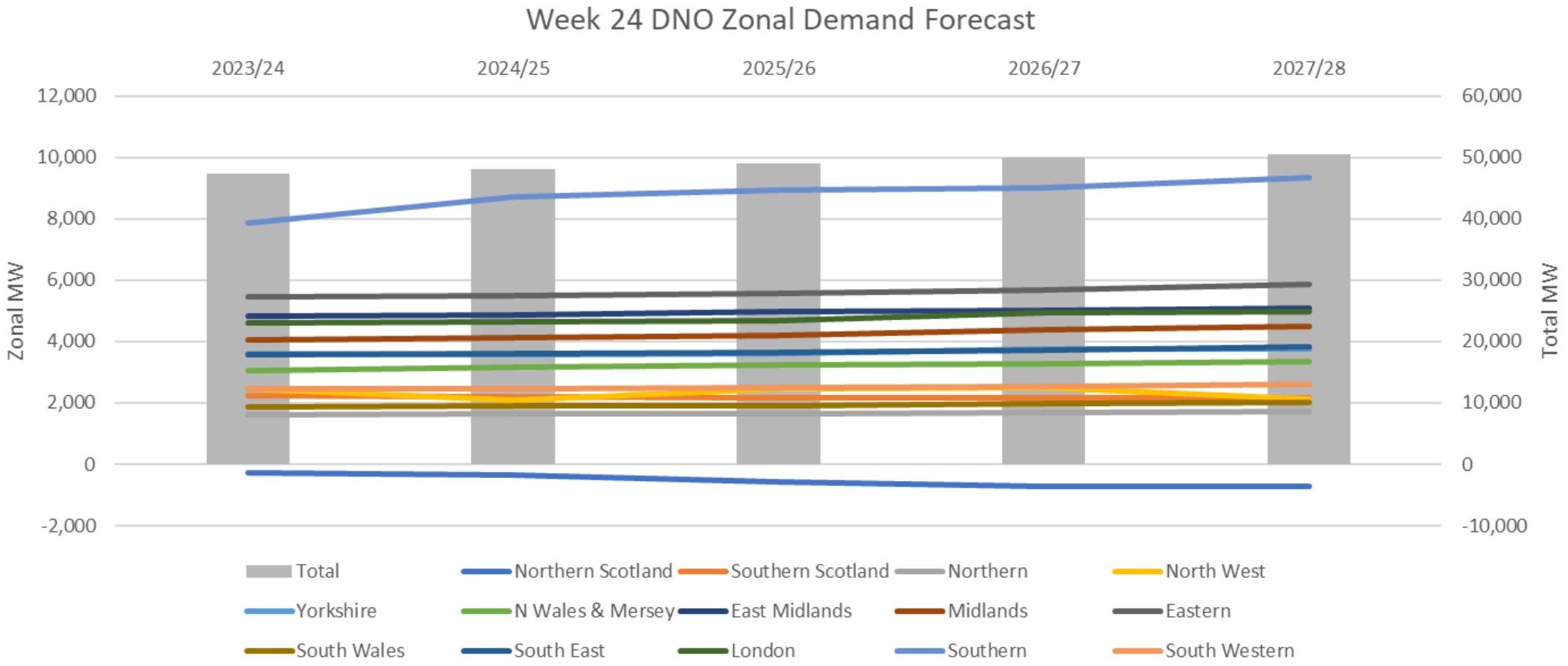
Matt Wootton

System Peak, HH/NHH demand & Chargeable Export Forecast

	2022/23 Final	2023/24	2024/25	2025/26	2026/27	2027/28
Average System Demand at Triad (GW)	50.44	49.72	48.34	48.15	48.94	49.35
Average HH Metered Demand at Triad (GW)	19.41	19.48	19.24	19.17	19.48	19.76
Chargeable Export Volume (GW)	7.53	7.38	7.07	7.15	6.86	7.43
NHH Annual Energy between 4pm and 7pm (TWh)	24.96	24.54	23.55	23.30	23.23	24.41

- There has been a change in the overall system demand forecast for the next 5 years compared to the last 5-year view, with years 2 & 3 (2024/25 and 2025/26) seeing a drop from the average of the 5 years
- Then increasing back to average levels by 2026/27 and then increasing further in 2027/28, as a result of increased electrification of heating and transport, this aligns with the latest FES analysis
- NHH and HH charging bases follow a similar trend
- With the implementation of the demand residual banded charges (TDR) from April 2023 as per CMP343 decision, the impact changes in demand charging bases have on overall demand tariffs has been considerably reduced and now only impacts the revenue to be recovered through locational tariffs
- The impact of COVID-19;
  - No additional adjustments were made to the simulation outputs of the demand charging base simulations for this 5-year view (2023/24 to 2027/28)
- Market Wide Half-Hourly Settlement (MHHS) impacts have not been considered in our 5-year view forecast

Modelled Demand – Week 24 Data



- Week 24 data is contracted demand at GSP received from DNOs and directly connected users.
- It is used to calculate locational tariffs in the transport model.

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Demand Tariffs

Matt Wootton

Demand Tariffs

- In light of Ofgem's decision on CMP343, The demand residual banding charging methodology (TDR) is to be implemented from April 2023 (2023/24)
- Demand residual banded tariffs/charges will be recover the majority of demand revenue on a fixed £/site/annum tariff (may also be referred to as p/site/day) for both HH and NHH demand. Unmetered demand will be charged a fixed p/kWh tariff
- The locational element will be recovered through the existing HH (£/kW) and NHH (p/kWh) tariffs with the demand residual element (previously know as the demand residual tariff) removed
- Locational HH and NHH tariffs are floored at £0/kW and 0p/kWh respectively as per CMP343 decision (demand zones will not have negative tariffs)

Non-locational Banded Tariffs	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Average (£/site/annum)		92.053240	94.968322	93.167042	93.535237	95.839559
Unmetered (p/kWh)		1.1095838	1.1447214	1.1230092	1.1274473	1.1552230
Demand Residual (£m)	2,868	2,926	3,018	2,961	2,973	3,046

HH Tariffs (Locational)	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Average Tariff (£/kW)	55.062816	4.767689	4.826937	4.790433	4.845214	4.925075
Residual (£/kW)	56.861767					

EET	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Average Tariff (£/kW)	2.075319	2.115591	2.236043	2.136232	2.308390	2.278555
Phased residual (£/kW)	-	-	-	-	-	-
AGIC (£/kW)	2.344515	2.464586	2.513878	2.564156	2.615439	2.667748
Embedded Export Volume (GW)	7.533414	7.384554	7.066286	7.149919	6.858276	7.427089
Total Credit (£m)	15.6	15.6	15.8	15.3	15.8	16.9

NHH Tariffs (locational)	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28
Average (p/kWh)	6.809814	0.227167	0.243272	0.243518	0.247097	0.245298

TDR Banded Charges

- Changes in demand residual banded tariffs are impacted by;
  - Changes in overall demand revenue
  - Changes in demand residual revenue - *Proportion of demand revenue not attributed to the locational element of demand tariffs*
  - *Prior year site counts and consumptions as per band thresholds. i.e. 2023/24 final tariffs will be based on 2021/22 final site counts and consumptions across each band*
- As per the CMP343 decision, locational demand tariffs are floored with 4 T-connected bands
- Site counts and consumptions have been updated since the previous 5YV inline with the published (distribution level, set Nov 2020) thresholds and using 2020/21 out-turn data. 2023/24 tariffs will be refined for Draft tariffs with 2021/22 out-turn data.

