Revenue & Charging Forum 2024

17th September 2024

ESO

Recordings available below by following the links

1. Overview & Website Tour → Here
2. TNUoS Tariff Setting → Here
3. TNUoS Billing → Here
4. AAHEDC → Here
5. Connections Charging → Here
6. BSUoS Tariffs → Here
7. BSUoS Billing → Here
8. STAR → Here
9. Q&A and Wrap Up → Here

Q&A document → Here

Welcome!

Nick George

ESO Revenue Manager - Billing and Charging

Questions and Feedback

We'll be using slido throughout the day to gather your questions

Join at:

slido.com

#Revenue

Today's agenda

Welcome and introduction to the day	09:30 – 09:40
Walkthrough of website	09:40 – 09:50
TNUoS Tariffs	09:50 – 11:00
Break	*11:00 – 11:20*
TNUoS Billing	11:20 – 12:00
AAHEDC	12:00 – 12:10
Connection charging	12:10 – 12:30
Lunch	*12:30 – 13:20*
BSUoS Tariffs	13:20 – 13:50
BSUoS Billing	13:50 – 14:15
STAR billing system update	14:15 – 14:30
Wrap Up / Q&A / 121 Support	14:30 – 15:00

Q&A: Slido.com → #Revenue

Meet the Revenue Team

Nick George
Revenue Manager – Charging and Billing

Ishtyaq Hussain
TNUoS Billing Lead

Graeme Hickman
BSUoS Billing Lead

Sharmila Balendren
Connections Charging Lead

Arun Vijay
TNUoS Billing Analyst

Simon Lodoiska
BSUoS Billing Analyst

John Beezley
Connections Charging Analyst

Matt Marriott
TNUoS Billing Analyst

Jheaunelle Thomas
TNUoS Billing Analyst

Rama Kodukula
Compliance Analyst

Nick Everitt
Revenue Manager - Tariff Setting & Change Management

Sarah Chleboun
Senior Revenue & Charging Analyst

Dan Hickman
Senior Revenue & Charging Analyst

Katie Clark
Senior Revenue & Charging Analyst

Alan Fradley
Revenue & Tariff Analyst

Nicky White
Revenue & Tariff Analyst

Marwah Az-zahra
Revenue & Tariff Analyst

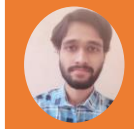
Vacant Position
Revenue & Tariff Analyst

Vacant Position
Revenue & Tariff Analyst

Offshore Team
(Team of 12)

Meet the Revenue Team: Offshore

Vishnu Sudhakar
Team Lead



Chandan Kumar
Senior Analyst

Sushma VC
Analyst

Kusuma Rekha
Analyst

Bhoomika Nagaraj
Analyst

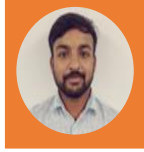
Basavararaj
Analyst

Dhruva Shree
Analyst

Mahendra J
Analyst

Karthik Suresh
Analyst

Swathy PS
Analyst



Mahenth KM
Analyst

Sumathi G
Analyst

BSUoS Billing	Connection Charging and Billing	TNUoS Billing	TNUoS Tariff Setting
Mahenth	Basavaraj	Mahendra	Chandan
Bhoomika	Sushma	Swathy	Karthik
Sumathi	Chandan	Mahenth	Basavaraj
Sushma	Karthik	Sushma	Bhoomika
Mahendra	Kusuma		
	Dhurva		

Our Charges

TNUoS

Transmission Network Use of System Charges
~ £4.2bn TO Revenue *

Connection Charges

Charges for connecting to the transmission network (inc one-off + cap cons)
~ £400m TO Revenue *

AAHEDC Charges

Assistance for Areas with High Electricity Distribution Costs
~ £110m SHEPD Revenue *

BSUoS

Balancing Services Use of System Charges
~ £2.7bn Revenue *

* Forecast for FY24/25, as at Aug 2024

How to Engage with Us

Transmission Charging Methodology Forum (TCMF)

A sub-group Further details can be found on the ESO website

Operational Transparency Forum (OTF)

Useful for information on operational matters, including balancing costs. Details, including a link to receive regular reminders, are available here

Subscribe to our Charging mailing list

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

Note: you will need to confirm you wish to remain on the mailing list when we transition to NESO

Get in touch

tnuos.queries@nationalgrideso.com – TNUoS & AAHEDC queries

bsuos.queries@nationalgrideso.com – BSUoS queries

transmissionconnectioncharging@nationalgrideso.com – Connection Charge queries

box.otcbanking@nationalgrideso.com – Accounts teams (for remittances, payment queries etc)

https://www.nationalgrideso.com/contact-us - contact details for other matters

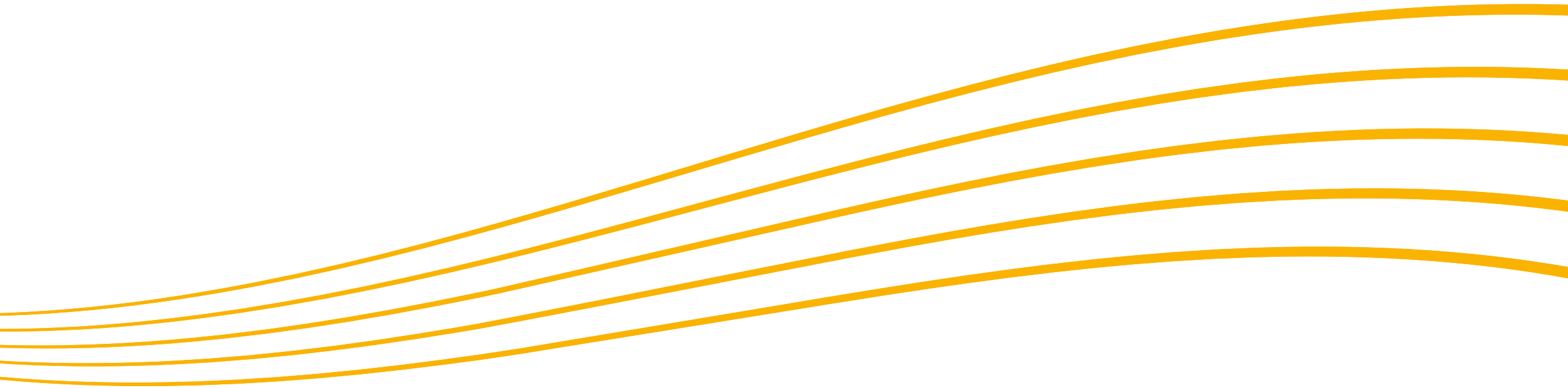
Website Tour

Nick George

ESO Revenue Manager - Billing and Charging

https://www.nationalgrideso.com/

Creation of the National Energy System Operator (NESO)



Creation of NESO

- Electricity and gas network planning to be brought under one roof, as the new independent National Energy System Operator launches to achieve the clean energy transition
- Set to launch on **Tuesday 1 October**
- The publicly owned body will support the UK's energy security, help to keep bills down in the long term and accelerate the government's clean power mission

Key publications to be provided by NESO over the next few years include:

- **Strategic Spatial Energy Plan:** The spatial plan will set out a coordinated approach for Great Britain's onshore and offshore energy infrastructure to help cut grid connection waiting times and provide cost-effective energy generation

- **Future Energy Pathways report:** Future Energy Pathways report: The annual report will advise on how future energy demand and supply could be met by making changes to infrastructure, technology, innovation and consumer behaviour in line with net zero targets.

- **Centralised Strategic Network Plan:** The plan will provide a network blueprint for the country, mapping the demand and optimal locations for offshore and onshore transmission infrastructure to support a decarbonised energy grid.

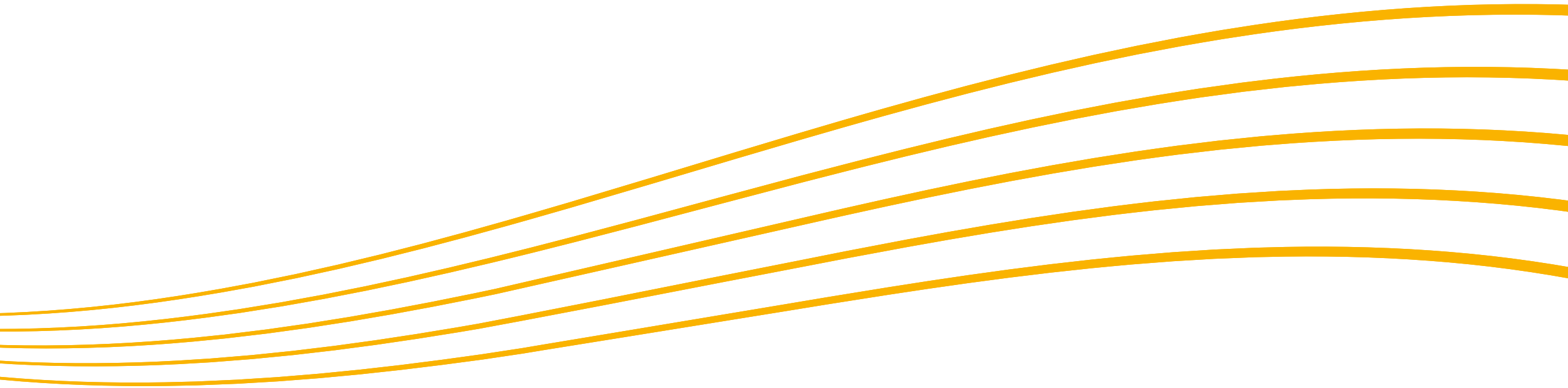
Creation of NESO - Changes to Billing from the

- Same legal entity, same company registration number, but name will change to “National Energy System Operator Limited”.
- VAT number was already changed on 1 July 2024 to GB463544189
- Bank accounts are unchanged. But please check these bank account details are not used in your system for other National Grid group companies (NGED, NGET etc). Any payments received for National Grid group companies will need to be returned, they can’t be forwarded.
- Invoices will show the new company name, logo etc. Change won’t happen until 7 October.
- All e-mail addresses will change to “…@nationalenergyso.com”.
- Invoices will be e-mailed from noreply.revenue@nationalenergyso.com. Add this to your companies safe-sender list.

TNUoS Tariffs Overview

TNUoS Tariff Forecasting & Setting Team

Nick Everitt



Q&A: Slido.com → #Revenue

Revenue Team:
TNUoS Tariff Forecasting & Setting

What is TNUoS and who pays

What is TNUoS?

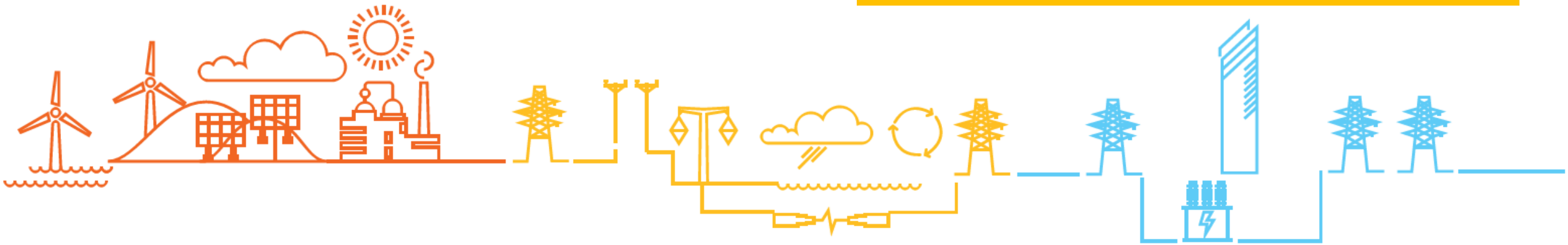
Q&A: Slido.com → #Revenue

TNUoS is the Transmission Network Use of System charge and recovers the allowed revenue for Transmission Owners for the cost of building and maintaining transmission infrastructure.

Locational charge: reflects the incremental cost of power being added to/taken off the system at different geographical points

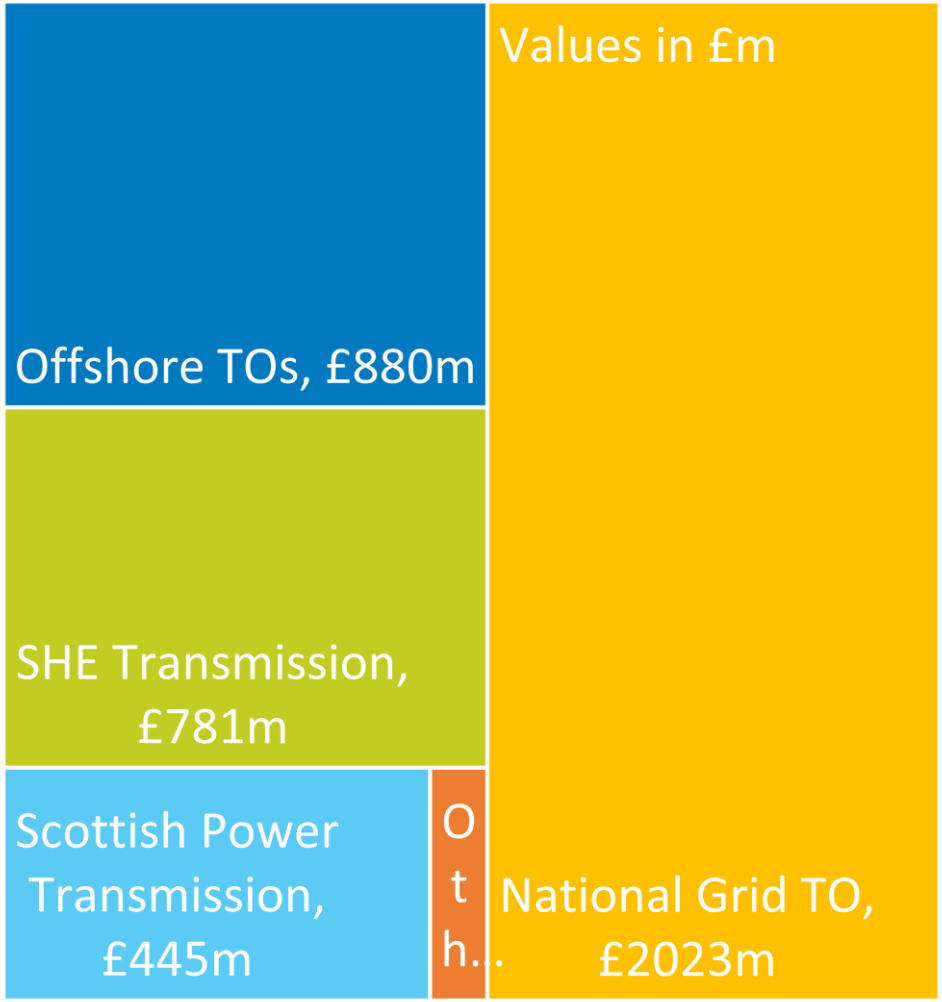
Adjustment charge: used to ensure generation tariffs are compliant with EU legislation.

Residual charge: what is not recovered under the Locational charge is recovered in this charge so that the TO's recover their total allowed revenue



What makes up the TNUoS charge?

Q&A: Slido.com → #Revenue



Figures from Final TNUoS Tariffs for 2024/25
Note: figures have been rounded to the nearest £1m

Recovers revenue for:

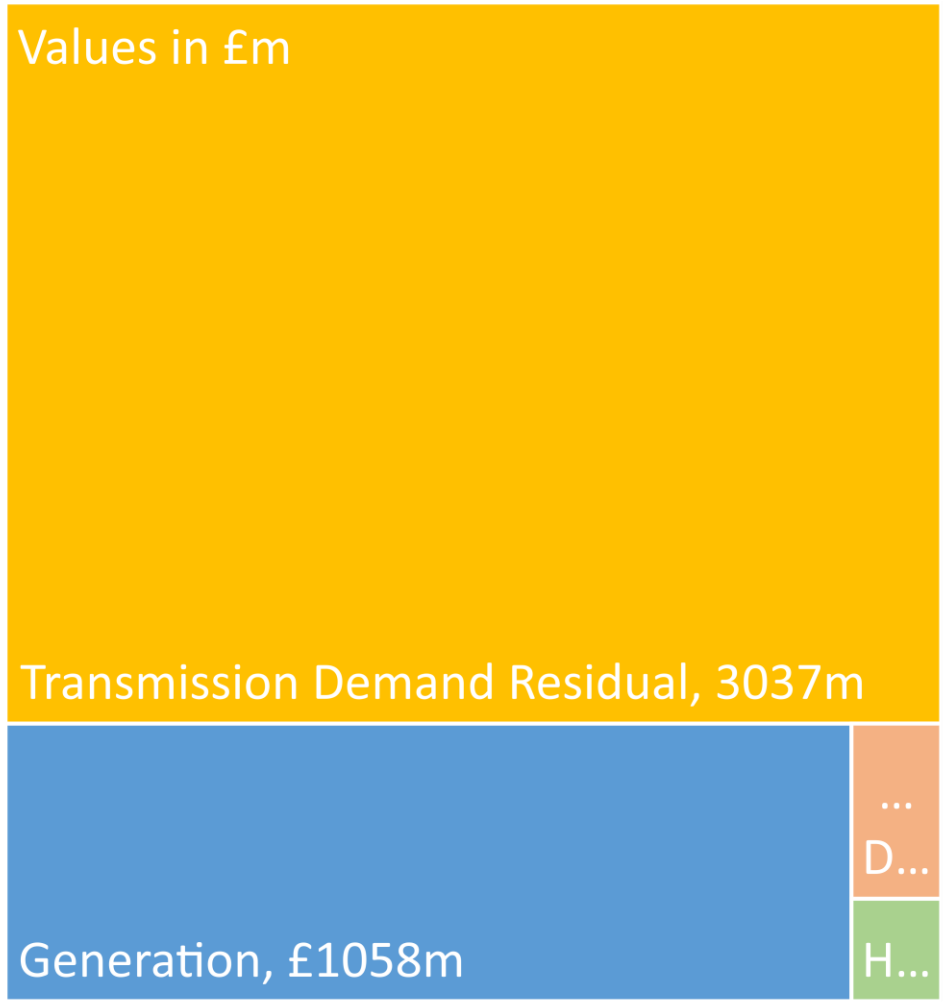
- Onshore TOs
  - National Grid Electricity Transmission
  - Scottish Power Transmission
  - Scottish Hydro Electricity Transmission
- Offshore TOs
- Other

Who pays TNUOS?

Q&A: Slido.com → #Revenue

TNUoS Revenue paid by:

- Total TNUoS Revenue for 2024/25, £4,189m
- Demand Revenue £3,131m
  - HH Demand £41m (Green Box)
  - NHH Demand £71m (Orange Box)
  - Embedded Export -£19m (No Box)
  - Transmission Demand Residual £3,037m
- Generation £1,058m



Figures from Final TNUoS Tariffs for 2024/25
Note: figures have been rounded to the nearest £1m

Who pays TNUoS? - Generators

Q&A: Slido.com → #Revenue

Generators that are directly connected to the transmission network & Embedded generators ≥100MW TEC are chargeable

Generation TNUoS is charged on the basis of Transmission Entry Capacity (TEC)

Generators are also liable for Demand TNUoS if they take net demand during the Triad

Who pays TNUoS? - Demand

Q&A: Slido.com → #Revenue

- All licenced suppliers are liable for TNUoS charges, for their *gross demand* from the transmission network in one of the following 3 categories:

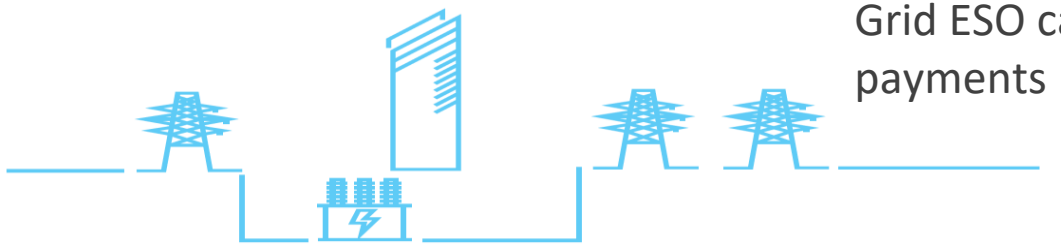
Half-Hourly metered demand on the basis of Triads

Non Half-Hourly demand, total 4pm-7pm annual consumption

Embedded Export credited for export over Triads

Directly Connected Demand

Directly Connected Demand sites pay HH demand charges



Embedded Generation

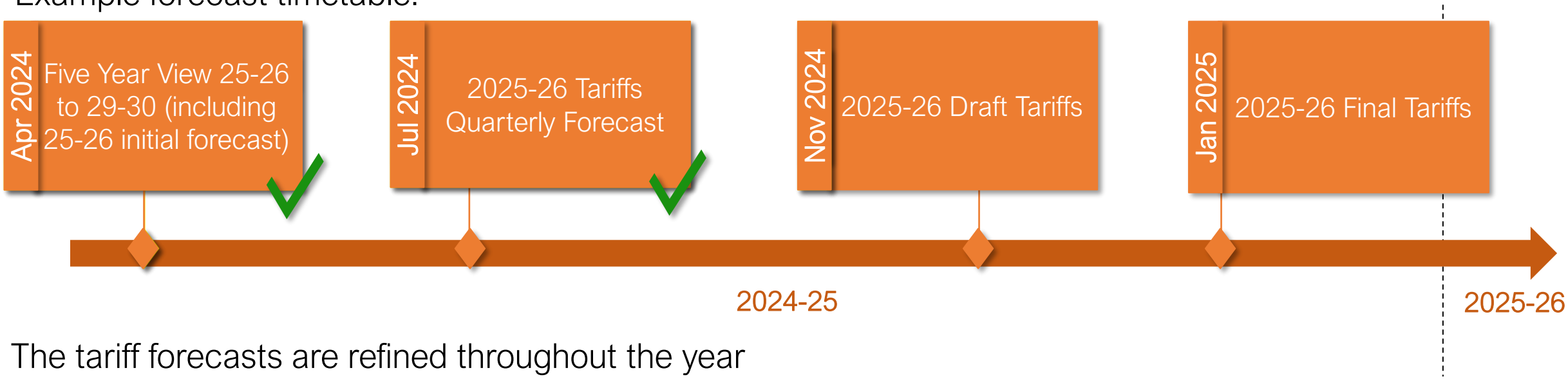
Embedded Generation (<100MW) which contracts directly with National Grid ESO can gain Embedded Export payments

Tariff Timetable

Q&A: Slido.com → #Revenue

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

Example forecast timetable:



- The tariff forecasts are refined throughout the year
- The Final Tariffs are published by 31st January and take effect from the following 1st April.
- The forecast timetable for each year is published by the end of the preceding January.
- All of our tariff publications and webinar recordings can be found on our website: https://www.nationalgrideso.com/industry-information/charging/tnuos-charges

Generation TNUoS

Sarah Chleboun

Generation TNUoS

Generation TNUoS

Generation TNUoS recovers charges from Transmission connected generation and licensable embedded generation

Generation
£1,058m

- Maximum revenue from generation set by Limiting Regulation
- Tariffs include wider and local elements
- Final tariffs are generator specific

Generation TNUoS Tariffs

Q&A: Slido.com → #Revenue

Directly Connected Generators (BCAs) are liable for:

Embedded generators (BEGAs) with TEC ≥ 100MW are liable for:

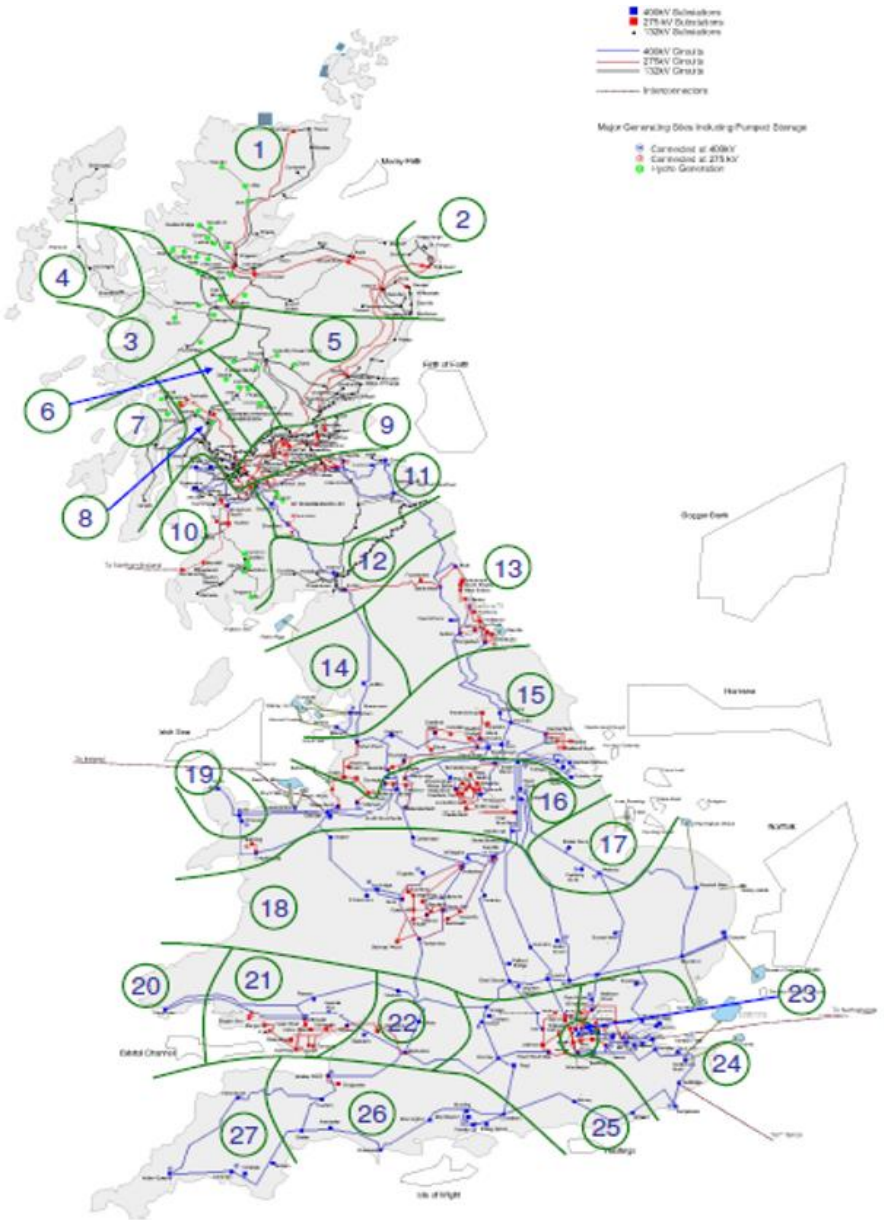
Embedded generators with TEC < 100MW are not liable for generation TNUoS charges but may be paid the Embedded Export Tariff (EET)

Always applies

May (or may not) apply

Generation Wider Tariffs

- Wider tariffs are calculated per zone
- Currently 27 generation zones
- Components apply based on fuel type



Wider Tariff components:

Peak Security	Year Round Shared
Year Round Not Shared	Adjustment

Wider Generation Charging Categories

Q&A: Slido.com → #Revenue

Intermittent e.g. Wind, Tidal, Solar

Wider Tariff = [Annual Load Factor (ALF) × Year Round Shared] + Year Round Not Shared + Adjustment

Conventional Low Carbon, e.g. Nuclear, Hydro (run-of-river)

Wider Tariff = Peak + [ALF × Year Round Shared] + Year Round Not Shared + Adjustment

Conventional Carbon, e.g. Coal, CCGT, Biomass, Pump Storage, Battery

Wider Tariff = Peak + [ALF × Year Round Shared] + [ALF × Year Round Not Shared] + Adjustment

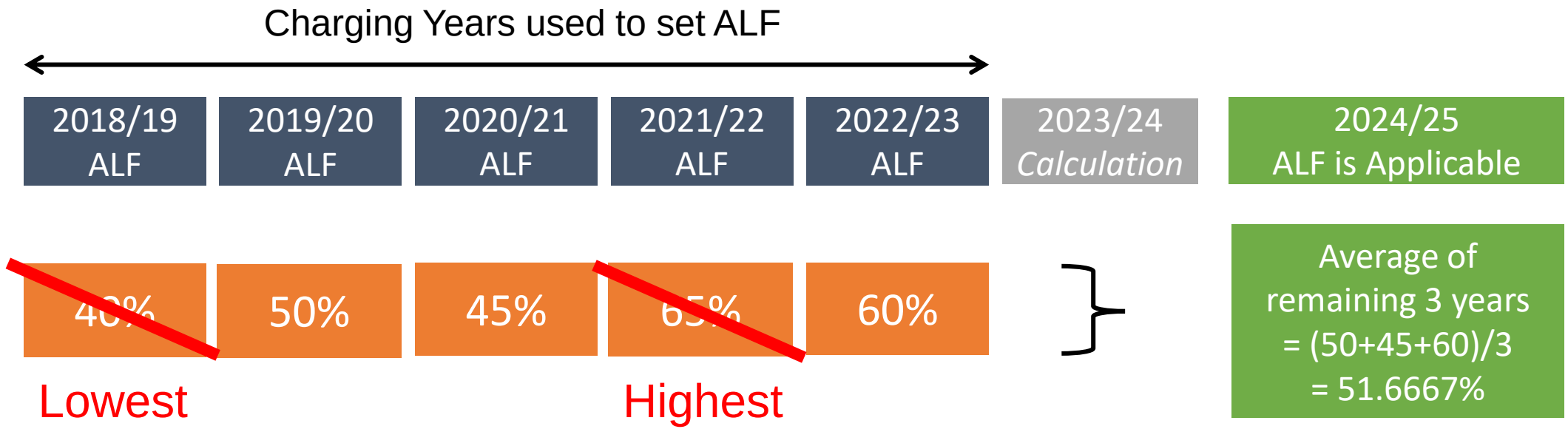
Annual Load Factors (ALFs)

- **ALFs** give a measure (over 5 years) of a generator's output compared to its capacity, using:
  - Higher of Metered Output (MO) and Final Physical Notifications (FPN)
  - Transmission Entry Capacity (TEC)
- **ALFs are calculated at power station level**
  - For a power station with multiple Balancing Mechanism Units (BMU), the BMUs are aggregated before calculating the ALF
- **Co-location** of generating sets of different fuel types **within one power station**
  - Currently, the power station is charged according to the predominant fuel type
  - A guidance document is available on our website
- For each year in the past 5 years (where data is available):

Annual Load Factor for each of 5 years = Sum of Max (MO, FPN) for each settlement period ÷ [Sum of TEC for each settlement period × 0.5]

How to Calculate an ALF…

- **ALFs for 2024/25** are based on data from charging years 2018/19 - 2022/23



- Where a Power Station has less than 5 years data available, then:
  - If 4 years of data – the lowest year is removed
  - If 3 years of data – all 3 years are used, none are removed
  - If < 3 full years of data – we use fuel-specific generic ALFs to complete the 3 years

Local Tariffs

Sarah Chleboun

What are Local TNUoS Tariffs?

Q&A: Slido.com → #Revenue

- Onshore local circuit tariffs may be charged to generators which connect directly to the transmission network if they are not directly connected to the MITS
- Onshore local substation tariffs are charged to generators which connect directly to the transmission network

Onshore Local circuit tariff

Onshore Local substation tariff

- Offshore local tariffs are specific tariffs to cover the cost the OFTO pays for the offshore transmission infrastructure. They are calculated using actual project costs.

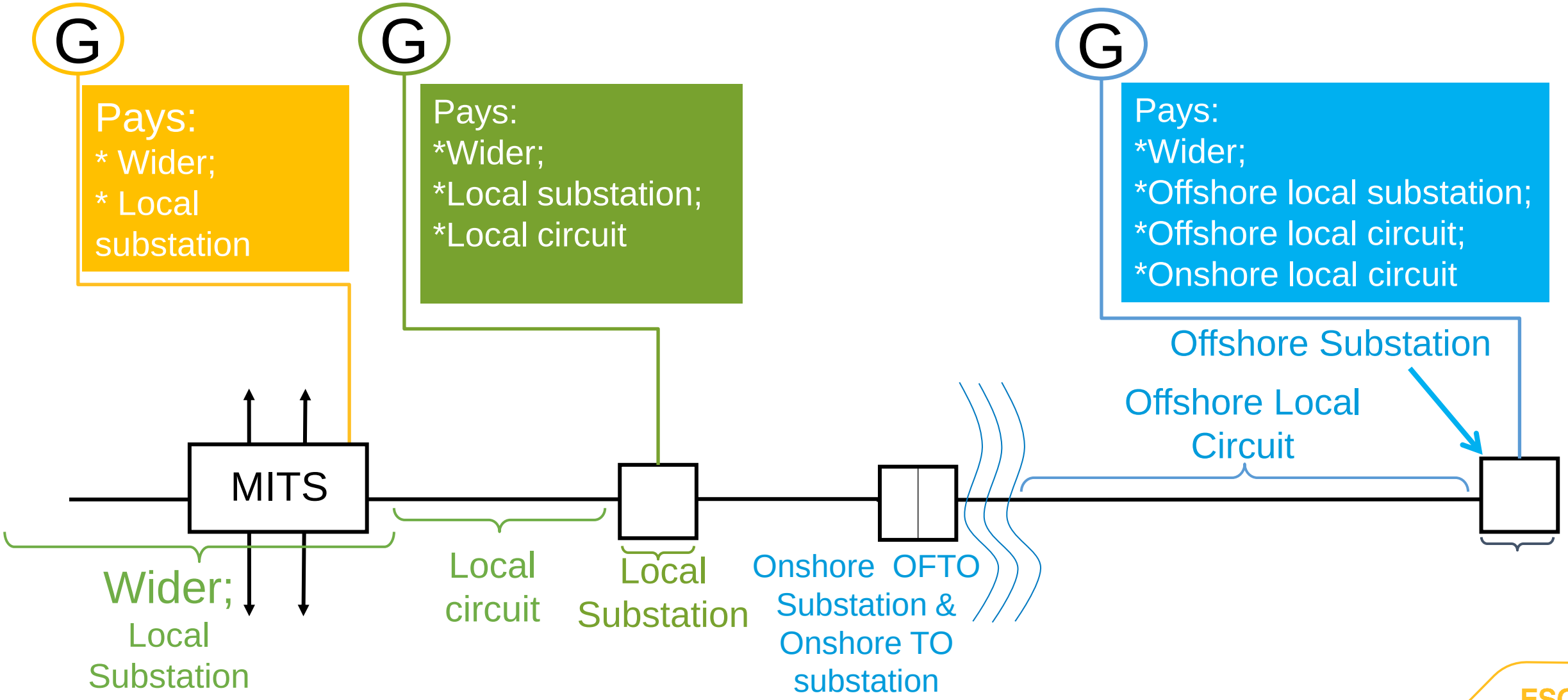
Offshore local circuit tariff

Offshore local substation tariff

ETUoS (if applicable)

Generation Tariffs: Directly connected generators

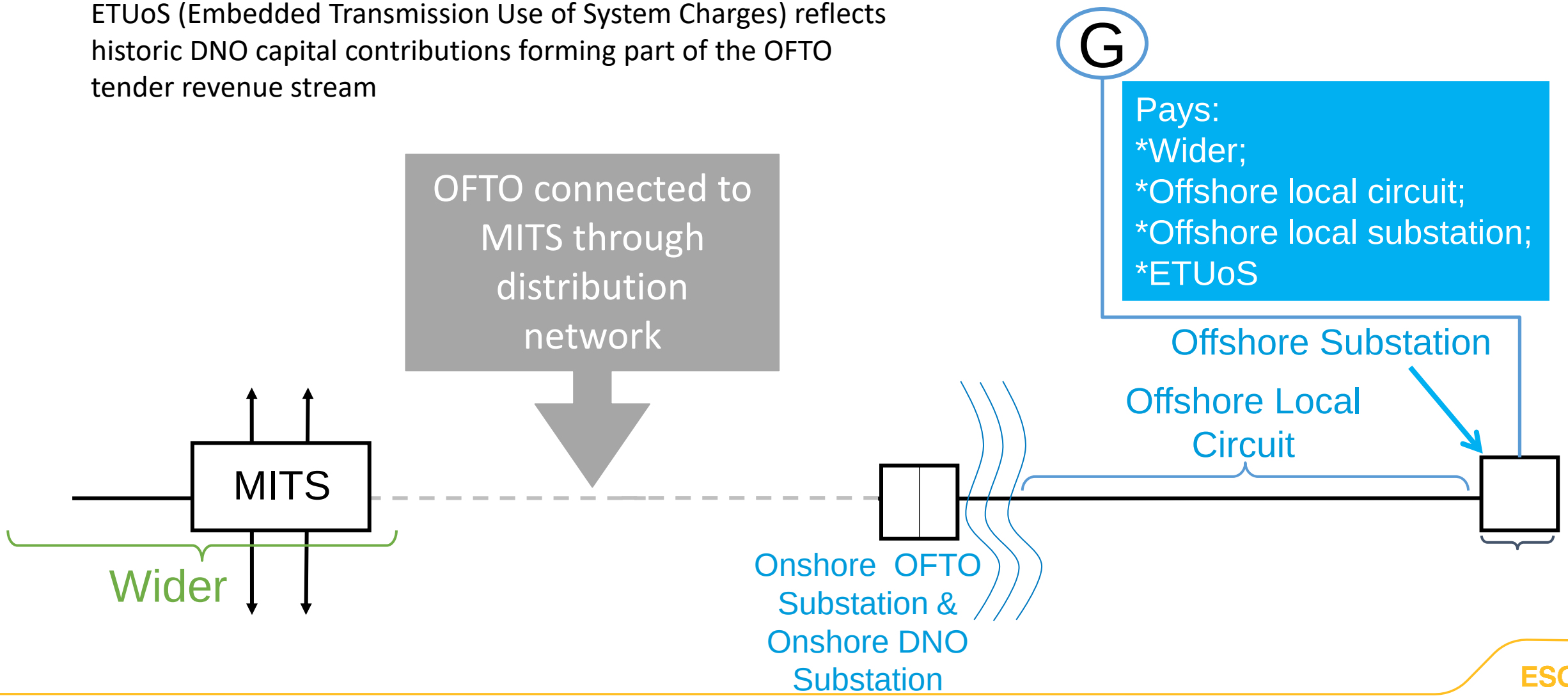
Q&A: Slido.com → #Revenue



Directly connected offshore generators via “embedded” OFTO

Q&A: Slido.com → #Revenue

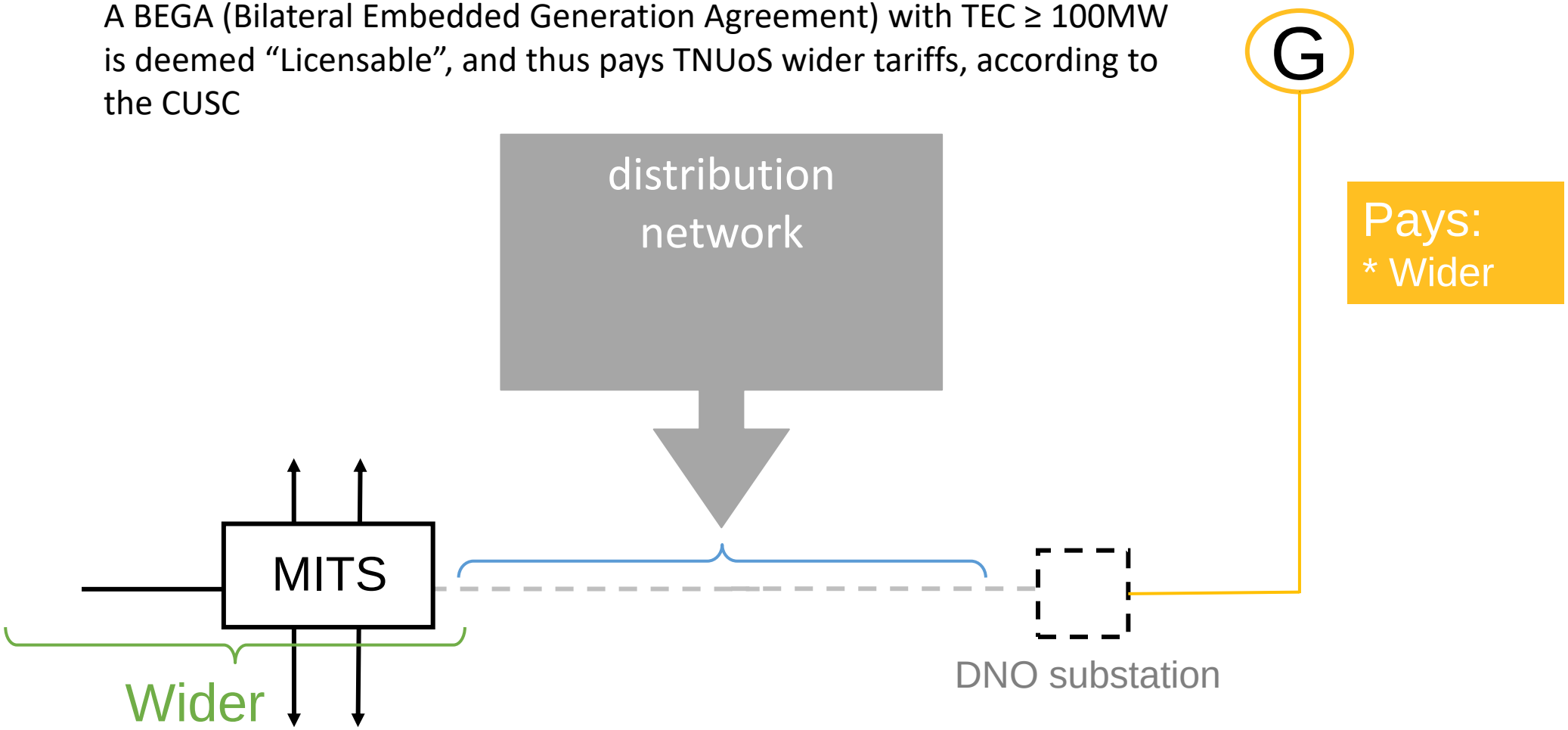
ETUoS (Embedded Transmission Use of System Charges) reflects historic DNO capital contributions forming part of the OFTO tender revenue stream