Band		2023/24	2024/25	2025/26	2026/27	2027/28
Domestic	Tariff - £/Site/Annum	36.81	37.97	37.25	37.40	38.32
LV_NoMIC_1		15.09	15.57	15.27	15.33	15.71
LV_NoMIC_2		85.35	88.06	86.39	86.73	88.86
LV_NoMIC_3		210.53	217.20	213.08	213.92	219.19
LV_NoMIC_4		665.22	686.29	673.27	675.93	692.58
LV1		1,061.49	1,095.11	1,074.34	1,078.58	1,105.15
LV2		1,993.89	2,057.03	2,018.02	2,025.99	2,075.90
LV3		3,239.31	3,341.89	3,278.50	3,291.46	3,372.55
LV4		7,358.82	7,591.86	7,447.86	7,477.29	7,661.50
HV1		4,909.20	5,064.66	4,968.60	4,988.24	5,111.13
HV2		17,778.41	18,341.40	17,993.52	18,064.63	18,509.66
HV3		34,737.54	35,837.58	35,157.85	35,296.79	36,166.36
HV4		89,495.74	92,329.83	90,578.60	90,936.56	93,176.86
EHV1		55,810.06	57,577.42	56,485.34	56,708.57	58,105.63
EHV2		216,161.23	223,006.48	218,776.68	219,641.28	225,052.34
EHV3		457,136.17	471,612.45	462,667.30	464,495.76	475,939.02
EHV4		1,182,280.46	1,219,720.15	1,196,585.52	1,201,314.40	1,230,909.83
T-Demand1		135,438.52	139,727.50	137,077.26	137,618.99	141,009.35
T-Demand2		484,704.19	500,053.48	490,568.89	492,507.61	504,640.96
T-Demand3		1,057,794.39	1,091,291.93	1,070,593.22	1,074,824.18	1,101,303.42
T-Demand4		3,097,790.30	3,195,889.10	3,135,272.15	3,147,662.68	3,225,208.12
Unmetered demand				**p/kWh**		
Unmetered		1.11	1.14	1.12	1.13	1.16
Demand Residual (£m)		**2,925.56**	**3,018.21**	**2,960.96**	**2,972.66**	**3,045.90**