Embedded generators with TEC ≥100MW

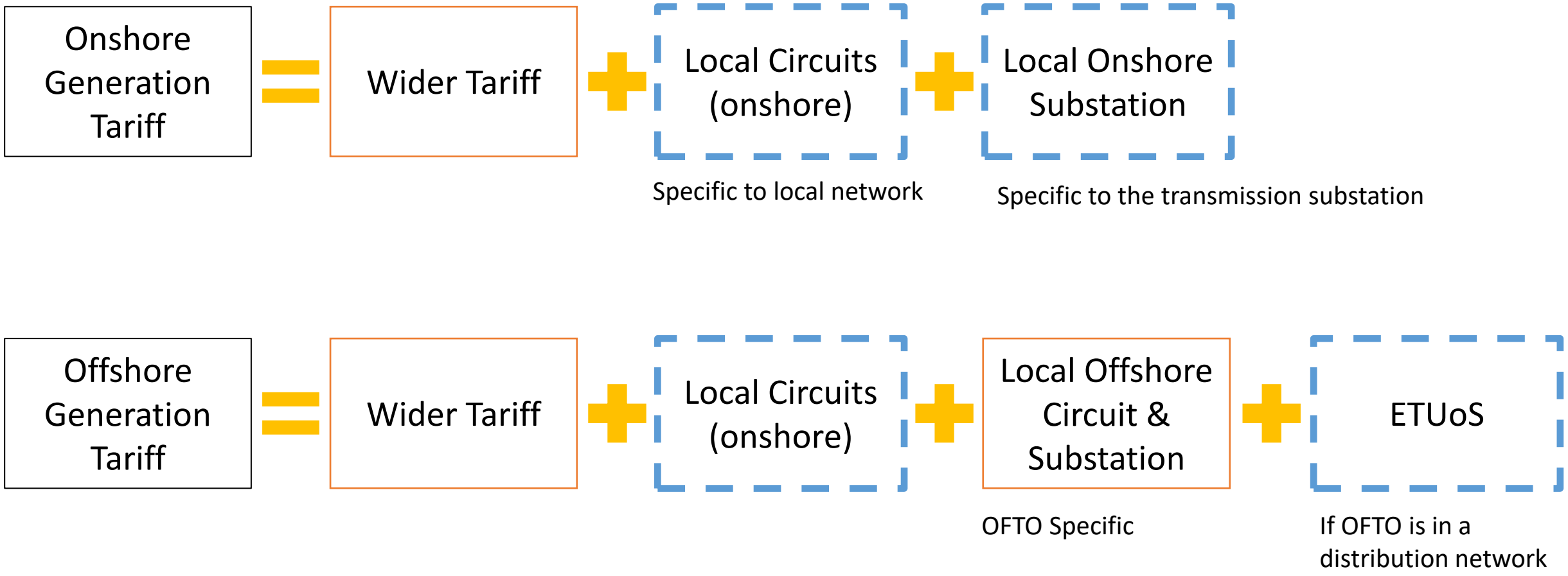
Q&A: Slido.com → #Revenue

A BEGA (Bilateral Embedded Generation Agreement) with TEC ≥ 100MW is deemed “Licensable”, and thus pays TNUoS wider tariffs, according to the CUSC



Summary: Generation Tariff Structure

Q&A: Slido.com → #Revenue



Demand TNUoS

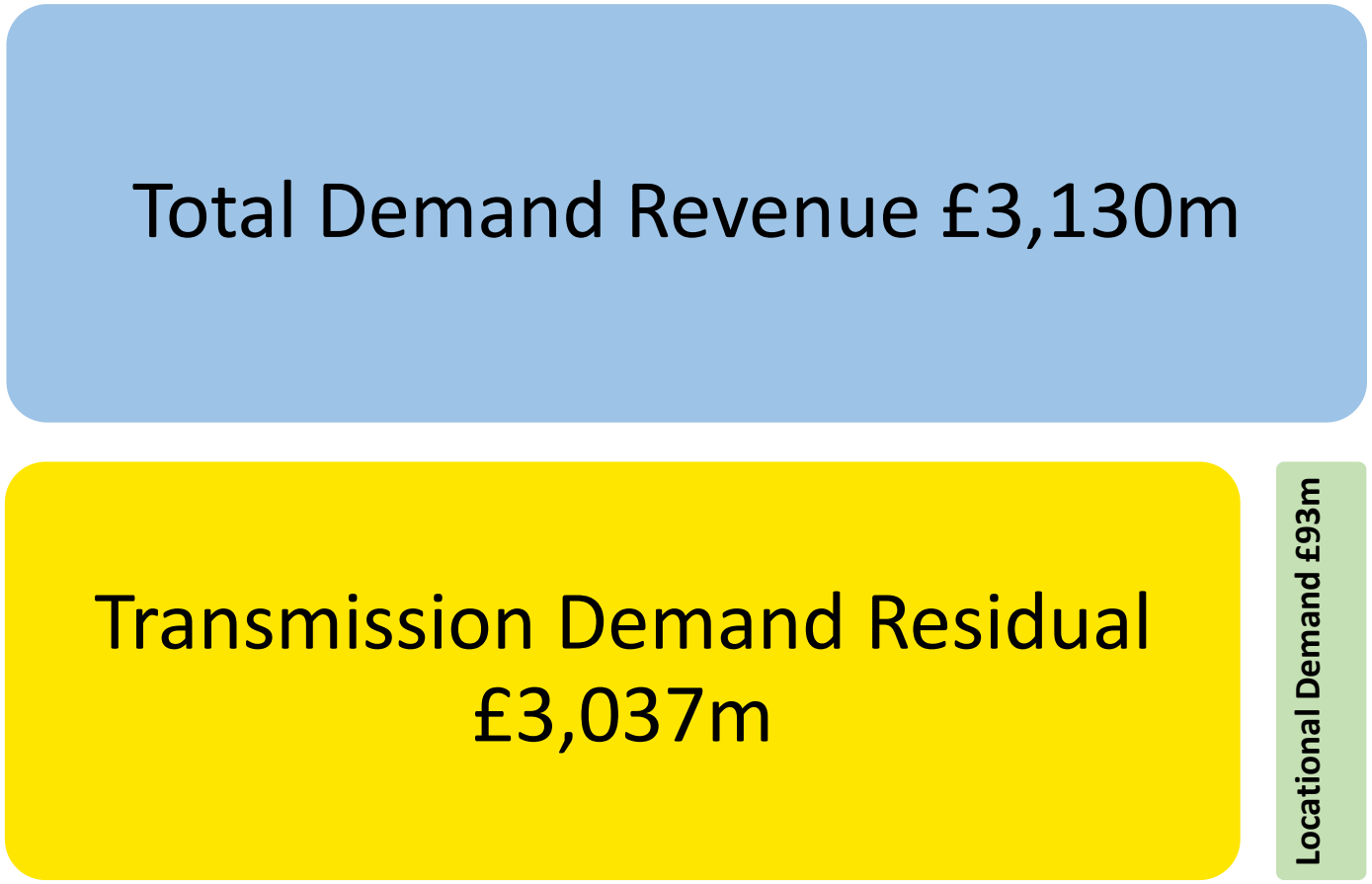
Alan Fradley

Demand TNUoS agenda

1	Introduction
2	Transmission Demand Residual
3	Demand TNUoS Tariffs (HH & NHH)
4	What are Triads
5	Embedded Export Tariffs

Demand TNUoS Breakdown

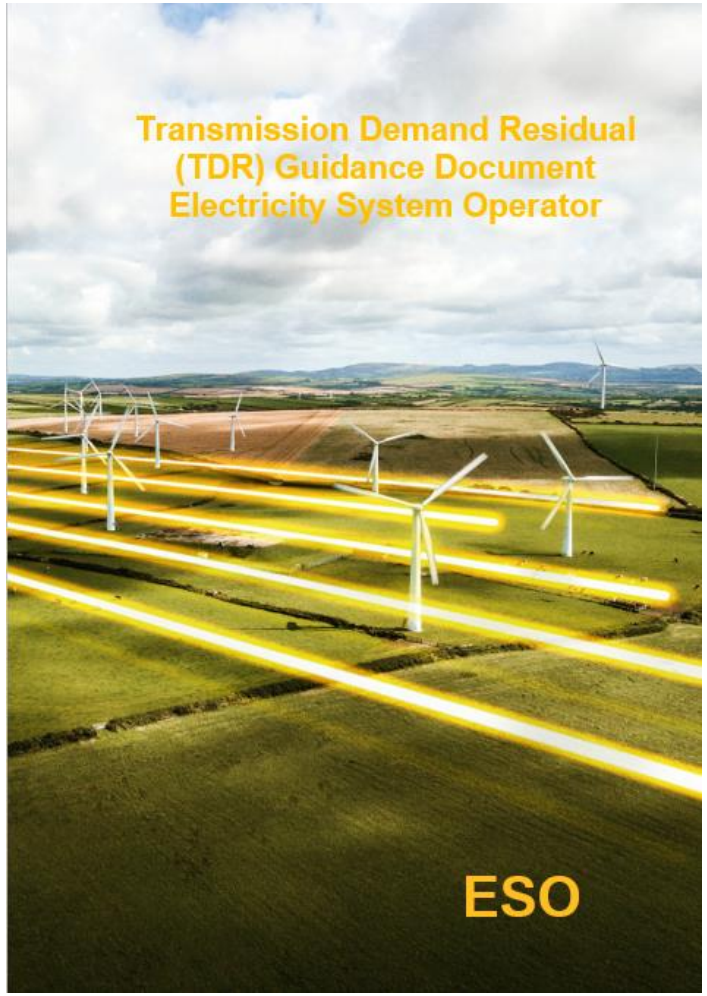
- Of the total TNUoS revenue (£4,188m) to be recovered for 2024/25 tariffs, Demand revenue accounts for £3,130m (74.7%)
- Transmission demand residual £3,037m (97%) makes majority of the demand revenue Charged at £/Site/Day.
- Locational demand £93m (3%) only a small element of overall demand revenue.



Transmission Demand Residual - Background

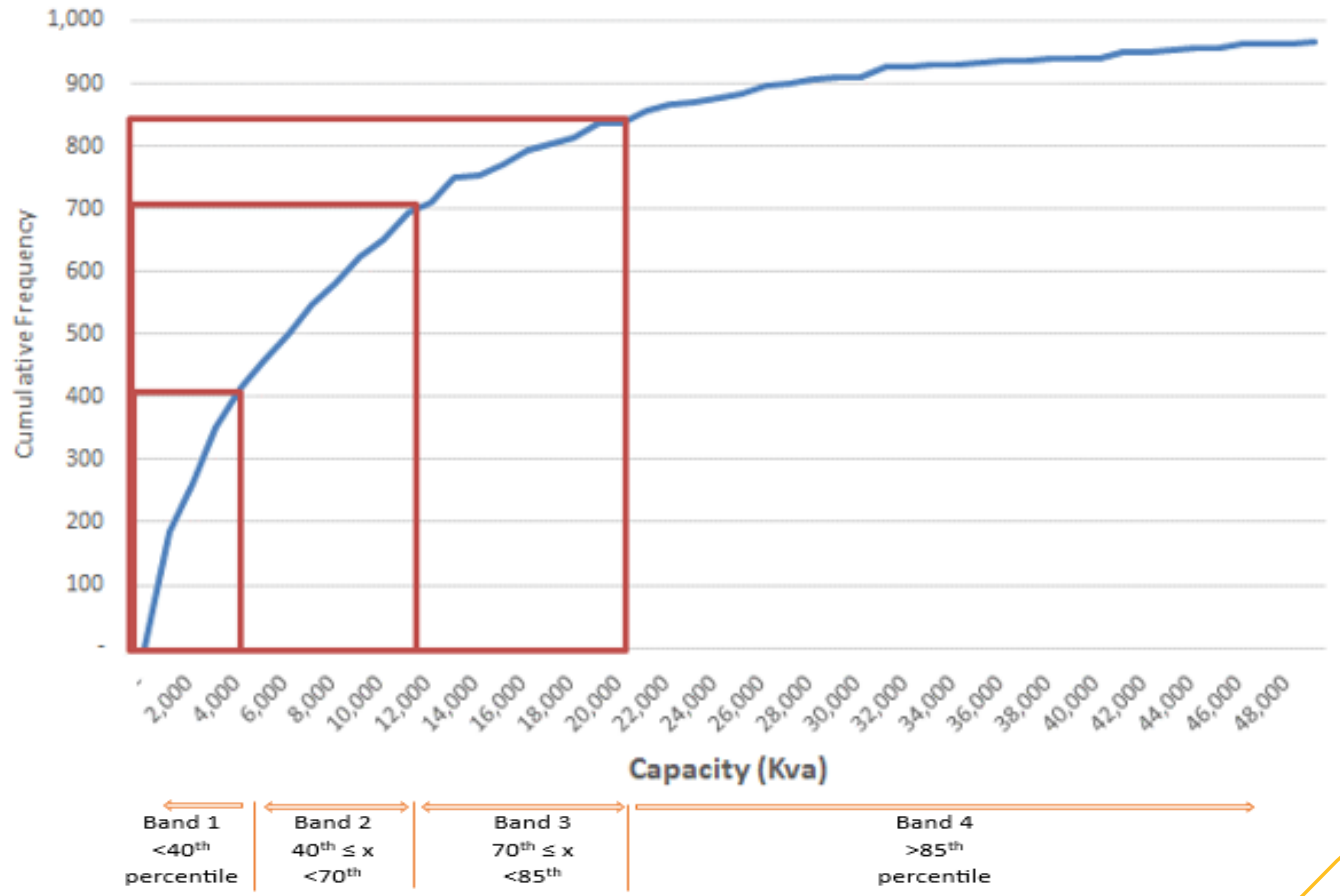
Q&A: Slido.com → #Revenue

- Changes were directed by Ofgem after the Targeted Charging Review (TCR) Significant Code Review (SCR).
- TCR covered a whole range of changes, Transmission Demand Residual (TDR) was only one aspect.
- ‘Banded’ methodology, which results in a £/site/day charge, directed by Ofgem for both DUoS and TNUoS.
- TDR Guidance document can be found on the Charging Guidance page of our website.



How Bands are Created

- The bands are defined in the DCUSA and CUSC by percentiles.
- At the beginning of each TO price control, ESO convert these percentiles in to ‘real’ values. This includes DNO bands too as per our obligations as the ‘Banding Agent’ in DCUSA Schedule 32.
- DNO bands based on Max Import Capacity (MIC) or Consumption (kWh) for sites with no MIC
- All Transmission bands based on Consumption (MWh)
- These bands are the same across TNUoS and DUoS charges
- DNO sites subject to DUoS and TNUoS charges
- Transmission sites only subject to TNUoS



TDR – Calculation of Tariffs

Q&A: Slido.com → #Revenue

2. Work out the consumption and site count per band;

3. Smear the TDR across bands based on proportion of consumption.

Unit Measurement	Band	Percentile	Threshold (kWh/MWh or kVA) Lower (>)	Threshold (kWh/MWh or kVA) Upper (≤)	Consumption (GWh)	Volume Split %	Site Count	Final Tariffs TDR Charge (£/site/Day)
	Domestic				95,232	37%	29,651,304	£ 0.10
kWh	LV_NoMIC_1	≤ 40%	-	3,571	1,912	1%	892,110	£ 0.07
	LV_NoMIC_2	40 - 70%	3,571	12,553	5,244	2%	674,422	£ 0.25
	LV_NoMIC_3	70 - 85%	12,553	25,279	6,169	2%	343,525	£ 0.58
	LV_NoMIC_4	> 85%	25,279	∞	18,119	7%	338,893	£ 1.74
kVA	LV1	≤ 40%	-	80	7,596	3%	79,039	£ 3.13
	LV2	40 - 70%	80	150	11,259	4%	68,868	£ 5.32
	LV3	70 - 85%	150	231	7,046	3%	27,033	£ 8.49
	LV4	> 85%	231	∞	19,752	8%	32,495	£ 19.79
	HV1	≤ 40%	-	422	3,983	2%	7,881	£ 16.46
	HV2	40 - 70%	422	1,000	11,647	5%	7,638	£ 49.66
	HV3	70 - 85%	1,000	1,800	9,048	4%	3,092	£ 95.29
	HV4	> 85%	1,800	∞	25,961	10%	3,470	£ 243.63
	EHV1	≤ 40%	-	5,000	1,851	1%	454	£ 132.85
	EHV2	40 - 70%	5,000	12,000	4,818	2%	235	£ 668.54
	EHV3	70 - 85%	12,000	21,500	5,116	2%	133	£ 1,255.85
	EHV4	> 85%	21,500	∞	14,234	6%	132	£ 3,520.06
MWh	T-Demand1	≤ 40%	-	33,548	366	0%	30	£ 397.07
	T-Demand2	40 - 70%	33,548	73,936	891	0%	18	£ 1,611.51
	T-Demand3	70 - 93%	73,936	189,873	1,614	1%	14	£ 3,754.66
	T-Demand4	> 93%	189,873	∞	1,469	1%	4	£ 11,958.12
Unmetered demand								
	Unmetered p/kWh				2,189	0.86%		1.19

4. Divide the total band recovery (from 3) by the number of sites and days to create a £/site/day tariff.

[2024/25 TB table link here]

1. Work out the total value of the TDR

Total TDR (£m)	3,037

Demand TNUoS Tariffs

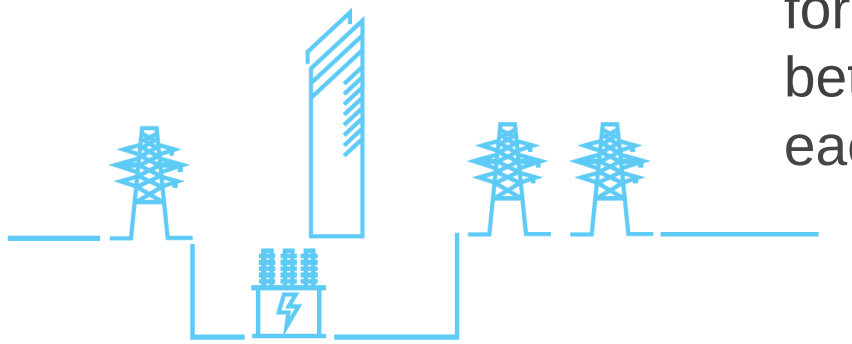
- TNUoS Demand recovered £3.1bn of revenue. This accounted for 75% of total TNUoS revenue of £4.2bn in 2024/25.
- Locational demand revenue £93m (includes -£19m payment for Embedded generation).
- There are two demand tariffs for each of the 14 demand zones

Half-Hourly (HH) Demand (£41m)

Charged a £/kW tariff for average gross demand over the triads

Non Half-Hourly (NHH) Demand (£71m)

Charged a p/kWh tariff for consumption between 4pm and 7pm each day



Demand TNUoS: Locational Tariffs

Q&A: Slido.com → #Revenue

£/kW locational tariff for each zone from the Transport Model

HH Demand Tariff = Demand Locational (£/kW)

£/kW locational tariff from the Transport Model converted to a p/kWh

NHH Demand Tariff (p/kWh) = [Revenue Required per zone − Revenue recovered from Gross HH] ÷ NHH Volume (kWh)

Directly connected sites connected to a GSP supplying more than one DNO will pay the average of tariffs for all the zones connecting to that GSP

Triads – what are they?