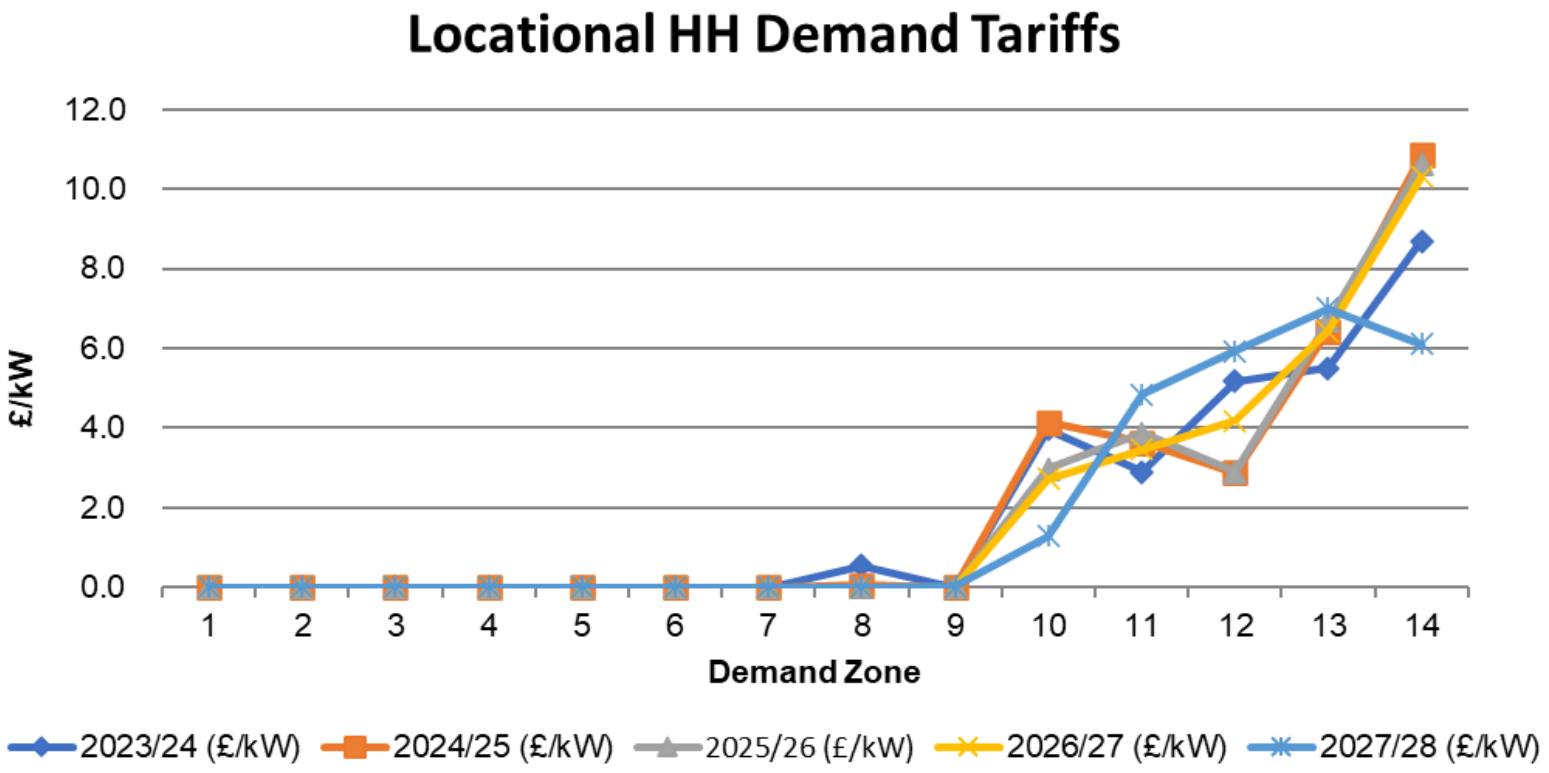
TDR Banded Charges

	Band	Tariff	Percentile	Threshold (kWh/MWh or kVA)		Consumption (GWh)	Consumption Proportion %	Site Count
				Lower	Upper			
	Domestic	£/Site per Annum				98,410	36.44%	28,963,532
kWh	LV_NoMIC_1		<= 40%	-	<= 3,571	1,203	0.47%	910,718
	LV_NoMIC_2		40 - 70%	> 3,571	<= 12,553	4,618	2.02%	691,868
	LV_NoMIC_3		70 - 85%	> 12,553	<= 25,279	5,369	2.47%	343,040
	LV_NoMIC_4		> 85%	> 25,279	∞	16,093	7.69%	338,129
kVA	LV1		<= 40%	-	<= 80	8,904	2.94%	80,893
	LV2		40 - 70%	> 80	<= 150	12,011	4.42%	64,781
	LV3		70 - 85%	> 150	<= 231	6,818	2.74%	24,709
	LV4		> 85%	> 231	∞	19,050	7.49%	29,762
	HV1		<= 40%	-	<= 422	4,648	1.56%	9,321
	HV2		40 - 70%	> 422	<= 1,000	13,104	4.71%	7,754
	HV3		70 - 85%	> 1,000	<= 1,800	9,156	3.64%	3,064
	HV4		> 85%	> 1,800	∞	28,674	10.45%	3,415
	EHV1		<= 40%	-	<= 5,000	1,170	0.71%	374
	EHV2		40 - 70%	> 5,000	<= 12,000	5,121	1.85%	250
	EHV3		70 - 85%	> 12,000	<= 21,500	5,684	2.06%	132
	EHV4		> 85%	> 21,500	∞	14,071	5.62%	139
MWh	T-Demand1		<= 40%	-	<= 23,800	384	0.12%	26
	T-Demand2		40 - 70%	> 23,800	<= 68,099	1,036	0.33%	20
	T-Demand3		70 - 85%	> 68,099	<= 128,292	965	0.36%	10
	T-Demand4		> 85%	> 128,292	∞	2,909	0.95%	9
Unmetered demand								
	Unmetered	p/kWh				2,566	0.97%	

- Thresholds, site counts and consumption updated since last 5YV
- Impacts of COVID can be seen in Consumptions (reduction in most bands),
- EHV band has seen the largest variance to previous forecast;
  - Site counts decreased across all bands
  - Consumption for EHV1 increased significantly
- Transmission banding thresholds may still be subject to change

HH Demand Tariffs (Locational)

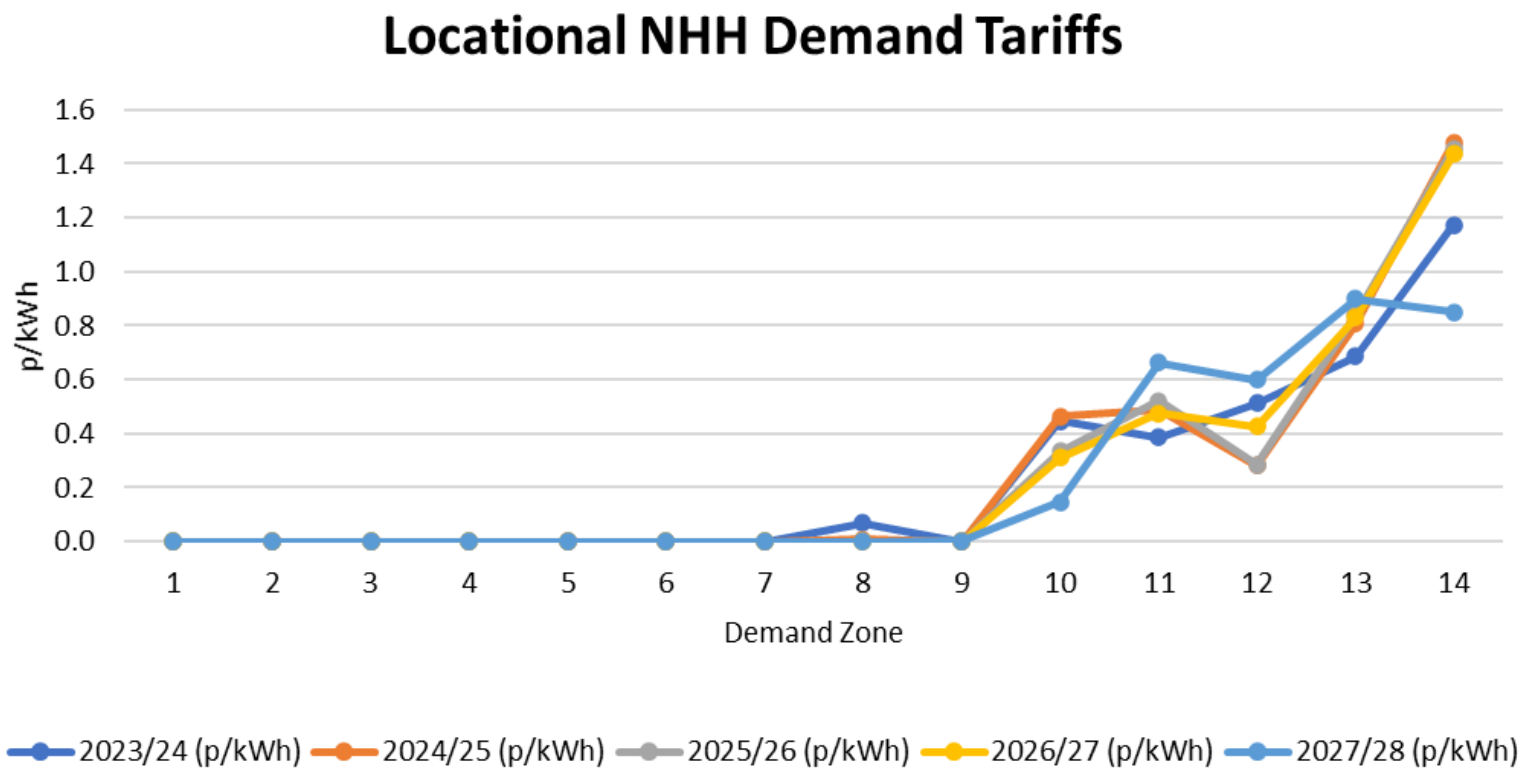
From 2023/24 HH tariffs will no longer include the residual element of the demand charges



HH Tariffs	2023/24	2024/25	2025/26	2026/27	2027/28
Average Tariff (£/kW)	4.77	4.83	4.79	4.85	4.92

- Average tariff for 2023/24 £4.77/kW increasing over the following years, with a slight drop in comparison to the trend in 2025/26
- The variance is impacted by:
  - The gross demand charging base and fluctuations in zonal demand
  - Revenue to be recovered from locational element of demand tariffs
  - 2025/26 decrease coincides with the decrease in overall demand revenue for that year and changes to peak and year-round (locational) tariffs.

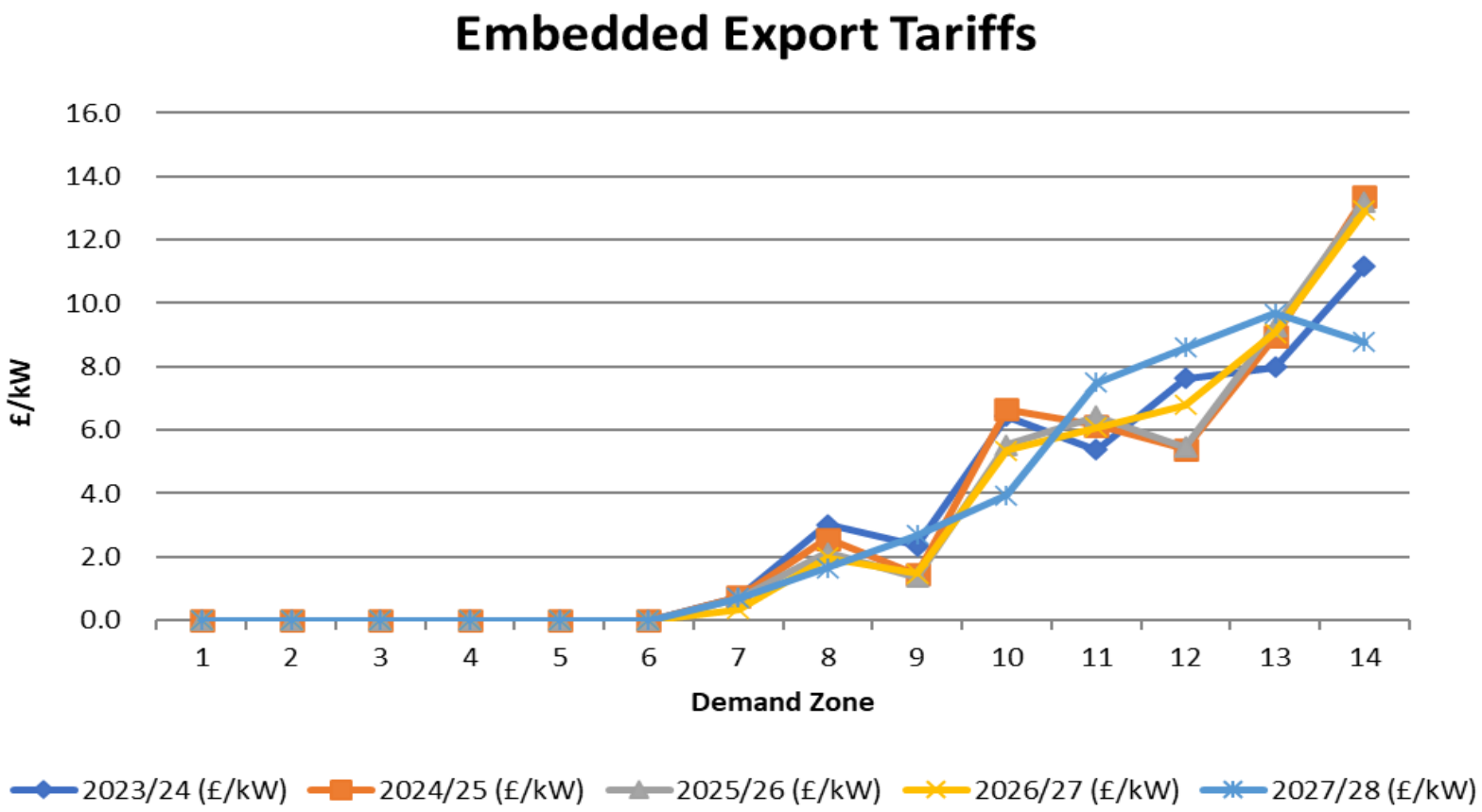
NHH Tariffs (Locational)



NHH Tariffs	2023/24	2024/25	2025/26	2026/27	2027/28
Average (p/kWh)	0.23	0.24	0.24	0.25	0.25

- The implementation of demand residual banded charges (TDR) impacts NHH Tariffs from 2023/24
- Average NHH will fluctuate marginally from 2023/24, increasing year on year by 0.2p/kWh to 0.25 p/kWh by 2026/27, with a slight reduction in 2027/28.
- The change in trend can be attributed to:
  - Proportion of revenue collected increases following HH recovery
  - NHH Charging base variation year on year
  - Fluctuations in charging base in each zone
- HH and NHH trends across zones are very similar how ever changes in the HH and NHH charging bases across zones will create variances. Zones 11 to 14 for 2027/28 as an example

Embedded Export Tariffs



- The EET is not impacted by the TDR
- AGIC increases year on year in line with forecast inflation (CPIH)
- The largest jumps seen in 2025/26 and 2026/27 in relation to the change in the chargeable export volumes

EET	2023/24	2024/25	2025/26	2026/27	2027/28
Average Tariff (£/kW)	2.11	2.24	2.14	2.31	2.28
Phased residual (£/kW)	-	-	-	-	-
AGIC (£/kW)	2.46	2.51	2.56	2.62	2.67

Questions?
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Sensitivity Analysis