Q&A: Slido.com → #Revenue

Three half hour settlement periods of highest GB net demand

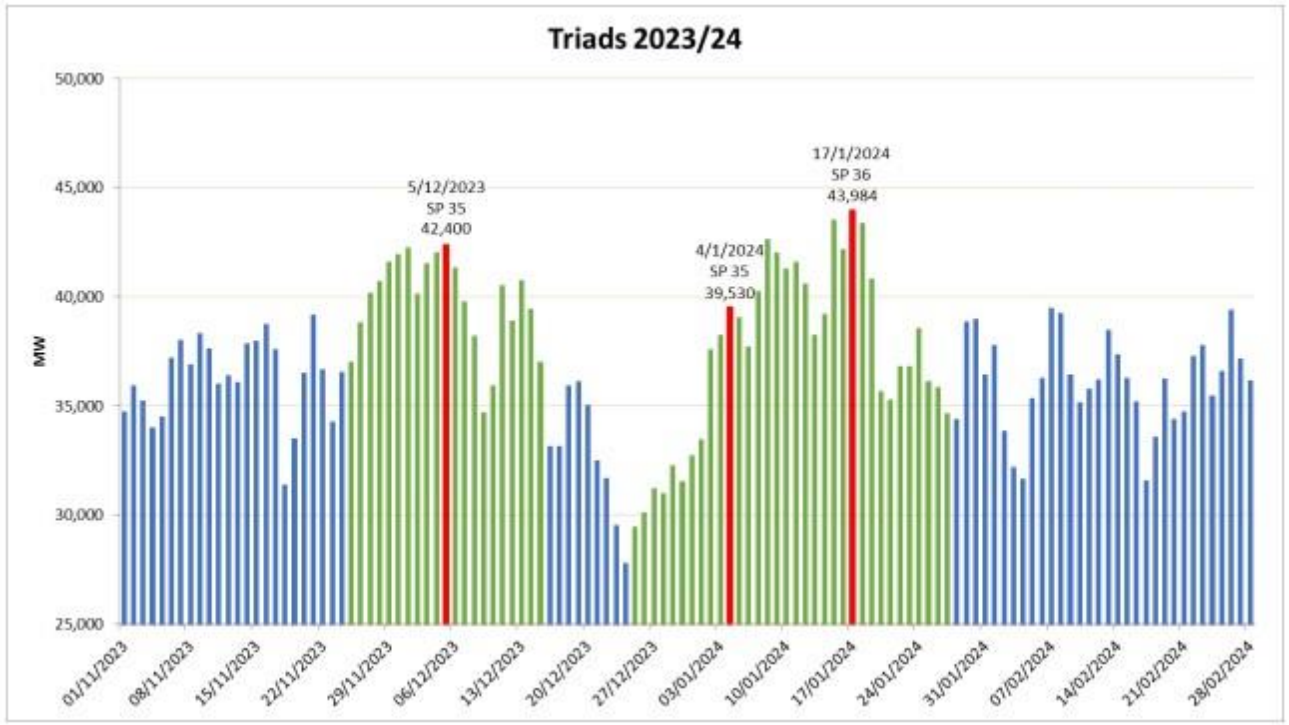
- Separated by a minimum of 10 clear days
- Determined after the event using settlement metering data reported in March
- Impact of Triads has reduced since the implementation of the transmission demand residual methodology

November

February

Triads for Winter 2023/24

Q&A: Slido.com → #Revenue



- The Triads are used to calculate charges for those who are half hourly (HH) metered. This tends to be industrial and commercial customers.
- If they don't consume electricity in the three Triad periods, they don't pay HH TNUoS charges for the entire financial year
- Graph shows the 10-day triad rule been applied to triad dates

Date	Settlement Period	Net System Demand (MW)
17/01/2024	36	43984
05/12/2023	35	42400
04/01/2024	35	39530

- Triads in 2023/24 happened twice on half hourly settlement period 35 (5:30pm) and once on period 36 (6pm). Two Triad periods were reached in January and once in December.

Embedded Export Tariff

- The Embedded Export Tariff is another element of TNUoS
- The EET is paid to customers based on the HH metered export volume during the triads
- This tariff is payable to exporting HH demand customers and embedded generators (<100MW)

Embedded Export (£19m)

Credited a £/kW tariff for average export over the Triads

Embedded Export Tariff

Embedded Export Tariff = **Demand Locational (£/kW)** + **AGIC* (£2.71/kW)**

- Based on the forecast of Embedded Generation output, a total of £19m will be paid to generators in 2024/25.
- This is added to the revenue to be recovered from the locational demand, to ensure overall revenue recovery is correct.

***AGIC = Avoided GSP (Grid Supply Point) Infrastructure Credit, which is indexed by average May to October CPIH each year.**

Potential Future Changes

Nick Everitt

Potential Future Changes

Q&A: Slido.com → #Revenue

Cost Reflectiveness

- CMP315/375 (Review of the expansion constant/ expansion factors)
- CMP316/397 (Co-located generation sites)
- CMP393 (Electricity storage)

Tariff Stability and Predictability

- CMP344 (revenue adjustment)
- CMP413 Rolling 10-year wider TNUoS generation tariffs

Significant Code Review and Future Developments

- TNUoS taskforce (link)
- OTNR (Offshore Transmission Network Review
- HND (Holistic Network Design) (link)
- CSNP (Centralised Strategic Network Plan)
- Net Zero Market Reform
- Ofgem Charging Reform Letter (link)
- Connections Reform
- REMA (Review of Electricity Market Arrangements)

Charging Parameters

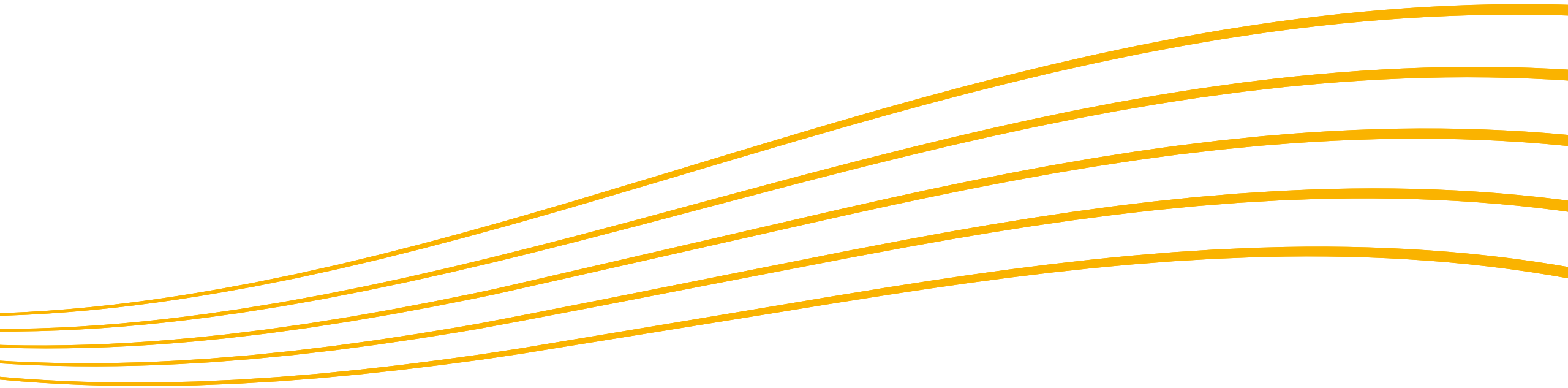
- Price Control – Including key parameters such as Expansion Constant, Expansion Factors, Security Factors, Gen Zones, TDR Threshold consumption banding data etc. RIIO3 Period for ET starts in 2026/27

The CUSC mods listed here are non-exhaustive, and are examples of the relevant group themes, please see the following link for active and past mods :- CUSC Modifications

Q&A

Break

Back at 11.20



TNUoS Charging and Billing

Ishytaq Hussain

Agenda

1	TNUoS charges overview
2	TNUoS charges for generation
3	TNUoS charges for demand
4	Security requirements
5	CMP425 & Market Half Hourly Settlement
6	Q&A

What is the TNUoS charge?

The TNUoS charge is the Transmission Network Use of System charge and recovers the allowed revenue for Transmission Owners for the cost of building and maintaining transmission infrastructure.

TNUoS Charges for Generation

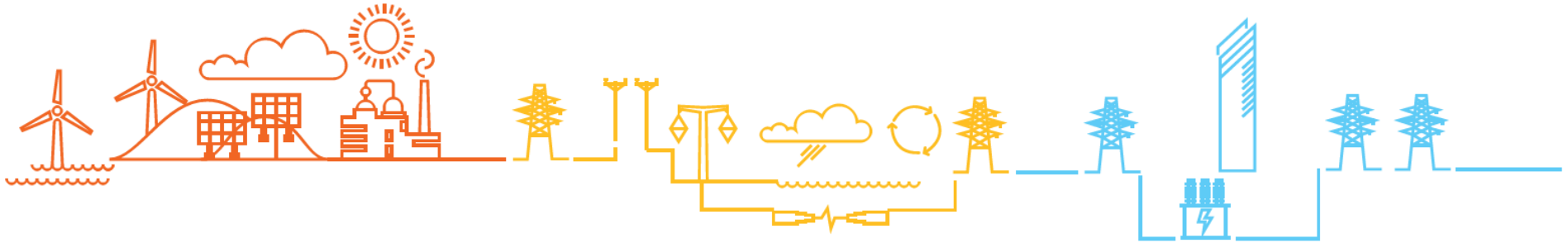
- **Transmission Connected Generation**
- **Large embedded generation (≥100MW)**

TNUoS Charges for Demand

- **Transmission Demand Residual**
- **Half-Hourly metered demand**
- **Non Half-Hourly metered demand**
- **Embedded export benefit**

TNUoS charges are calculated using the Final Tariffs published in the preceding January.

The Final Tariffs for 2024/25 are available on our website.



TNUoS Generation Charging

TNUoS Generation Billing Timeline

Monthly Invoices

Generators are billed on the 1st of every month and invoices are payable by the 15th

Reconciliations

Generation charges are reconciled annually

Generation Reconciliation
(April)

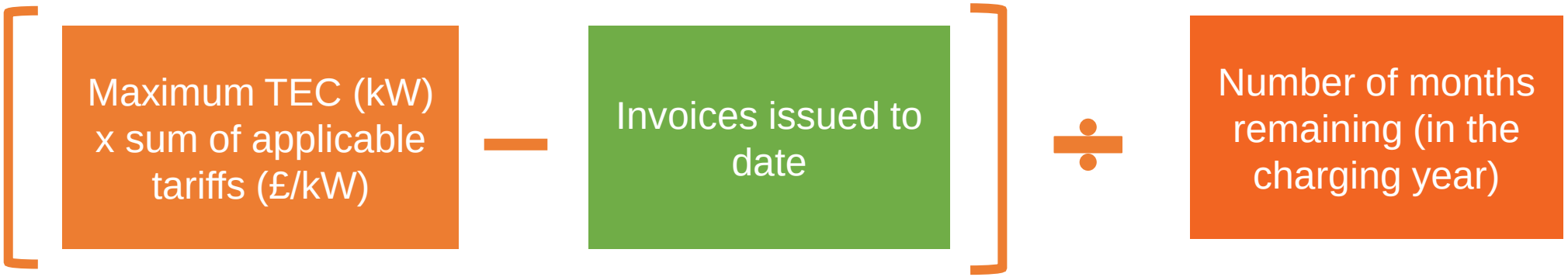
Charging year + 1 month

Generation Charging

Q&A: Slido.com → #Revenue

TNUoS charges are applicable to transmission connected generators and embedded generators with Transmission Entry Capacity (TEC) ≥100MW

Generator monthly invoice



Generation Liabilities

- Generators with positive tariff: based on the maximum amount of TEC effective during the charging year
- Generators with negative tariff: based on the average three highest export during winter season – only corrected in reconciliation against actual metering

Generation Charges - Backing Sheet

Generators receive a backing sheet, along with the monthly invoice, which contain the following details for each station:

- Annual Load Factor
- Plant type
- Generation zone
- Wider tariff and any local circuit and substation tariffs
- Transmission Entry Capacity (TEC)
- Charge calculation
- Invoices issued to date
- Current month invoice value

TNUoS Generation Reconciliation Overview

TNUoS generation reconciliation is issued at end of the April for the previous charging year

Recalculated Liability (1) + Compare Output vs TEC (2) + Calculate Demand (3) − Monthly invoice = Reconciliation Invoice

(1) The liability for each station is recalculated, to ensure all charges have been invoiced correctly

(2) Stations with a negative tariff: the liability is calculated where the peak station output is less than TEC

(3) Stations that take net demand over Triads are charged the half-hourly gross demand tariff

Historical Values

	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
Reconciliation (£m)	24.5	24.6	9.2	42.9	22.1	15.1

TNUoS Ex-Post Reconciliation

Q&A: Slido.com → #Revenue

TNUoS Generation charges should be within a range of €0-2.50/MWh to comply with the Limiting Regulation – “gen cap”.

If charges are outside the range, an **Ex-Post Reconciliation** will take place to ensure compliance with the range. For example:

- Out-turn = €2.75/MWh, indicating too much TNUoS Generation revenue has been recovered,
- Calculate amount, £X, that reduces TNUoS Generation revenue so that out-turn = €2.50/MWh,
- Issue total **credits** of £X to Generators and total **invoices** of £X to Suppliers.

If out-turn is below €0/MWh, the ex-post reconciliation would require an additional amount to be charged Generators, and that same amount to be credited to Suppliers.

TNUoS Demand Charging

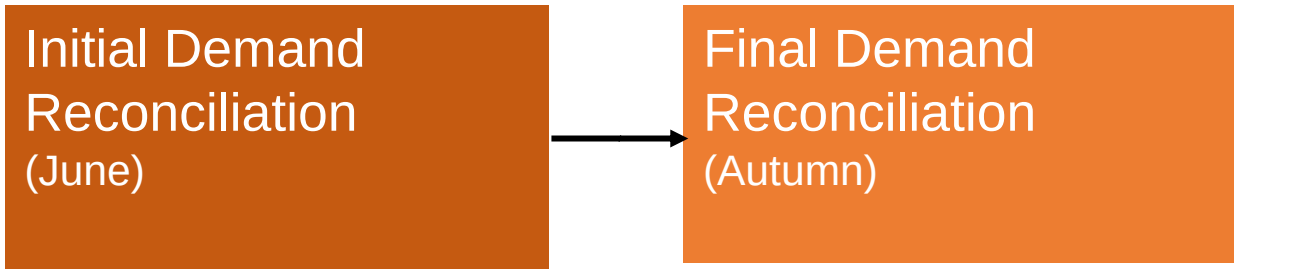
TNUoS Billing Timeline

Monthly Invoices

Suppliers are billed on the 1st of every month and invoices are payable by the 15th

Reconciliations

Demand charges are reconciled twice (Initial / Final metering)



TNUoS Demand Charges – 2024/25

Q&A: Slido.com → #Revenue

The residual is recovered from final demand via the TDR charge:

TDR – Sites, No. of sites

TDR – Unmetered Supplies (UMS), kWh

From 1st Apr 23, HH & NHH charging methodology has recovered **only locational** TNUoS revenue ~3% of demand revenue (embedded generation benefit is unchanged)

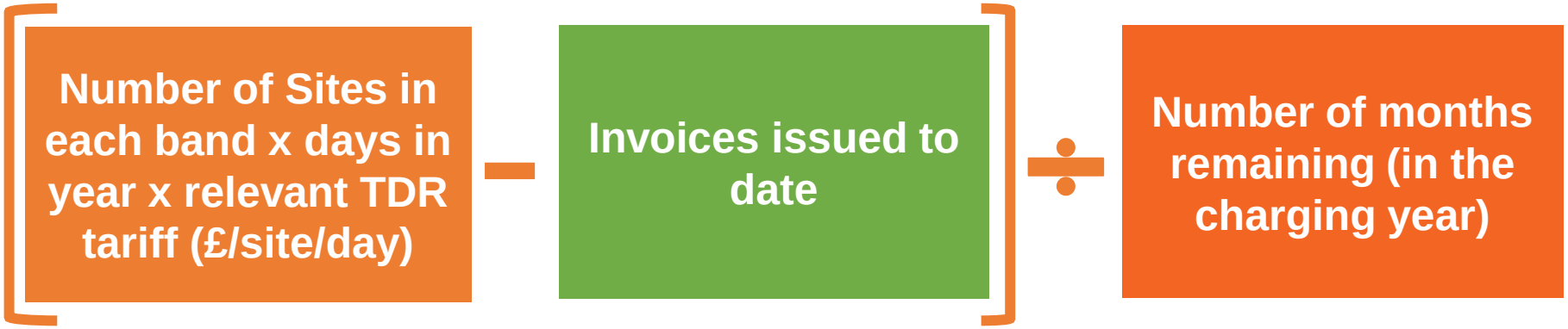
Half-hourly (HH) Gross Demand, kW

Non Half-hourly Consumption, kWh

Transmission Demand Residual - Sites

Within year, Suppliers are charged based on the latest actual site counts in each band, as provided by DNOs/iDNOs, and connection agreements

Supplier monthly invoice



Site Counts by Band

BSC Modification P402 introduced a data flow between the DNOs and ESO to provide the site counts by band and supplier that are needed to bill suppliers. This includes:

- Settlement Date
- Charging Band
- Distribution Network Operator (DNO)
- Supplier Name
- Market Participant Identifier (MPID)
- Run Type
- Grid Supply Point Group
- Site Count

It does not include MPAN level information

Example – Forecast Total Annual Site Count Days (SCD)

- July invoice using April metering data – total SCD is 34 to end April →
- Latest number of sites being supplied, based on the actual data, is **2** (based on actuals for 30th April 2024)
- Therefore, the forecast of total annual SCD is:

34 + (2 per day, for days with no actual data)

= 34 + (2 x (365-30))

= 34 + 670

= 704

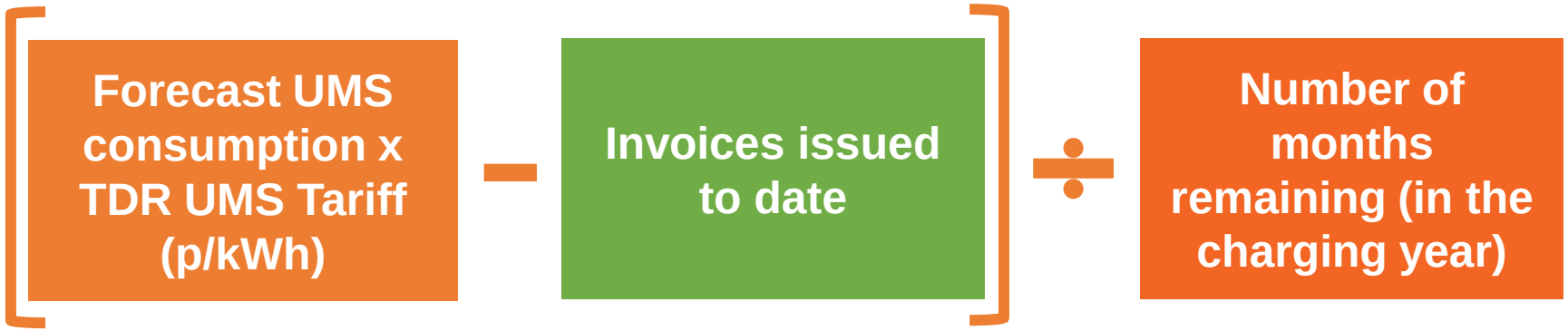
Date	Sites Supplied
01/04/2023	1
02/04/2023	1
03/04/2023	1
04/04/2023	1
05/04/2023	1
…	
…	
25/04/2023	1
26/04/2023	1
27/04/2023	2
28/04/2023	2
29/04/2023	2
30/04/2023	2
Total	34

Transmission Demand Residual - UMS

Q&A: Slido.com → #Revenue

Unmetered Supplies (UMS), within year, Suppliers are charged based on the latest actual consumption (kWh) data provided by the DNO in the P402 report.