Sarah Chleboun, Heather Stratford & Jo Zhou

nationalgridESO

Sensitivity analysis

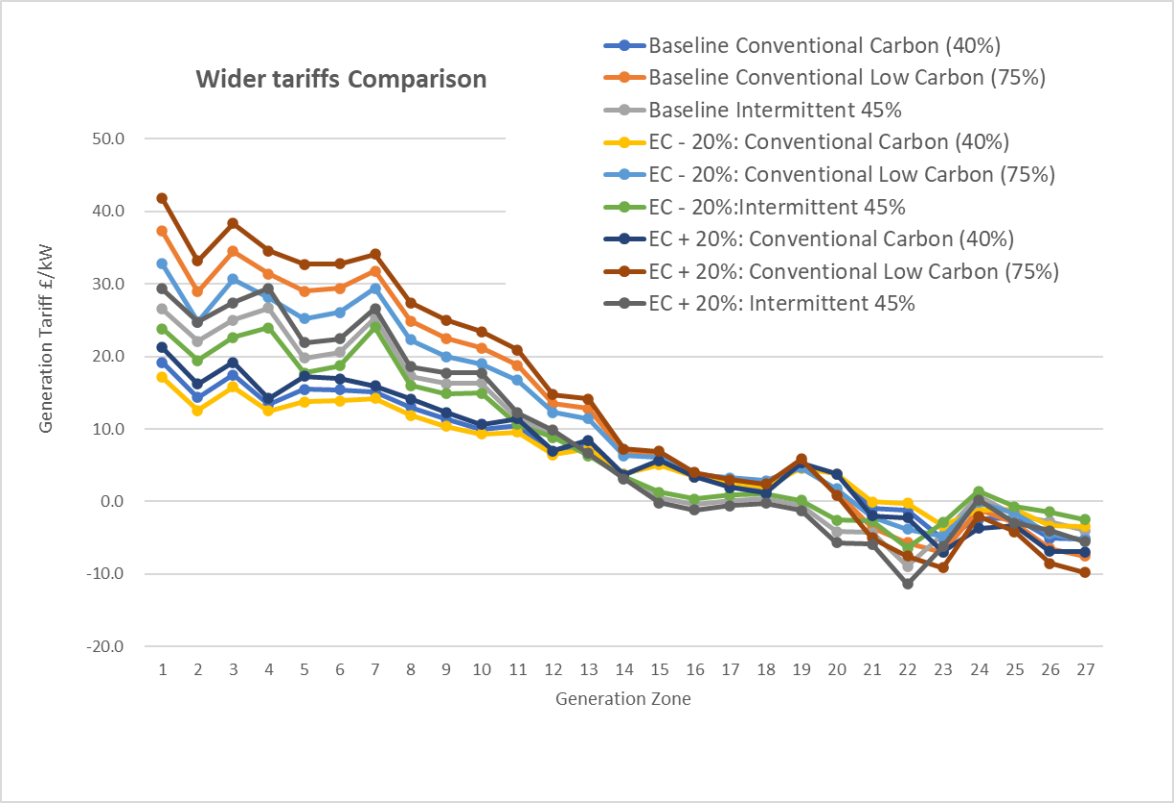
Having consulted customers, we have provided a number of sensitivity scenarios to help customers to understand the potential implications of changes to parameters that affect TNUoS Tariffs.

The sensitivity analysis that we undertook for 2023/24-2027/28 tariffs include:

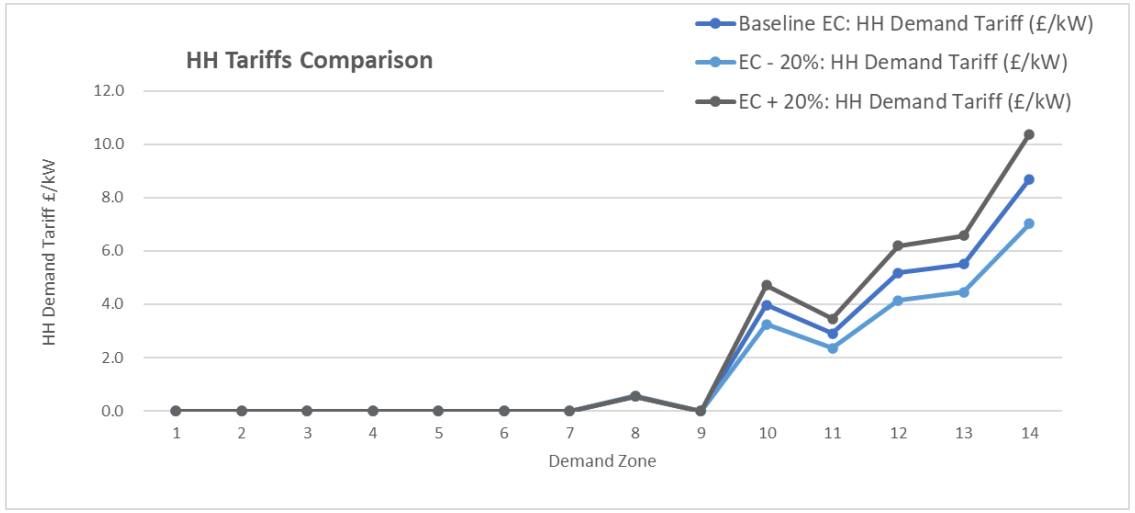
- A scenario which tests the impact of variation in the Expansion Constant for 2023/24
- A scenario which tests the impact of variations in revenue on TDR
- A scenario which tests the impact of additional HVDC Bootstraps (the East Coast HVDC) for 2027/28
- A scenario which tests the impact of links to Scottish Isles becoming part of the wider network for 2027/28

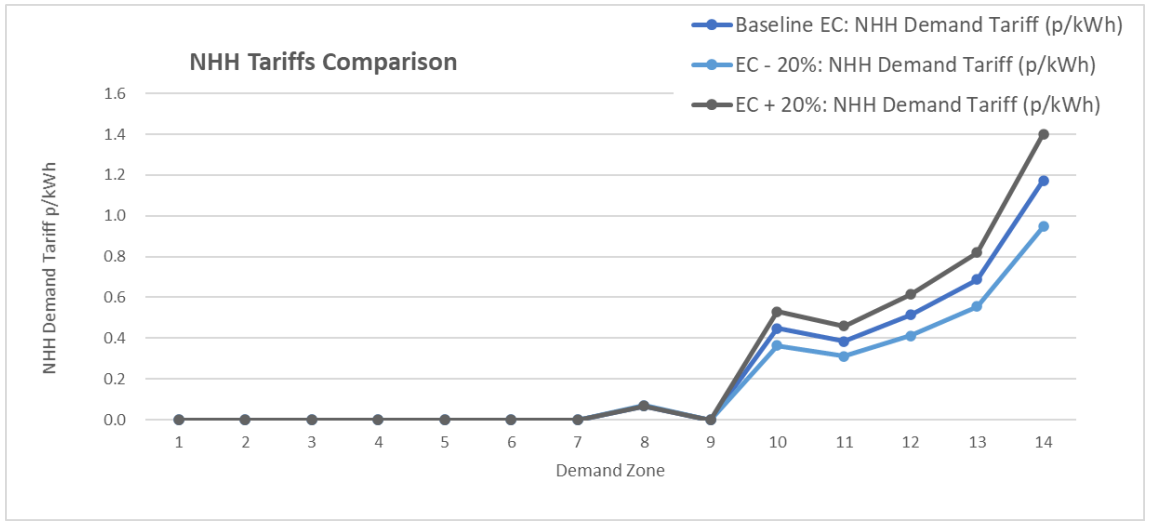
Impact of Variation in the Expansion Constant for 2023/24

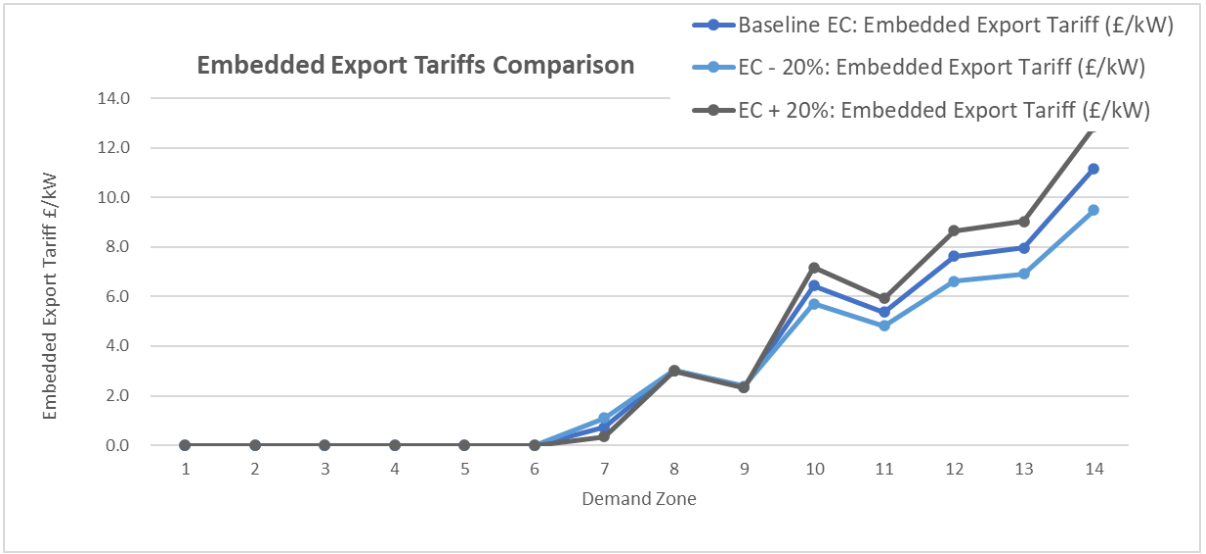
- The charts below show the impact of an increase/decrease of 20% to the Expansion Constant (EC) on indicative tariffs against the 5YV base case.
- The impact of an increase or decrease in expansion constant will have the same effect for each year.
- For each tariff type, it can be seen that an increase/decrease to the EC has the effect of stretching/compressing the tariff. So, in general, the tariff increases or decreases in line with an increase or decrease to the EC. For negative tariffs, an increase to the EC will cause it to go more negative.