Supplier monthly invoice



Transmission Demand Residual – Backing Sheet

Backing sheet shows a summary of annual site count days by charging band, the TNUoS Demand backing sheet now contains registrant ID and DNO level data to help customers understand what their forecast is based on

SCTL1	Total Forecast Annual HH+EE+NHH	Total Annual TDR Liability (£)	Total Forecast Annual Demand Liability (£)	Invoiced To Date Excl VAT (£)	Remaining Annual Forecast Liability (£)	Remaining Months	Current Monthly Invoice Amount Excl VAT (£)														
BSTL1	931.04	6295380.32	6296311.36	1861948.36	4434363	9	492707														
BLANK																					
SCDSO	DNO	ForecastDays	RegistrantID	DOM	EHV1	EHV2	EHV3	EHV4	HV1	HV2	HV3	HV4	LV1	LV2	LV3	LV4	LVN1	LVN2	LVN3	LVN4	UMS
RICBS	EELC	274	TTRE	147	10	0	0	0	0	0	17	0	12	0	0	0	4	0	0	0	1.3728
RICBS	EELC	274	TTRF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	EELC	244	TTRG	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	EMEB	244	IDRA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	EMEB	274	TTRH	5	7	0	0	0	0	0	17	0	14	0	0	0	2	0	0	0	1.6084
RICBS	ETCL	274	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	FEAL	244	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	FORB	244	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	GGEN	244	REDF	11	18	0	0	0	0	0	2	0	5	0	0	0	11	0	0	0	1.6403
RICBS	GUCL	244	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	HARL	244	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	HYDE	244	REDF	31	6	0	0	0	0	0	4	0	18	0	0	0	35	0	0	0	73.471
RICBS	INDI	244	REDF	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	IPNL	244	TTRE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RICBS	LENG	244	TTRE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Transmission Demand Residual – Inaccuracies in the site count data

If you spot something that doesn't look correct in your data, we recommend you first speak to the responsible DNO. Some issues may be:

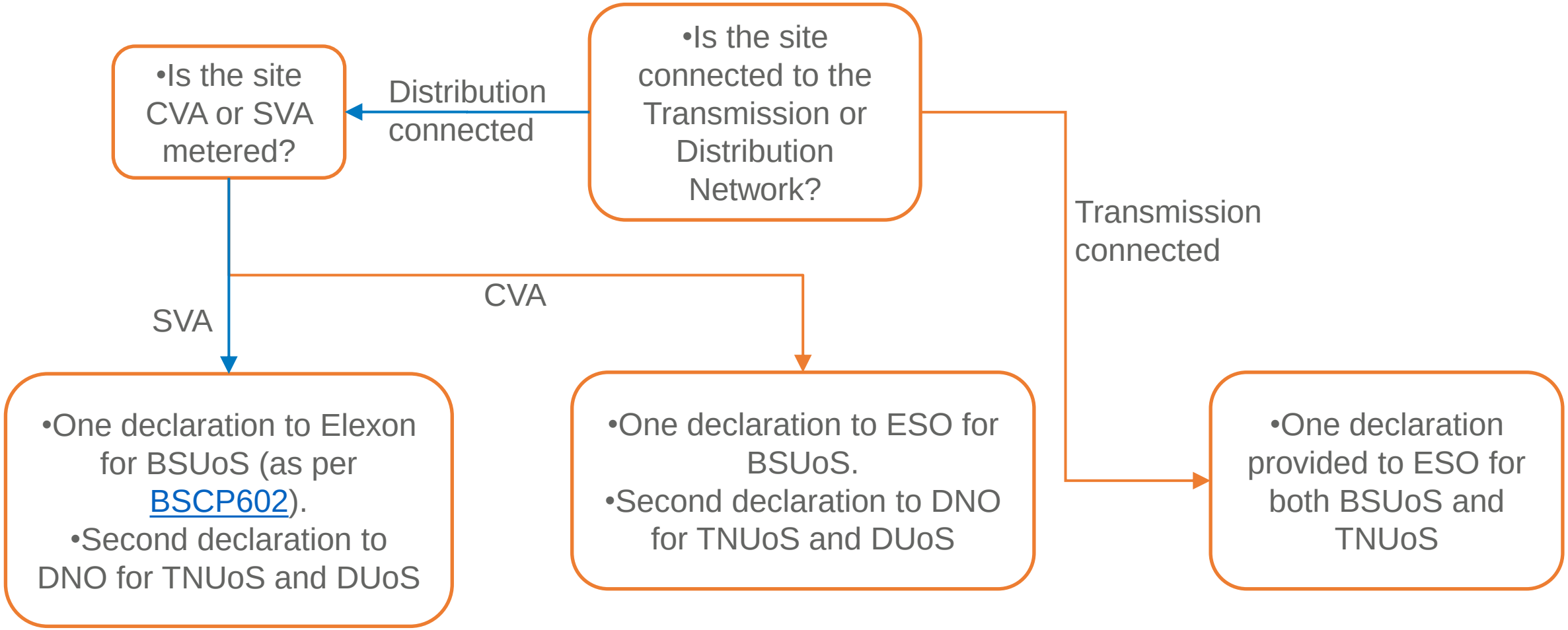
- Inclusion of a de-energised site
- Inclusion of non-final demand sites
- Multi feeder sites counted as a site for each MPAN

If a site changes, we will receive an update when the next run type of data comes through and it will be amended in the data. A credit/invoice will then be issued for any overpayment/underpayment across the remaining months, taking account of how much liability you have already paid.

Non-final Demand Declarations

Q&A: Slido.com → #Revenue

Non-final demand will be required to have submitted a declaration



Non-final Demand Declarations

Q&A: Slido.com → #Revenue

Pre-populated forms are sent out when we see a new CVA BMU appear

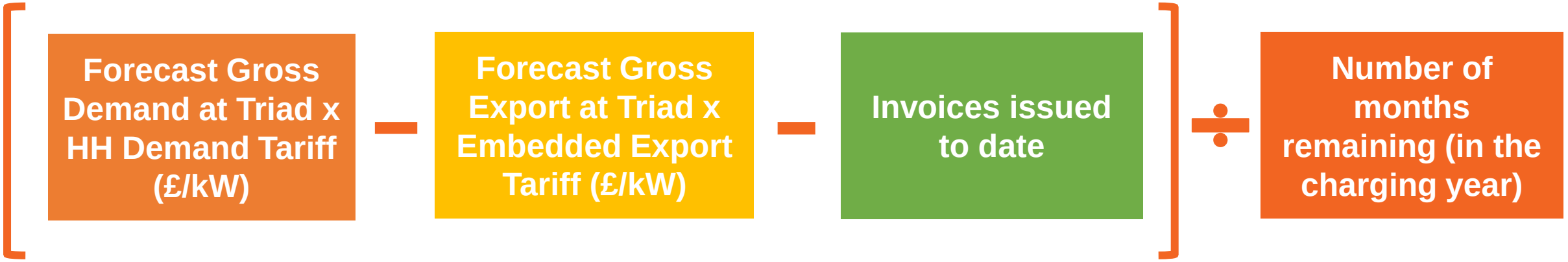
Annex 1

Site Number	Site Name	Site Address	BMU IDs and meters registered at address	BCA reference number	Tech Type	Transmission connected	Declaration ID (where known)	Does the BMU contain any Final Demand? If yes, please also complete Annex 2 for this site;
Unique referance number for the site if transmission connected	*Unique name for the site*	*Address that identifies the geographical location of the site, rather than its administrative address, if different)*	*The Balancing Mechanism Unit (BMU) ID(s) for the CVA site (e.g. T_XXXX)*	*Reference number associated with the Bilateral Connection Agreement made for this site.*	*Short description of the technology employed at the site*	*Is the BMU connected to the National Electricity Transmission System? Delete as appropriate*	*Unique ID determined by NGESO following the initial declaration of a facility. This field should only be filled in when updating or ceasing an existing declaration*	*Does the BMU consume any energy for purposes other than Electricity Storage, Electricity Generation or provision of an Eligible Service. Delete as appropriate. If yes, please also complete Annex 2 for this site;*
Example – simple site S0001	Oak Road Energy	4 Oak Road, Testville, O14 6BZ	T_OAKRO-1		CCGT	Yes		No
Example – mixed site S0002	Acacia Avenue Energy Park	1 Acacia Avenue, Testington, AB12 3C	T_ACCAV-1		Factory with Wind generation and Battery Storage	Yes		No
Example – mixed site S0002	Acacia Avenue Energy Park	1 Acacia Avenue, Testington, AB12 3C	T_ACCAV-2		Factory with Wind generation and Battery Storage	Yes		No
Example – mixed site S0002	Acacia Avenue Energy Park	1 Acacia Avenue, Testington, AB12 3C	T_ACCAV-D		Factory with Wind generation and Battery Storage	Yes		Yes
	Poplar Energy Storage	1 Poplar Cresent, Testville, O12 5BN	E_POPLR-1		Battery Storage	No		No

Half-Hourly Demand

Within year, Suppliers are charged based on their forecast of HH Gross Demand and Exports over the Triads

Supplier monthly invoice



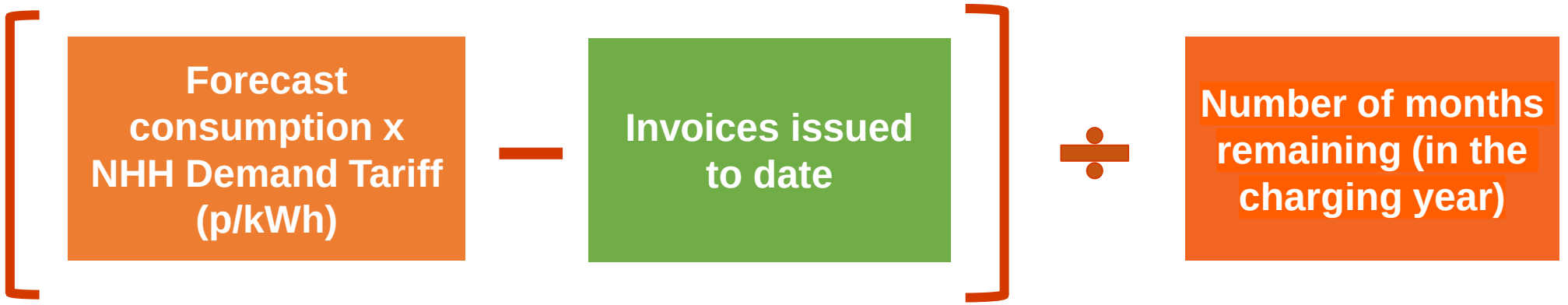
HH exports will be netted off against HH demand at BMU level, so that monthly chargeable values cannot result in a credit to the supplier

Net credits are settled at the annual reconciliation

Non Half-Hourly Consumption

Within year, Suppliers are charged based on their forecast of consumption between 16:00 – 19:00 (inclusive), every day of the charging year (kWh)

Supplier monthly invoice



Embedded Export Payments

Q&A: Slido.com → #Revenue

Payment calculation

- Based on average exports over the 3 Triads x Embedded Export tariff
- Outside of the scope of VAT and split as separate line item on the invoice

Embedded generation registered under Supplier Volume Allocation (SVA):

- Settled directly with the Supplier
- Forecast of HH exports can be provided in Supplier demand forecast
- HH exports included in monthly billing
- Further settlement at the initial and final reconciliations

Embedded generation registered under Central Volume Allocation (CVA):

- Settled directly with the Generator
- Forecast is not provided and no monthly billing
- Settlement is at the initial and final demand reconciliations
- Embedded generation is also liable for demand taken over Triads, charged using the HH gross demand tariff

TNUoS Demand Forecast

Q&A: Slido.com → #Revenue

TNUoS Locational Demand charges are based on the Supplier forecast

- Mandatory requirement in CUSC to submit a forecast by 10th March
- Forecasts should be revised by the 10th of the month if there are significant changes in demand/consumption
- It also affects the calculation of security requirement

What to include in the forecast?

HH (Triad) demand / exports

- A forecast of your contracted customers' average demand, summed by BM Unit (kW)
- A forecast of HH embedded exports average summed by BM Unit (kW)

NHH consumption

- A forecast of your contracted customers' energy consumption between 16:00 and 19:00 (inclusive) every day of the charging year, summed by BM Unit level (kWh)

DEMAND FORECAST SUBMISSION
Used for Calculating 2022/23 Monthly TNUoS Charges

Company Name: Z EXAMPLE LIMITED
Company Registered No: 10000000
Contact Name (in case of query):

BM Unit Identifier	Demand Tariff Zone	Forecast HH Triad Gross Demand (kW) *(see note 2 below)*	Forecast HH Triad Embedded Export (kW) *(see note 3 below)*	Forecast NHH Energy (kWh) *(see note 4 below)*
2__AEXAM000	Eastern	745		6,774,773
2__BEXAM000	East Midlands	914		5,513,249
2__CEXAM000	London	1,746		4,996,105
2__DEXAM000	North Wales and Mersey	912		3,206,701
2__EEXAM000	Midlands	1,228		4,686,015
2__FEXAM000	Northern	824		2,452,885
2__GEXAM000	North West	1,008		5,530,108
2__HEXAM000	Southern	1,230		5,566,630
2__JEXAM000	South East	479		4,426,747
2__KEXAM000	South Wales	334		2,195,350
2__LEXAM000	South Western	955		4,592,799
2__MEXAM000	Yorkshire	579		3,824,910
2__NEXAM000	Southern Scotland	945		1,644,185
2__PEXAM000	Northern Scotland	301		3,904,759

TNUoS Demand Reconciliation

Q&A: Slido.com → #Revenue

The initial reconciliation invoice/credit issued by 30th June, in respect of TNUoS demand liability for the previous year. Final demand reconciliation issued in autumn the year after.

Demand reconciliation calculation

Out-turn Liability − **Monthly Invoice** + **Payment for Embedded Generation** = **Reconciliation Invoice**

Note: a customer may be liable for demand charges and/or be eligible for payments for embedded generation

Historical values

Following regulatory changes effective from 2018/19 the value of the initial demand reconciliation has reduced considerably, as shown in the table below for historical demand reconciliation values.

	2023/24	2022/23	2021/22	2020/21	2019/20	2018/19
Initial Demand Reconciliation (£m)	-9.77	-51.42	6.06	-17.75	-0.77	-64.27
Final Demand Reconciliation (£m)	To be issued Autumn 2025	0.80	2.23	0.78	2.76	-0.31

Security Requirement

The value of security required is re-assessed at the start of each month and a statement is emailed to each customer.

Supplier security requirement

- BSUoS: security is equal to 32 days of Supplier BSUoS charges
- TNUoS: is equivalent to a percentage of your annual demand liability

Generation security requirement

- BSUoS: security is equal to 29 days of BSUoS charges
- TNUoS: no security requirement for generators

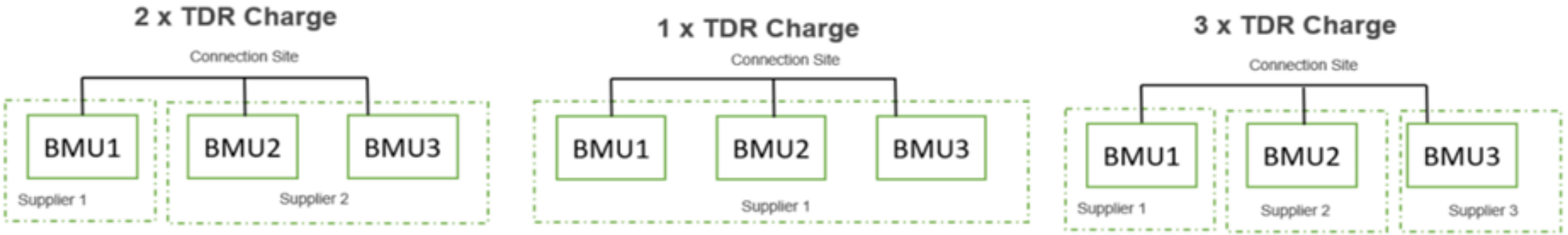
Payment History Allowance (PHA)

- One of three forms of Users Allowed Credit (Approved credit rating or independent credit assessment)
- Accrued for each months invoice(s) paid by the due date, up to a maximum of 60 months
- Reduced by 50% for late payment, and set to zero for second late payment

CMP425 – Multiple Suppliers at same Transmission Demand Site

Q&A: Slido.com → #Revenue

The previous charging of the Transmission Residuals was done by the Lead Party of a BMU. This meant multiple customers at one transmission connection point who chose different Suppliers get multiple charges, discouraging competition in supply and leading to undue discrimination between different system users.



CMP425 ensures that there is one TDR charge at a connection site with multiple suppliers. The charge is split on a pro-rata basis between suppliers at the same connection site based on historical consumption

The modification was approved by OFGEM on 13th December 2023 with a retrospective implementation date of 1st April 2023.

CMP425 – Change to Backing Sheet

Q&A: Slido.com → #Revenue

There is now an additional section below the TDR site count information on the backing sheet which will show if you have any sites that share supplier at the same connection. A site charge % will be applied based on the previous 12 month metered consumption data.

SCTCS	TCSName	ChargingBand	EffectiveStartDate	SiteCharge(%)
RITCS	TCS1	TRN1	01.12.2023	40.5
RITCS	TCS1	TRN1	16.12.2023	60
RITCS	TCS2	TRN2	01.04.2023	100

Market Half Hourly Settlement

Q&A: Slido.com → #Revenue

What are Market-wide Half-Hourly Settlement Changes?

Market Half Hourly Settlement (MHHS) is a key enabler for the flexibility required to support the transition to net zero. Changes coming to MHHS will deliver a faster, more accurate electricity settlement process for all market participants, introducing site-specific settlement using Half Hourly meter readings.

What is MHHS?

The increase frequency of settlement will have several benefits including facilitating different behaviours, encouraging time of use tariffs and participants may change their business models.

How will Half-Hourly Settlements change what we do?

The ESO (Electricity System Operator) will need to adapt to meet the changes in expected behaviour, which might include demand forecasting, longer term scenario planning for Future Energy Scenarios (FES) and efficiency in data.

What is the timeline?

Impacts to ESO are expected from the start of migration which is currently planned to commence April 2025.