Impact of Variation in the Expansion Constant for 2023/24



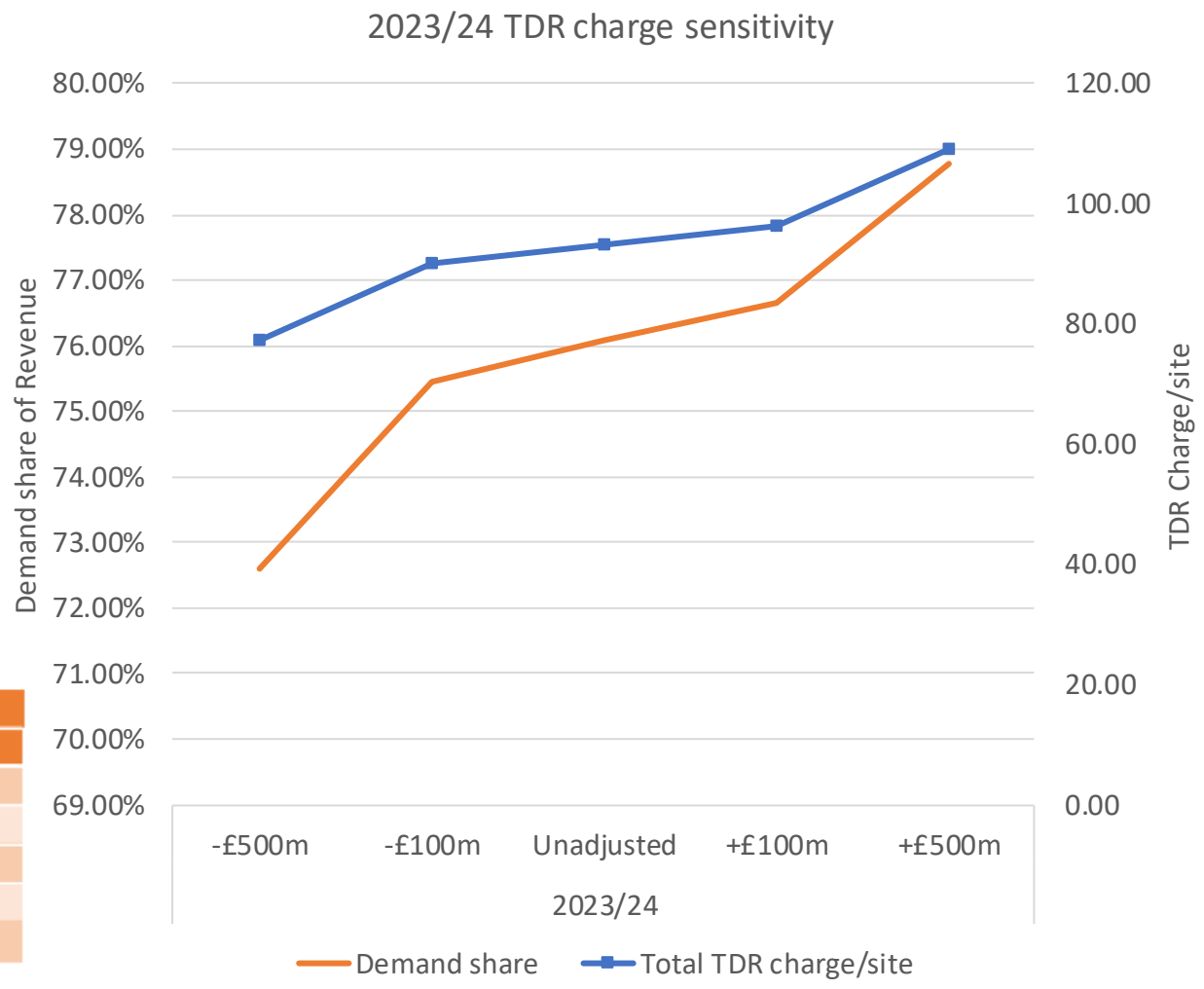




Impact of additional revenue on TDR

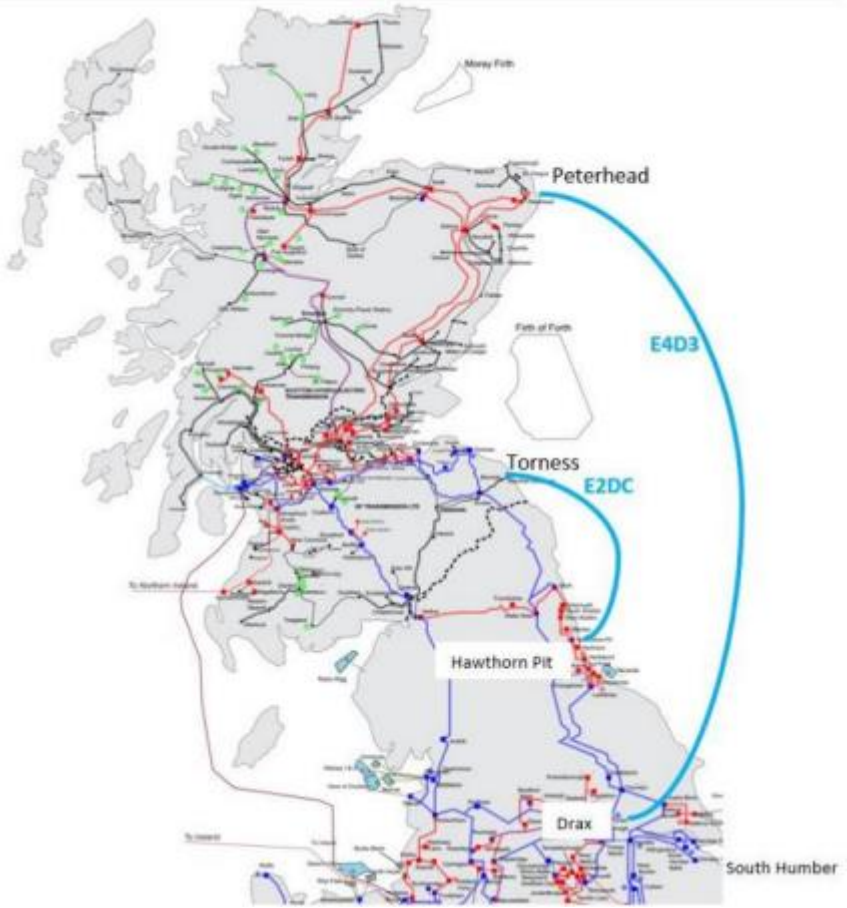
- Impact of revenue change is proportional across the years so focus has been on 2023/24 as a representation of behaviour for the full 5 years
- Assumes revenue increase stems from onshore TO or pass-through items alone rather than offshore
- Model run 5 times with £1b variation
- For every additional £100m, TDR £/site will increase by 3.4%
- For every reduction of £100m this equates to a 4.1% decrease

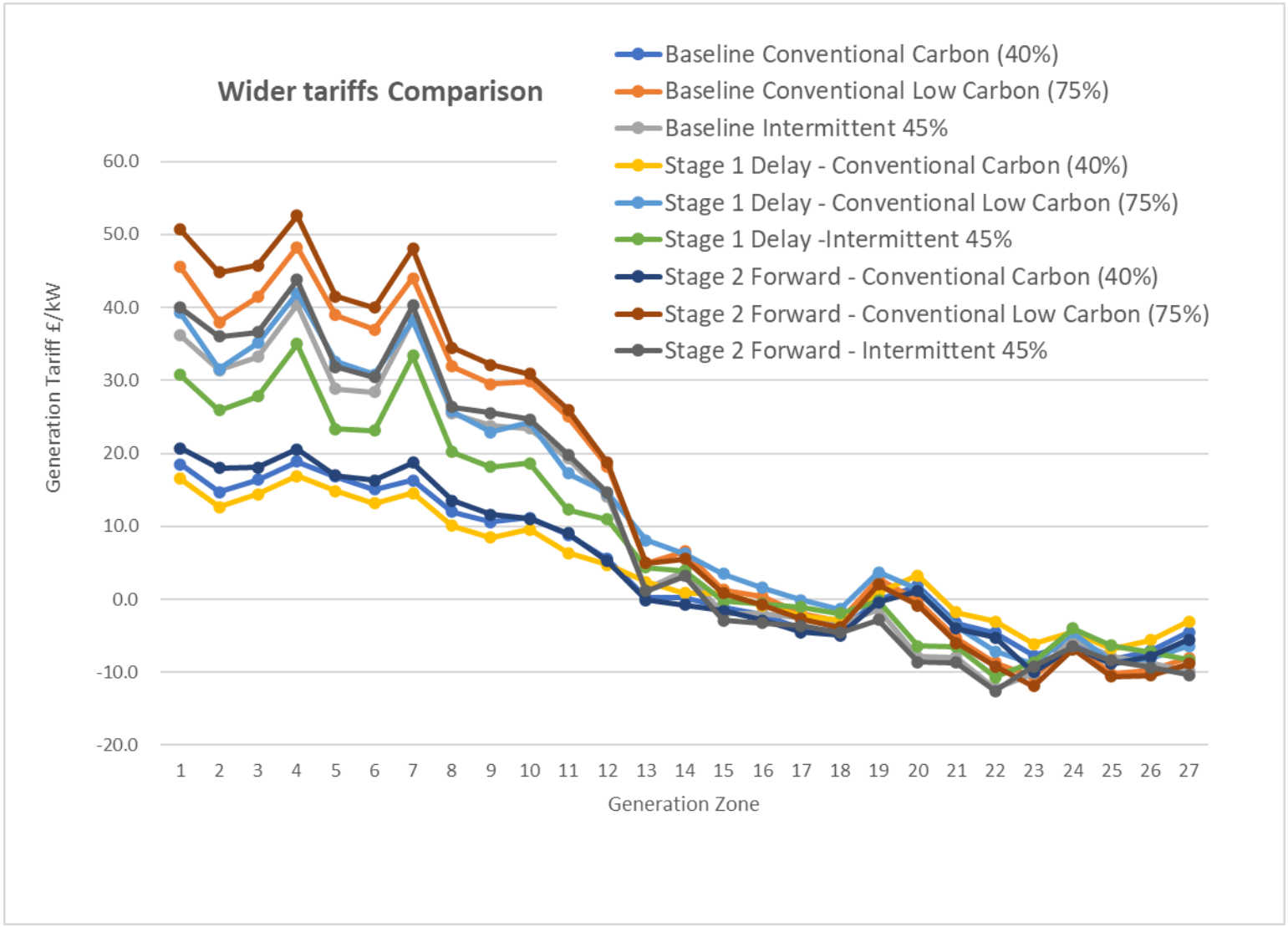
	2023/24				
	-£500m	-£100m	Unadjusted	+£100m	+£500m
Revenue (£m)	3,447	3,847	**3,947**	4,047	4,447
Generation Share	10.38%	9.30%	**9.07%**	8.84%	8.05%
Demand Share	72.61%	75.46%	**76.08%**	76.67%	78.77%
Connection Exclusion	17.01%	15.24%	**14.86%**	14.49%	13.18%
Total TDR charge/site	**£76.32**	**£88.91**	**£92.05**	**£95.20**	**£107.79**



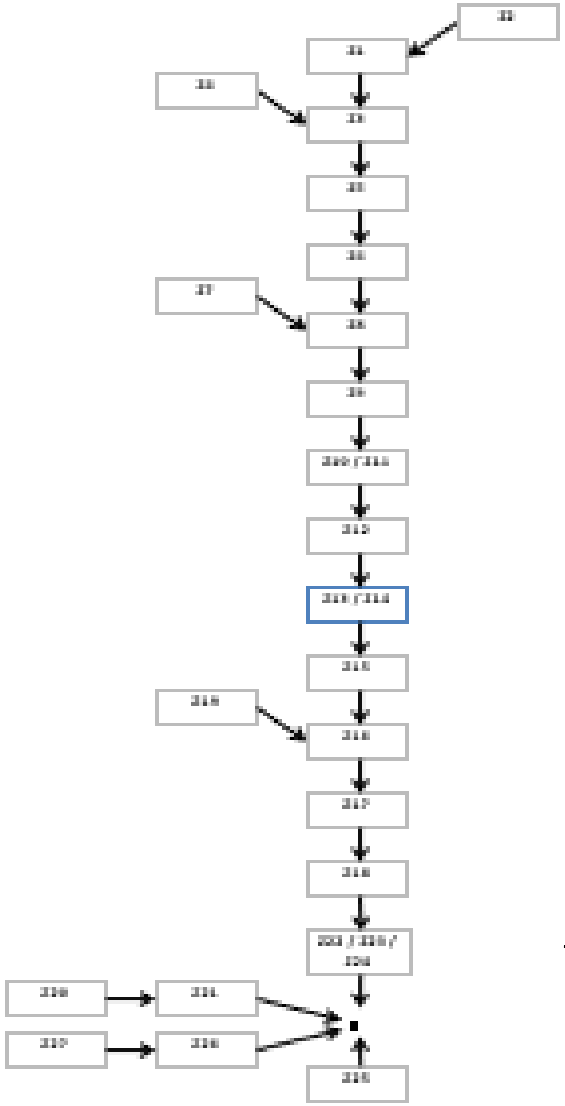
Impact of additional HVDC Bootstraps for 2027/28

- Baseline: E2DC only
- Stage 1 delay: neither E2DC nor E4D3 is built
- Stage 2 forward: both E2DC and E4D3 are built





Impact of links to Scottish Highlands becoming part of the wider network for 2027/28



- Baseline: Shetland link and Western Isle link are both “local” circuits
- Sensitivity: both links are part of the “wider” network, and are included in the calculation of wider tariffs

Generation Zones		2027/28 Baseline				2027/28 Sensitivity (with island links become part of the wider network)			
Zone	Zone Name	Peak Security (£/kW)	Year Round Shared (£/kW)	Year Round Not Shared (£/kW)	Adjustment (£/kW)	Peak Security (£/kW)	Year Round Shared (£/kW)	Year Round Not Shared (£/kW)	Adjustment (£/kW)
1	North Scotland	1.442833	26.358306	29.655854	- 5.330796	1.442833	30.342647	33.514767	- 5.658346
2	East Aberdeenshire	1.836816	15.738383	29.655854	- 5.330796	1.836816	11.864903	33.514767	- 5.658346

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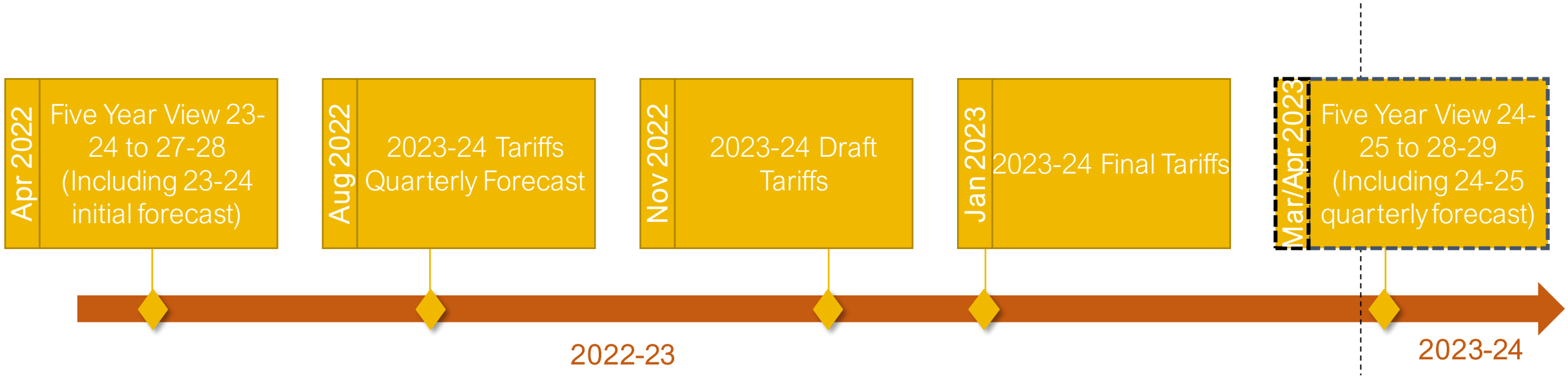
Next Steps

Nick Everitt

Tariff Timetable



- The next publication will be the quarterly forecast of tariffs for 2023/24 which will be published in August 2022.
- We may review this forecast timetable depending on impact of the Judicial Review. We will engage with you on any changes required.

Getting involved

Transmission Charging Methodology Forum (TCMF)

- We will continue to engage with you on our TNUoS forecast via the monthly TCMF meetings.
- Interested? Further details can be found on the NGESO website

Charging Future Forum

- One place to learn, contribute and shape the reform of GB's electricity network access and charging arrangements
- Interested? Further information can be found on the Charging Futures Website or sign up to receive more information here.

Transport and Tariff Model Training

- We plan on running more Transport and Tariff Model training sessions, which will be scheduled soon.
- Please provide suggestions and register your interest via TNUoS.queries@nationalgrideso.com

If you're not already subscribed to our mailing list you can subscribe here

Q&A

Q&A results will be published in a separate document on ESO website

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