MHHS

Q&A: Slido.com → #Revenue

Domestic Premises Indicator	Connection Type Indicator	Current Measurement Class	Charging Arrangement Pre- MHHS Transition	Charging Arrangements post MHHS Transition
Domestic (T)	W (Whole Current); L (LV with Current Transformer); H (HV with Current Transformer) or E (EHV with Current Transformer)	A	Chargeable Energy Capacity	Chargeable Energy Capacity
		F	Chargeable Energy Capacity	Chargeable Energy Capacity
		C	Chargeable Demand Locational Capacity	Chargeable Energy Capacity
	U (Unmetered)	B *	Chargeable Energy Capacity	Chargeable Demand Locational Capacity
Non-Domestic (F)	W (Whole Current)	G	Chargeable Energy Capacity	Chargeable Energy Capacity
		A	Chargeable Energy Capacity	Chargeable Energy Capacity
	L (LV with Current Transformer)	C	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
		E	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
		A	Chargeable Energy Capacity	Chargeable Demand Locational Capacity
	H (HV with Current Transformer)	C	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
		E	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
		A	Chargeable Energy Capacity	Chargeable Demand Locational Capacity
	E (EHV with Current Transformer)	C	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
		E	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity
	U (Unmetered)	D	Chargeable Demand Locational Capacity	Chargeable Demand Locational Capacity

Chargeable Demand Locational Capacity = Triad
Chargeable Energy Capacity = 4pm – 7pm

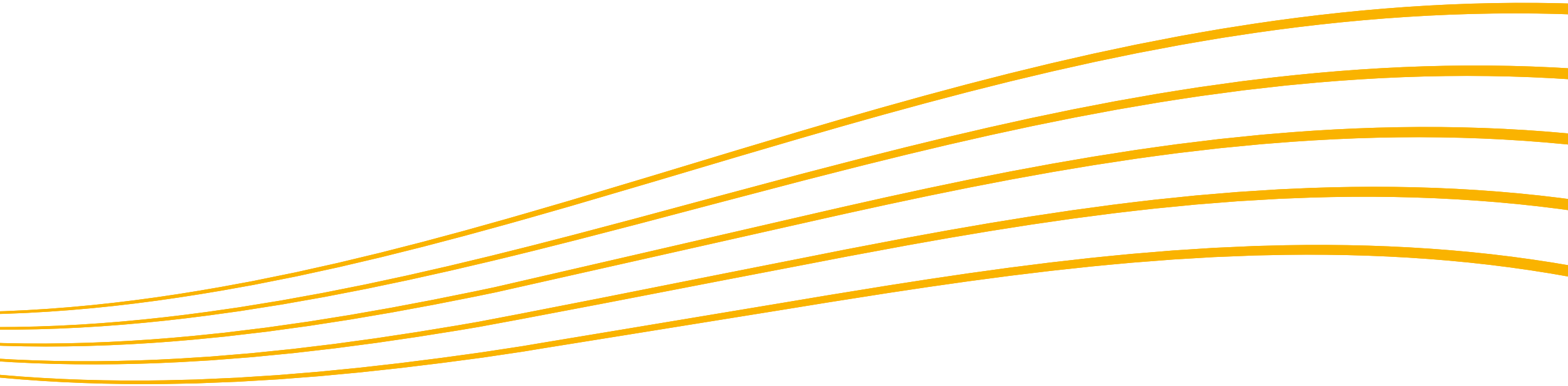
Yellow highlight shows change in TNUoS charging as a result of CMP430

- All NHH Unmetered (Measurement Class B) will be transferred to Measurement Class D by the start of the migration period.

Q&A

AAHEDC

Alan Fradley



AAHEDC formerly Hydro benefit

Who pays?

Electricity suppliers. The scheme amount (£111.40m) is recovered in line with conditions defined in the electricity supplier licence at a tariff of 0.042145 p/kWh.

Who receives?

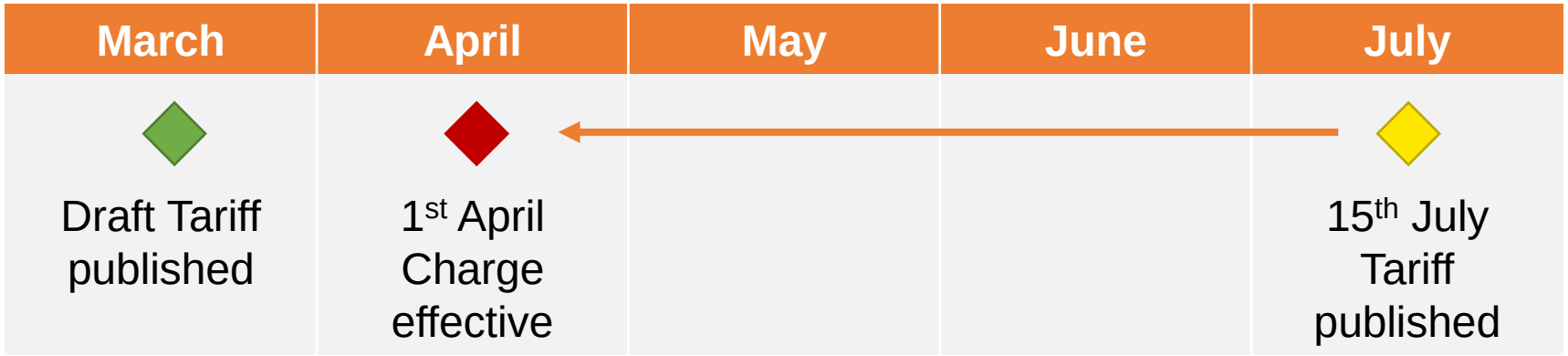
Currently there is only one Relevant Distributor, Scottish Hydro Electric Power Distribution (SHEPD), to reduce the cost of distributing electricity in the north of Scotland

How does it work?

The scheme ‘Assistance Amount’, ‘Shetland Assistance Amount’ and the ‘Administration Amount’ were introduced by the Energy Act 2004 and are inflated annually by the Consumer Prices Index including owner occupiers' housing costs (CPIH) published by the Office for National Statistics (ONS). The ESO is the appointed scheme administrator.

AAHEDC timeline

The Tariff is published annually on or before 15th July (i.e. one month before the first invoice date) and is effective retrospectively from the 1st of April that year. It is a flat rate tariff and does not vary by demand zone.

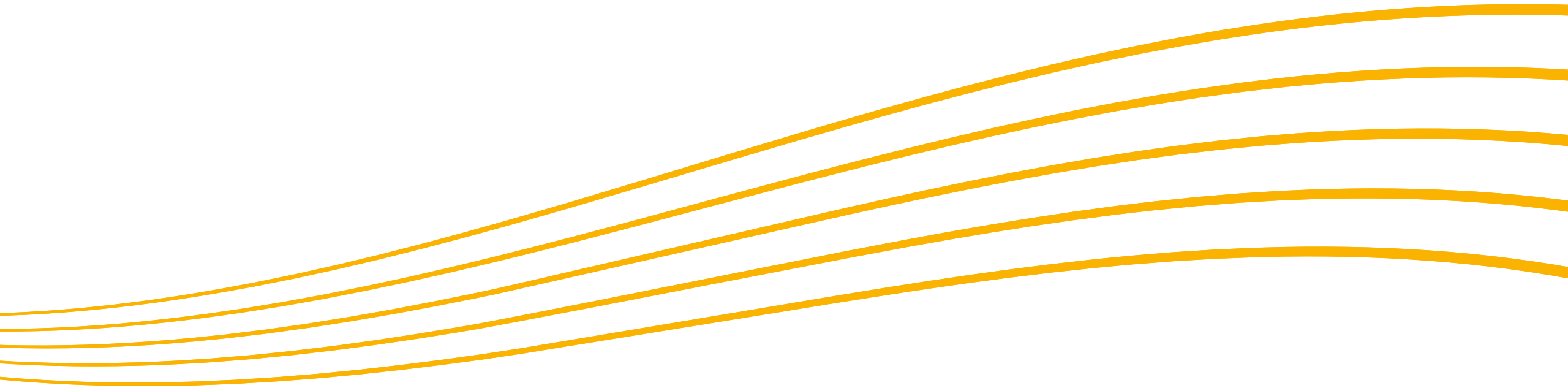


- Invoices are issued to electricity suppliers quarterly in arrears.
- The value is calculated using the sum of gross demand attributable to Licensed Suppliers across all GSP Groups in the previous quarter and includes all settlement periods across all GSP Groups.
- Suppliers are invoiced on 15th August, 15th November, 15th February and 15th May with 28-day payment terms.
- There is no reconciliation; settlement is deemed to be **final** at the invoice date.

Q&A

Connection Charging Overview

John Beezley

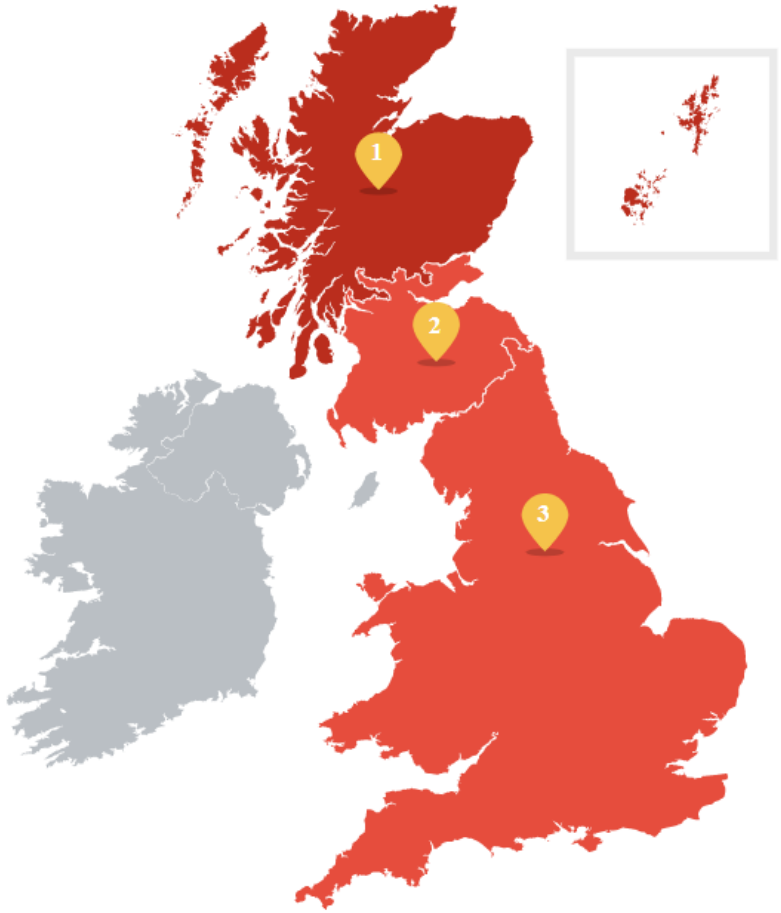


What are connection charges?

Connection charges recover the costs incurred by the Transmission Owner (TO) to design, build and maintain your connection to the transmission system. These charges are usually over a 40-year period.

We recover these charges on behalf of:

1. Scottish & Southern Electricity Networks
2. SP ENERGY NETWORKS
3. nationalgrid



Invoices are issued on the first of the month, with 15-day payment terms.

Connection Charges

Annual Connection Charge Breakdown – Year 1 - 2024

	Connection Cost	Net Asset Value	Depreciation	RoR	SSM	TRC	Annual Charge
	GAV*n*	NAV	GAV/40 or 15	NAV*RoR	GAV*SSM	GAV*TRC	
Asset 1 – 40 Year	£500,000	£493,750	£12,500	£20,000	£1,900	£5,300	£39,700
Asset 2 – 15 Year	£15,000	£14,500	£1,000	£600	£57	£159	£1,816

Acronyms

Gross Asset Value for year n (GAVn)

Total cost of asset including:
- Construction costs
- Engineering
- Interest during construction
- Liquidated damages premium

Net Asset Value (NAV)

Mid year depreciated GAV of the asset

Rate of Return (RoR)

Transmission Owner Rate of Return

(Example 4%)

Site Specific Maintenance (SSM)

Recovers a proportion of the cost and overheads with the maintenance activities.

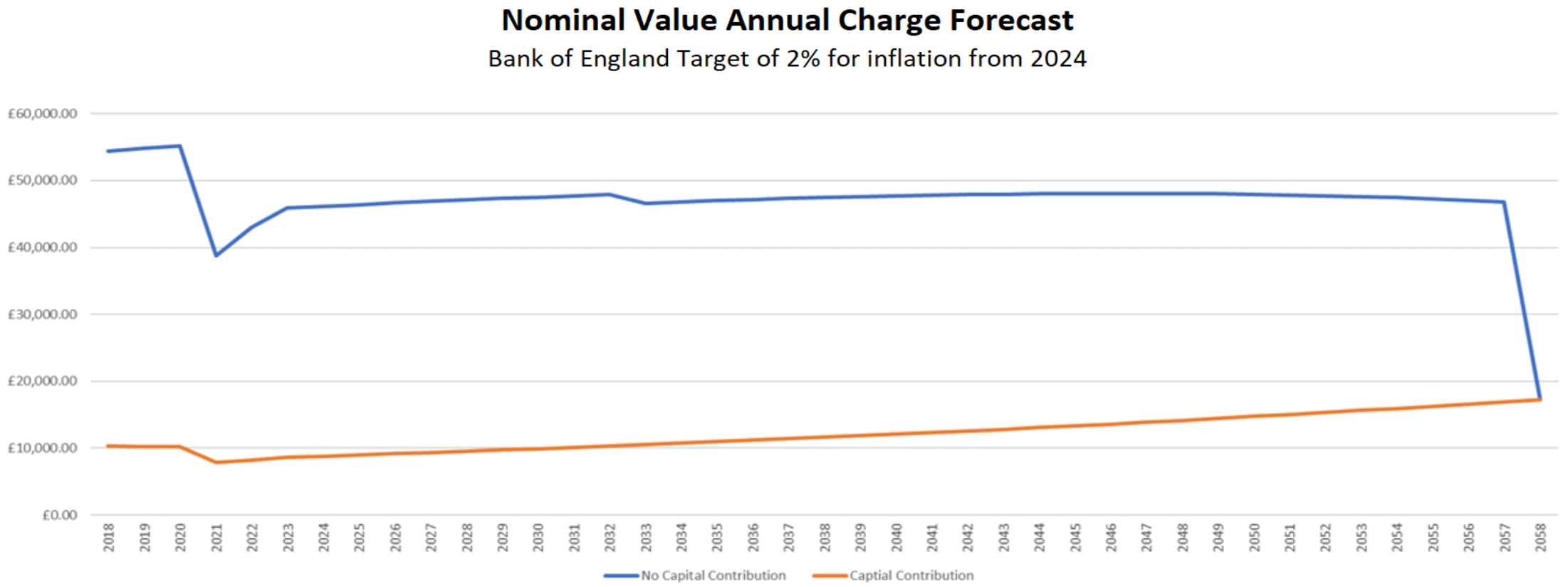
0.38%

Transmission Running Costs (TRC)

Rates, operation, indirect overheads incurred by the transmission licensees

1.06%

Example of Annual Charge over time



Annual Charges will change over time as we progress through price control periods and methodology changes. Each year inflation and maintenance factors are recalculated.

Capital Contribution Payments

A Capital Contribution payment can be a lump sum payment, or multiple payments per year.

- Option 1 – Payments alongside the TO's investment to build and install your assets.
- Option 2 – Single payment upon completion of the work.
- Option 3 – Full or partial payments during the lifetime of your connection.

Annual Connection Charge = Maintenance of the Connection Assets only

You can opt into Capital Contributions via your inital Connection Application

Also a Connection can migrate from Annualised monthly charging to a Capital Contribution via a Mod App which your ESO dedicated Connection Contract Manager can assist with

Termination

- If the repayment method for the assets are through annualised charges, and a user requires an asset to be terminated before its economic life ends, the user will be liable for a termination charge.

- The Termination Charge will recover the Net Asset Value (NAV) of the Connection Assets plus the cost of removing the Connection Asset.

- The default economic life / depreciation period is 40 year, but can be agreed to be less. It's important that when submitting your connection application that you consider the repayment period for the capital costs of the asset.

Asset Replacement:

- Assets may be replaced before the end of their normal lifetime, if this is driven by the TO you will continue to pay existing charges whilst benefiting from the new assets.

- If the TO considers connection assets are required to be replaced before the end of their normal lifetime, the replacement costs will be borne by the TO. This is called 'Ghost Charging'. You will continue to pay your existing annual charges within the remaining lifetime of your original assets. Upon the total depreciation of the original asset, your annual charge will be updated to reflect the costs of the replacement asset(s).

- Once your old asset has fully depreciated, your annual charges will reflect the new asset costs

Charging Appendices Example (Appendix A)

APPENDIX A
TRANSMISSION CONNECTION ASSETS/CONNECTION SITE

User: Sharmila Energy Generation Ltd
Connection Site: Warwick Wind Farm
Type: Entry

Part 1 - Pre-Vesting Assets

Description	Age (As at 01/04/2034)	Year
There are no Pre-Vesting Assets associated with this agreement		

Part 2a - Existing Post-Vesting Assets

Description	Age (As at 01/04/2034)	Year
There are no Existing Post-Vesting Assets associated with this agreement		

Key Points:

- Pre-vesting assets are assets that commissioned pre-1990
- Electronic assets usually have a 10/15 year depreciation whereas Non Electronic have 40

Charging Appendices Example (Appendix B)

APPENDIX B
CONNECTION CHARGES/PAYMENT

User: Sharmila Energy Generation Ltd
Connection Site: Warwick Wind Farm
Type: Entry

(1) Connection Charges

The Connection Charges set out below may be revised in accordance with the terms of this Bilateral Connection Agreement and/or the Construction Agreement and/or the CUSC and/or the Charging Statement.

Part 1 - Pre-Vesting Assets

There are no Pre-Vesting charges for this agreement

Part 2a - Existing Post-Vesting Assets

For indication only, the Connection Charge for those assets installed after 31st March 1990 and as specified in Appendix A Part 2a will be at an annual rate for the period 01/04/2034 to 31/03/2035 of £7,200.00, in April 2024 prices, where

Rate of Return 4.28%

Transmission Costs

Part A Site specific maintenance element = £1,900.00
Part B Other transmission costs element = £5,300.00

Asset Description	Gross Asset Value
SGT 1	£500,000.00

Key Point

- If your project is due to commission in the future, the annual charge described will be different from the charges at the time of commissioning. The GAV of the assets will be recalculated to account for inflation, and the rate of return and maintenance factors for the charging year will be used.

Charging Appendices Example (Appendix B)

Depending on the work undertaken, an ad-hoc charge may be payable. When a one-off payment or capital contribution is in an offer, it will be in a price base. This will be described in Part 5 of your Appendix B. ESO will inflate the amount up to the date the payment is due from this base. Invoices of this nature usually have 30-day payment terms.

For indication only, the One-off charge for an intertip scheme as described in Appendix B1 of the Construction Agreement shall be £100,000.00 in April 2023 prices, payable as per the schedule below.

Invoice Date	Excluding VAT	
01 September, 2023	£	25,000.00
01 June, 2024	£	50,000.00
01 August, 2025	£	25,000.00
Total	**£**	**100,000.00**

All Charges in Parts 1 to 5 will be adjusted to reflect indexed asset values and charge factors applicable in the year of invoicing

Example of Invoices due

			8.65%	6.49%	2.00%*
Payment Due Date	Amount	Fiscal Year	2023	2024	2025
01/09/2023	£25,000.00	2023	£25,000.00	£26,622.50	£27,154.95
01/06/2024	£50,000.00	2024	£50,000.00	£53,245.00	£54,309.90
01/08/2025	£25,000.00	2025	£25,000.00	£26,622.50	£27,154.95

Post Commissioning Security

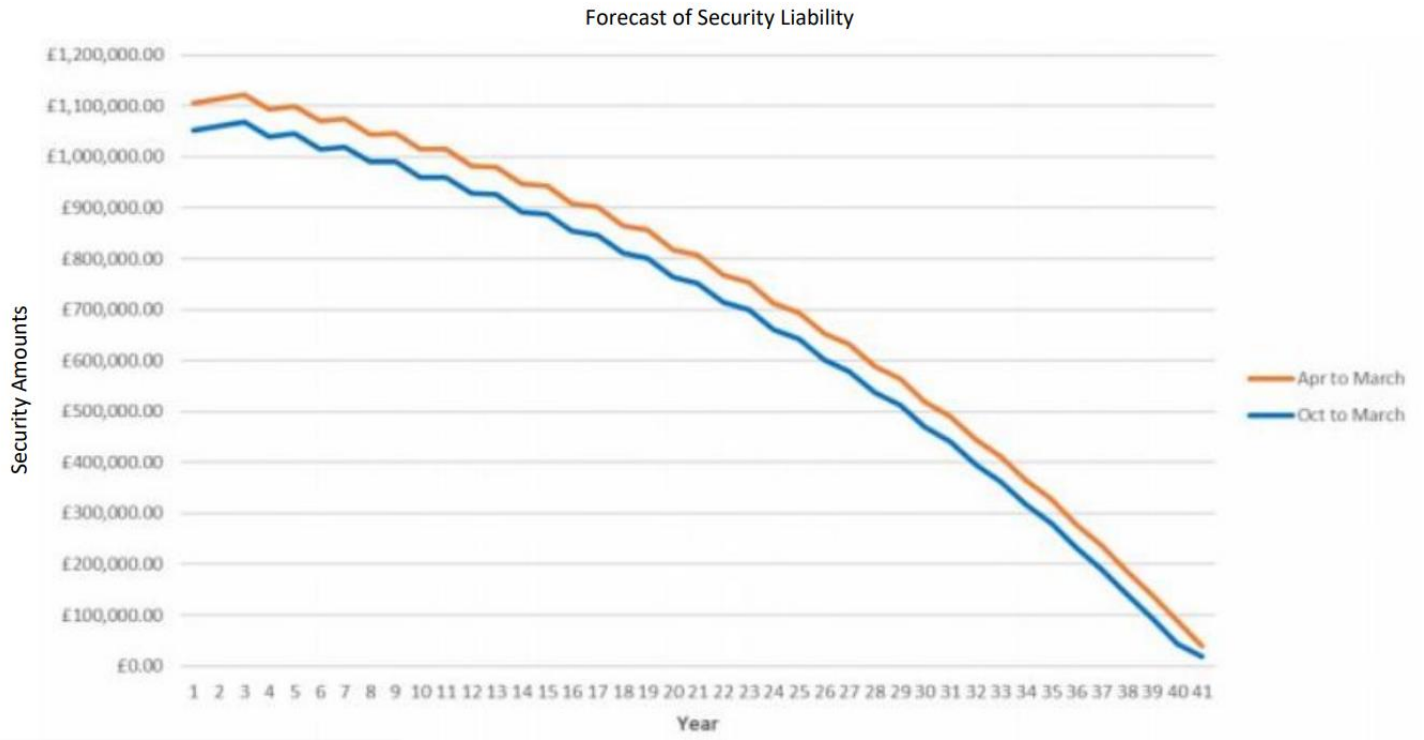
What are post-commissioning securities?

Post-commissioning securities are required to cover the owed amount if the user disconnects from the transmission system during the period that the transmission assets are chargeable to the user.

- The Transmission Owners have invested in assets which generally are charged to users over a 40-year life span. (Can be less subject to agreement from the TO)
- Should the user disconnect from the network the Transmission Owners would not be able to recover the costs of the assets which have been provided.

How are they calculated?

Securities statements are issued bi-annually. Security is calculated based on the End of Year Net Asset Value (NAV). Plus, six or twelve months of connection charges, depending on when the statements are issued.



April to March (Requested in January)

£501,500 (EOY NAV) + £54,347 (12 months connection charge) = £555,847.00

October to March (Requested in July)

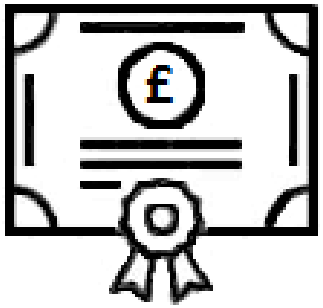
£501,500 (EOY NAV) + £27,173.25 (6 months connection charge) = £528,673.00

As you pay connection charges, the security liability is reduced. Once the assets fully depreciate, you are only to secure the maintenance of the assets.

How do customers provide this?

Customers will generally provide security in one of the following forms:

Bank guarantee



Bond

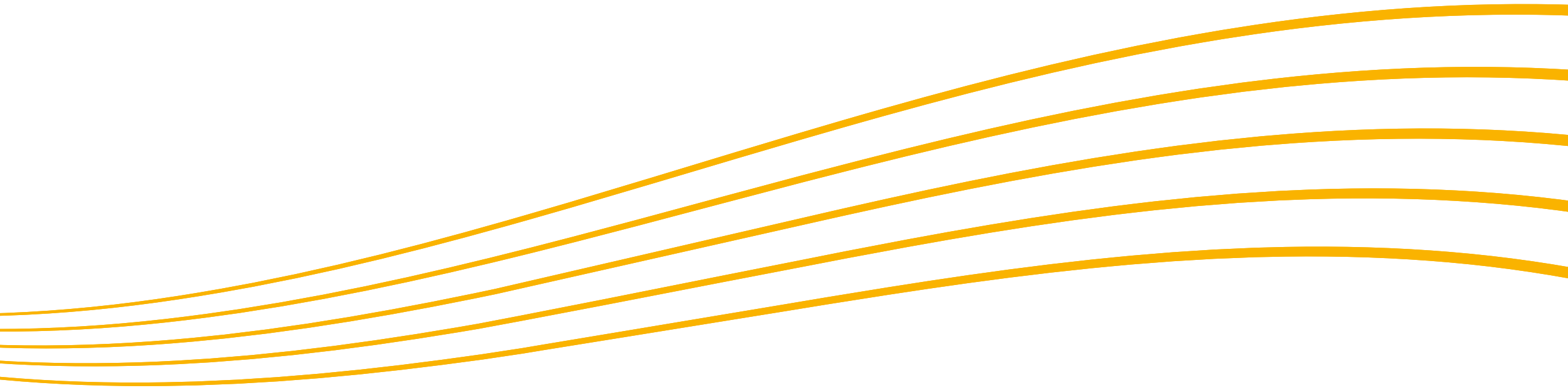
Letter of credit

Cash payment to be held in a ESO escrow account

Q&A

Lunch

Back at 13:20



BSUoS Tariffs

Katie Clark & Marwah Az-zahra

What are BSUoS charges and who pays them?

What is the charge for?

- The BSUoS charge recovers the cost of day-to-day operation including the cost of balancing the electricity transmission system.

How is it charged?

- Half hourly BSUoS Fixed Tariff £/MWh
- Information on specific charging methodologies for BSUoS are available in Section 14.31 of the CUSC

Who pays?

- **Final Demand Site (Since April 2023)**
  - Suppliers
  - Directly connected Transmission demand

Changes for BSUoS in 2023/24

Came into effect 1st April 2023

CMP308

- Removal of BSUoS charges from Generation
- Charges to be levied on final demand only
- Final demand declaration process, CVA v SVA

CMP361/362

- Introduction of an ex ante fixed BSUoS tariff
- No current BSUoS fund, options to be discussed within BSUoS TCMF sub-group
- Consequential definitions update

Changes for BSUoS in 2024/25

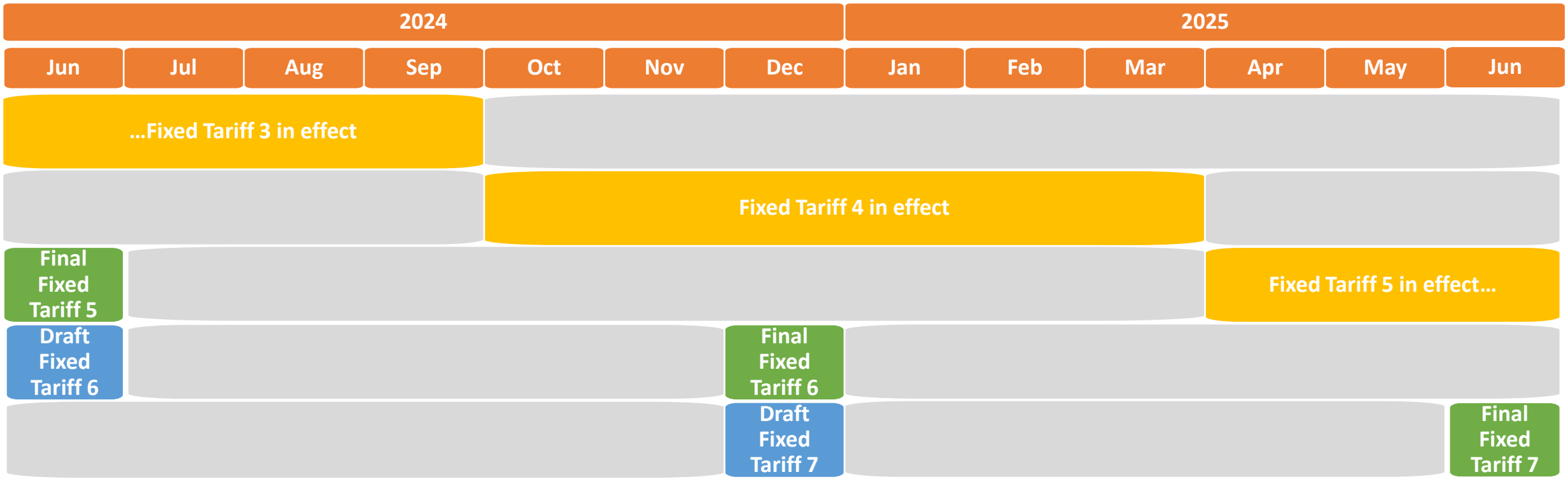
Implemented 14th March 2024

CMP398/412

- The modification provides a cost recovery mechanism for CUSC parties who do not currently hold contracts with the ESO to provide restoration services.
- Modifications are now approved and associated costs are reflected within Fixed Tariff 5&6

BSUoS Tariff Setting Timetable

- Tariffs are set 9 months in advance
- Two tariffs are set each year Apr-Sep & Oct – Mar



BSUoS Fixed Tariff Cost Inputs

Balancing Costs Forecast

- Derived from balancing cost model, based on forward curves of GB wholesale electricity as at Tariff setting.

Internal ESO Costs

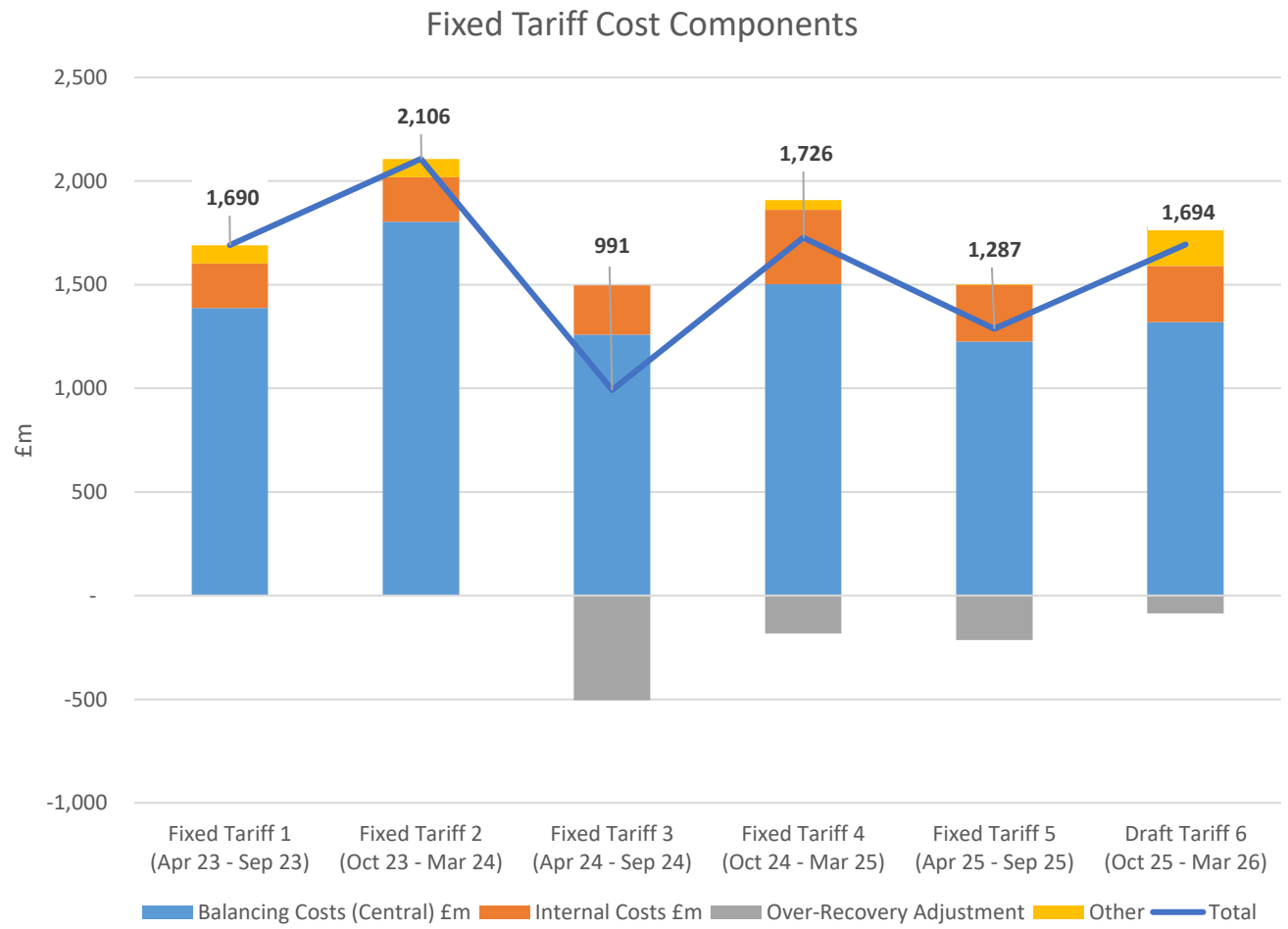
- Internal costs (allowed revenue) are calculated in the Price Control Financial Model (PCFM) process as determined by the current RIIO-2 price control period.

Forecast Over/Under-Recovery

- Final over/under-recovery from previous Fixed Tariff may be included within a Future Fixed Tariff.

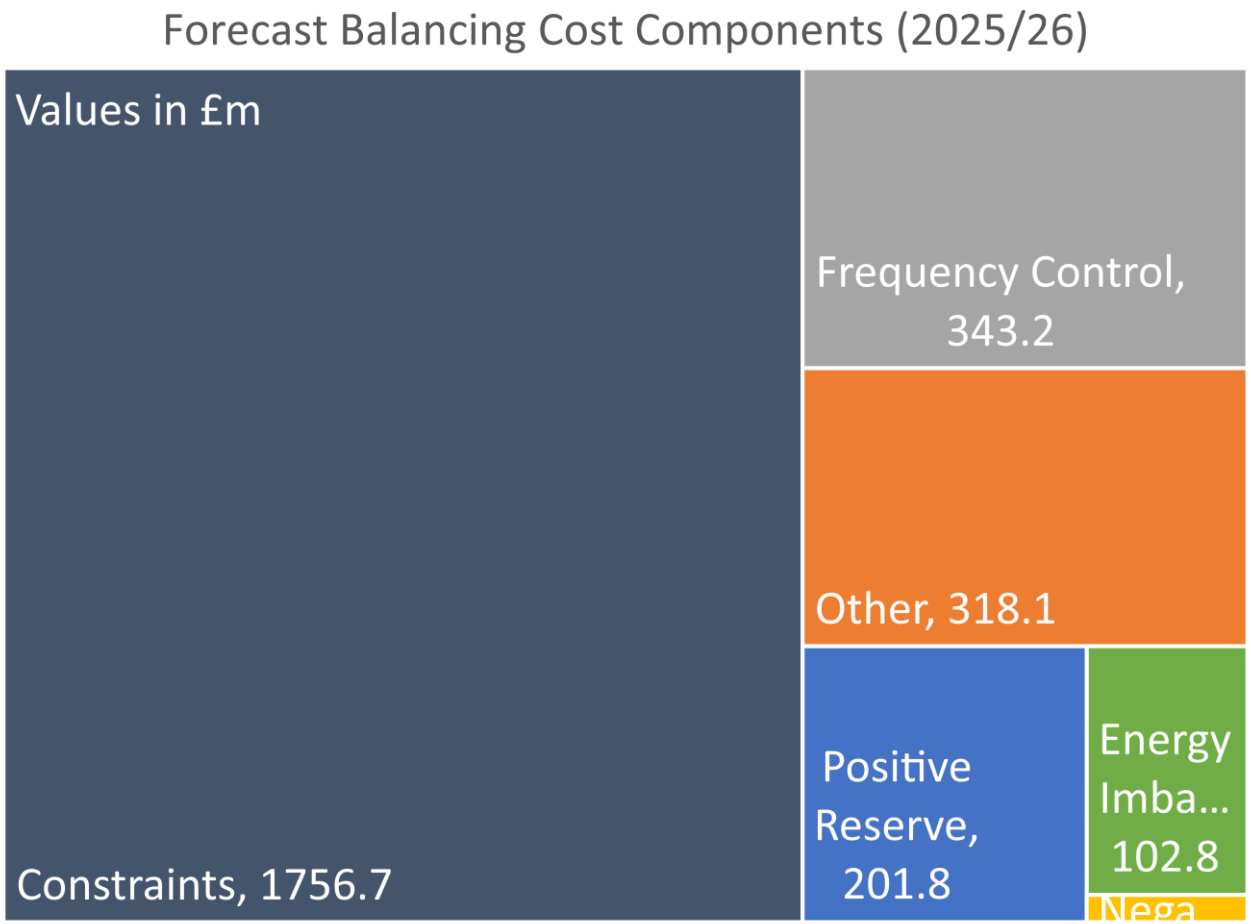
Other

- Additional costs that have been included in the Fixed Tariffs include:
  - Winter Security of Supply
  - Impacts of CUSC Modifications
  - Additional uncertainties



Balancing Cost Components

- **Constraints:** Costs associated with managing constraints on the electricity network.
- **Energy Imbalance**: Costs associated with managing the imbalance between electricity supply and demand.
- **Frequency Control**: Costs of services procured to ensure system frequency remains with operational limits. This includes fast reserve and response services.
- **Negative reserve**: Costs of services which provide the flexibility to reduce generation or increase demand to deal with unforeseen fluctuations in demand, or generation from demand side PV and wind.
- **Positive Reserve**: Costs of services required to operate the transmission system securely and provide the reserve energy required to meet the demand when there are shortfalls, due to demand changes or generation breakdowns.



Figures from October BSUoS Forecast for Apr 2025 – Mar 2026

[BSUoS Forecast Report - October]

Balancing Cost Modelling approach

Q&A: Slido.com → #Revenue

- The aim of the BSUoS forecast model is to produce a forecast with explanatory power:
  - Identify drivers for changes in balancing costs in historic data.
  - Explicit drivers capturing what we know about future changes to the system.

- Forecast is at monthly resolution with a horizon of 24 months.

- Forecast individual cost components and then combine to find total costs.

- Forecast is probabilistic to quantify the level of uncertainty.

- Forecast covers a wide range of lead times therefore we use a blended approach
  - Combines the output of different models
  - Capture the variability over different time scales

- Modelling Webinar:- Document Video Recording Slides Q&A Document

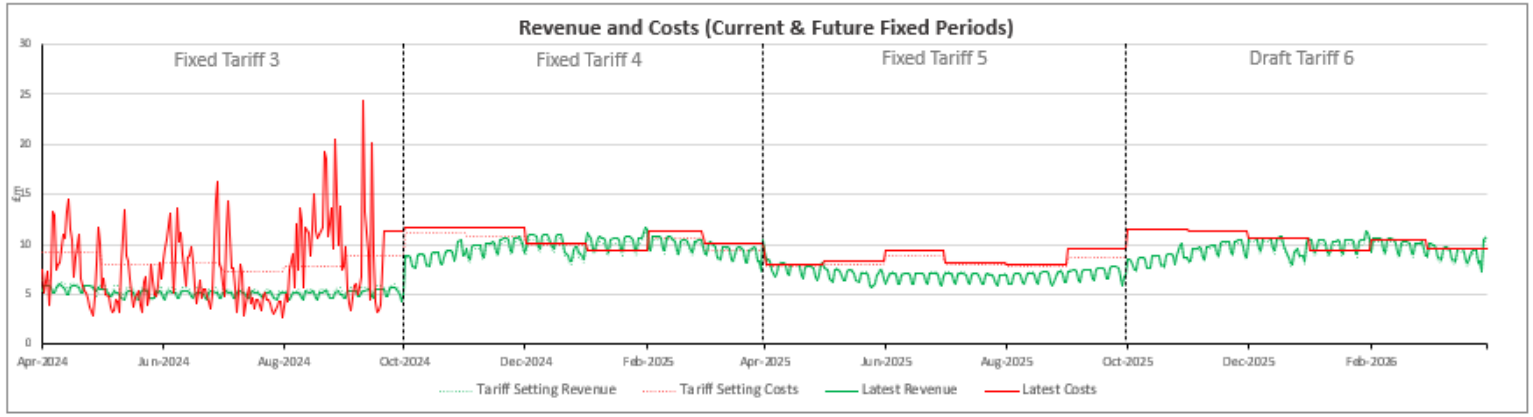
- The last major model methodology update went live in the May BSUoS forecast when we implemented the 'Prophet'1 modelling package. To find out more, see the slides from our April webinar here.

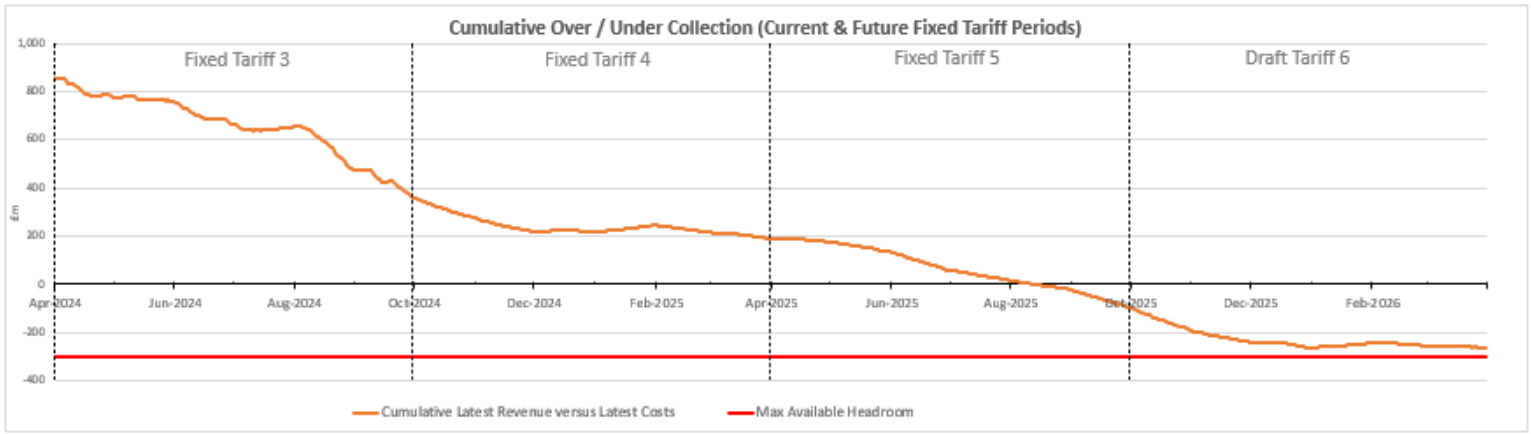
Over/Under Recovery of Charges

Q&A: Slido.com → #Revenue

Today's Date	20/09/2024
Latest Revenue in Fixed Period to date	4,633,286,827
Latest Costs in Fixed Period to date	4,210,328,707
Over / (Under) Recovery to Date	422,958,119

Last date Control Room data available	19/09/2024
Last date II data entered	11/09/2024
Last date SF data entered	28/08/2024
Latest published forecast	October 24



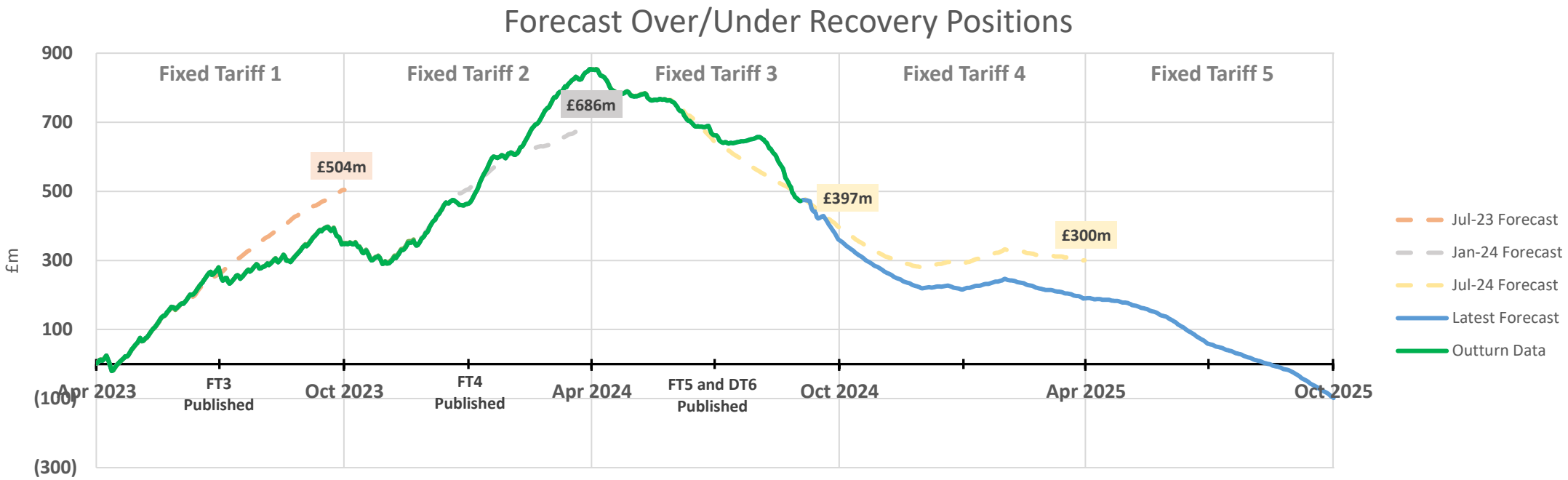


The latest over/under-recovery of data is based on the latest of:

- Control Room Data (+1 WD)
- II Cost and Volume Data (+5 WD)
- SF Cost and Volume Data (+16 WD)
- Monthly BSUoS Forecast (15th of each month)

Over/Under Recovery Adjustment

Q&A: Slido.com → #Revenue



	Fixed Tariff 1	Fixed Tariff 2	Fixed Tariff 3	Fixed Tariff 4	Fixed Tariff 5	Draft Tariff 6
Over/Under-Recovery Adjustment	-	-	-504	-182	-215	-86
Starting Cash Position*	-	349	854	361	190	-95
Over/Under-Recovery Within Tariff*	349	505	10	11	-70	-81
Ending Cash Position*	**349**	**854**	**361**	**190**	**-95**	**-262**

Forecast cash positions as of 20th September 2024. All values rounded to nearest £m

Additional Inputs and Uncertainties for Future Tariffs

Additional NESO Framework Costs

•High-level estimate of the impact of the new regulatory framework that will apply to the new National Energy System Operator (NESO). £236.4m was included in the Draft Tariff 6.
•All the details of the implementation and the funding of NESO have yet to be agreed, however we continue to discuss the enduring framework with Ofgem and at this stage the figure should only be used as a high-level estimate.

Interest Repayment

•There is the potential to include a legacy term within the NESO license, which would enable interest on over-recovery within the 2023/24 charging year to be repaid.
•The earliest this could be included is Draft Tariff 6, however this is dependent on the timing of the publication of the NESO license.

Winter Security of Supply

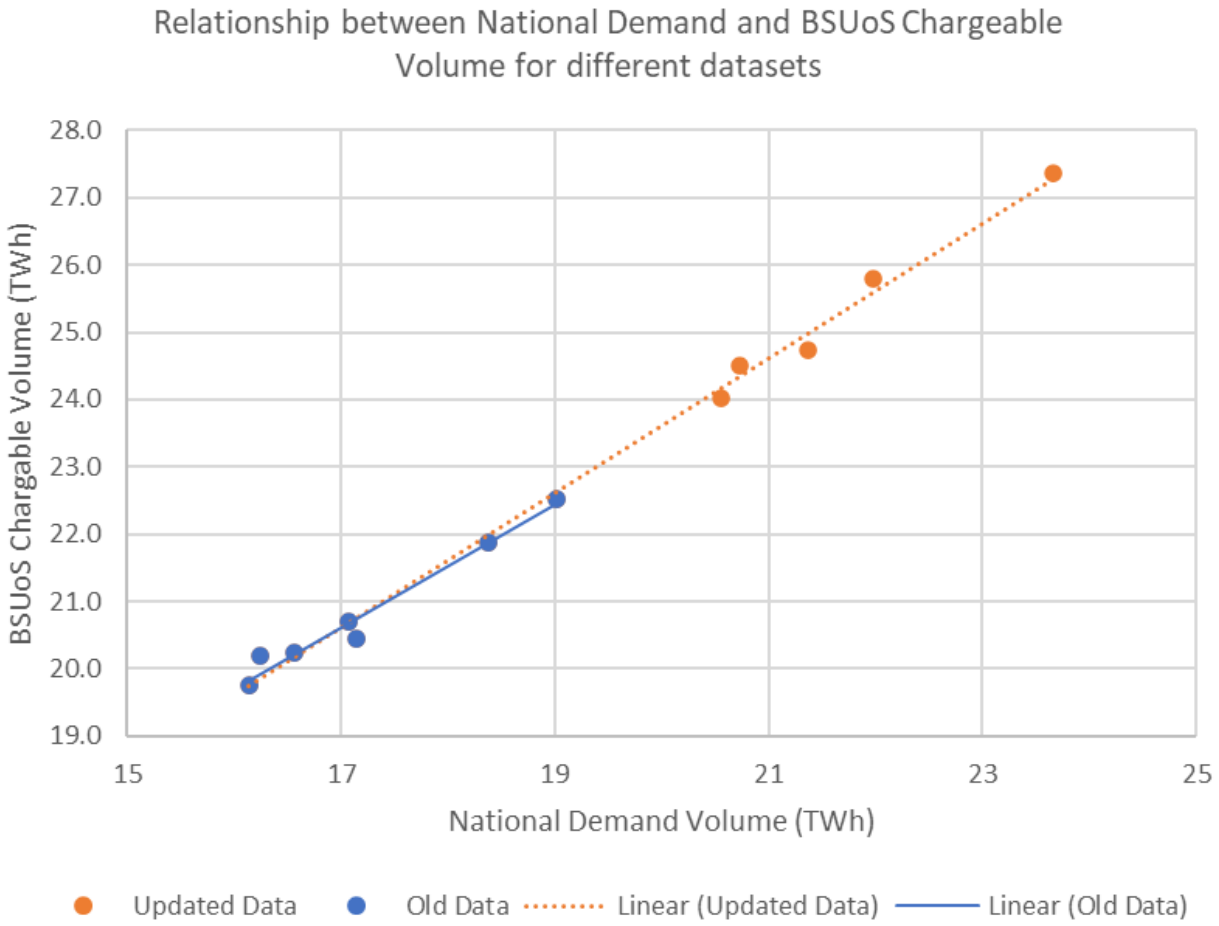
•For winter 2022/23 and 2023/24 the ESO has received requests from the Secretary of State to undertake enhanced actions to ensure ongoing security of supply across the winter period.
•£25m was also included for winter 2024/25, and we will review ahead of December 2024 tariff setting any amount to be included for Winter 2025/26

Volume Forecast

BSUoS chargeable volume is estimated using a simple linear regression, with the ESO national demand forecast as the explanatory variable.

From Fixed Tariff 4 setting in Dec-24, we switched to using only BSUoS chargeable volume and national demand from after Apr-23 (i.e. settlement outturns since the definition change[1]).

For subsequent tariff setting, we extended the data set used to cover Apr-23 to Mar-24. This has allowed us to re-estimate the relationship between BSUoS chargeable volume and national demand.



1: From Apr-23, the charging of BSUoS moved onto "Final Demand"1 only, defined as electricity consumed other than for the purposes of generation or export onto the electricity network.

Published Fixed BSUoS Tariffs

Financial Year 2024/25 – Fixed Tariff 3 & Fixed Tariff 4

[BSUoS Fixed Tariff 3 and Draft Tariff 4 - June 2023]

	Financial Year 2024/25 - Tariff 3 - Final	
	Description	Final Tariff
Fixed Tariff 3 Apr - Sep	Balancing Costs (Central) £m	1,259.30
	Internal Costs £m	236.43
	Winter Security of Supply Payback from 23/24 £m	-75.00
	Over recovery from Fixed Tariff 1 (Apr 23-Sep 23) £m	-429.23
	Total BSUoS £m	991.50
	Estimated BSUoS Volume TWh	129.90
	BSUoS Tariff £/MWh	**£7.63**

[BSUoS Fixed Tariff 4 and Draft Tariff 5 - December 2023]

	Financial Year 2024/25 - Tariff 4 - Final	
	Description	Final Tariff
Fixed Tariff 4 Oct - Mar	Balancing Costs (Central) £m	1,502.5
	Internal Costs £m	359.2
	Forecast over-recovery by end of FT2, less any adjustment already made for FT1 in FT3	-182.0
	Winter Security of Supply	25.0
	2021/22 Under-Recovery of BSUoS	21.7
	Total BSUoS £m	1,726.4
	Estimated BSUoS Volume TWh	141.8
	BSUoS Tariff £/MWh	**£12.17**

Financial Year 2025/26 – Fixed Tariff 5 & Draft Tariff 6

[BSUoS Fixed Tariff 5 and Draft Tariff 6 - June 2024]

	Financial Year 2025/26 - Tariff 5 - Final	
	Description	Final Tariff
Fixed Tariff 5 Apr-Sep	Balancing Costs (Central) £m	1,225.5
	Internal Costs £m	271.9
	Cumulative forecast over-recovery by end of FT 3, less any adjustment already made in FT 4 £m	-215.0
	CMP398 Claims £m	4.3
	Total BSUoS £m	1,286.6
	Estimated BSUoS Volume TWh	119.8
	BSUoS Tariff £/MWh	**£10.74**

	Financial Year 2025/26 - Tariff 6- Draft	
	Description	Draft Tariff
Fixed Tariff 6 Oct-Mar	Balancing Costs (Central) £m	1,320.1
	Internal Costs £m	270.4
	Cumulative forecast over-recovery by end of FT 4, less any adjustment already made in FT5 £m	-85.6
	CMP398 Claim Forecast £m	4.3
	Interest Repayment £m	-52.0
	NESO Framework Internal Cost Estimate £m	236.4
	Winter Security of Supply £m	0.0
	Total BSUoS £m	1,693.5
	Estimated BSUoS Volume TWh	141.2
	BSUoS Tariff £/MWh	**£11.99**

Drivers of variability

Driver	Impact
Wholesale electricity price	Cost of balancing services linked to wholesale electricity price
Network Changes	Network improvements alter constraint costs
Weather variability	Costs dependent on level of renewable generation.
Network and generator outages	Major outages of generators, interconnectors or transmission equipment leads to higher management costs
Large unexpected events	Large unexpected impacts
Policies and Government Regulation	Uncertainty in future regulatory changes or government and charging policies affecting potential future costs

BSUoS Recent Mods Update

CMP396 - Rejected	• This modification looked to charge all interconnector lead parties BSUoS when the interconnector flows are exporting power from GB, thereby treating all Final Demand in the same manner irrelevant of where it is located. • On 19 July 2024, the Authority **rejected** the proposed modification.
CMP420 - Withdrawn	• This modification looked to codify the treatment of 'Overrecovery' and allow the potential use of 'Over recovery' to reduce the risk of reopening prices during a future Fixed Period. • The Panel agreed to the **withdrawal** of the modification at the May 2024 CUSC Panel.

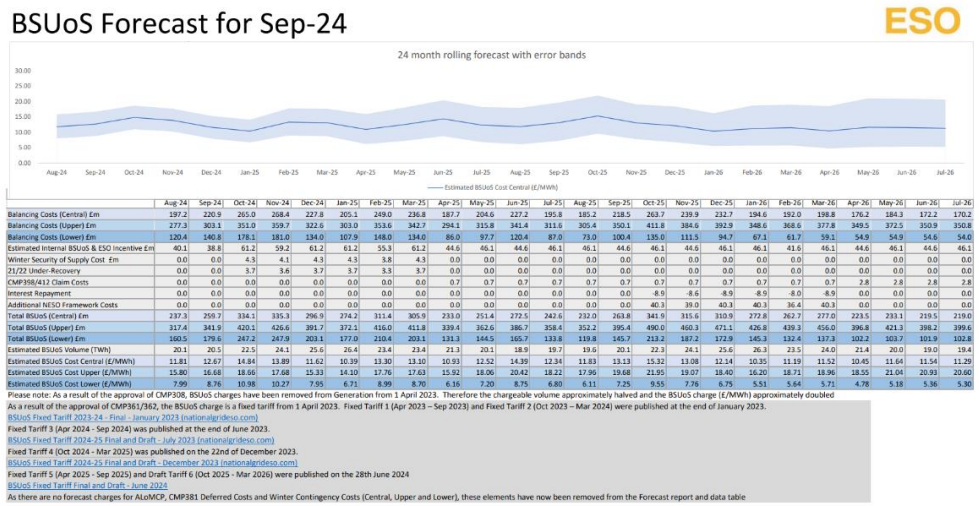
BSUoS Active Mods

CMP408	• This modification looks to change the BSUoS notice period from its current 9 months to 3 months.
CMP415	• This modification seeks to amending the Fixed Price Period from 6 months to 12 months

BSUoS Reporting

We have committed to providing industry with visibility of upcoming costs and the potential for tariffs to be reset. To fulfil this, we have provided the following reporting:

1. Daily web prices
2. Weekly over/under recovery report
3. Monthly publications of balancing service forecast and outturns cost over a 2-year time horizon (shown right)



BSUoS Forecast for Sep-24

ESO

24 month rolling forecast with error bands

	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26
Balancing Costs (Central) £m	197.2	220.9	265.0	268.4	227.8	205.1	249.0	236.8	187.7	204.6	227.2	195.8	185.2	218.5	263.7	239.9	232.7	194.6	192.0	198.8	176.2	184.3	172.2	170.2
Balancing Costs (Upper) £m	277.3	303.1	351.0	359.7	322.6	303.0	353.6	342.7	294.1	315.8	341.4	311.6	305.4	350.1	411.8	384.6	392.9	348.6	368.6	377.8	349.5	372.5	350.9	350.8
Balancing Costs (Lower) £m	120.4	140.8	178.1	181.0	134.0	107.9	148.0	134.0	86.0	97.7	120.4	87.0	73.0	100.4	135.0	111.5	94.7	67.1	61.7	59.1	54.9	54.9	54.6	54.0
Estimated Internal BSUoS & ESO Incentive £m	40.1	38.8	61.2	59.2	61.2	61.2	55.3	61.2	44.6	46.1	44.6	46.1	46.1	44.6	46.1	44.6	46.1	46.1	41.6	46.1	44.6	46.1	44.6	46.1
Winter Security of Supply Cost £m	0.0	0.0	4.3	4.1	4.3	4.3	3.8	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21/22 Under-Recovery	0.0	0.0	3.7	3.6	3.7	3.7	3.3	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CMP398/412 Claim Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	2.8	2.8	2.8	2.8
Interest Repayment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-8.9	-8.6	-8.9	-8.9	-8.0	-8.9	0.0	0.0	0.0	0.0
Additional NESO Framework Costs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.3	39.0	40.3	40.3	36.4	40.3	0.0	0.0	0.0	0.0
Total BSUoS (Central) £m	237.3	259.7	334.1	335.3	296.9	274.2	311.4	305.9	233.0	251.4	272.5	242.6	232.0	263.8	341.9	315.6	310.9	272.8	262.7	277.0	223.5	233.1	219.5	219.0
Total BSUoS (Upper) £m	317.4	341.9	420.1	426.6	391.7	372.1	416.0	411.8	339.4	362.6	386.7	358.4	352.2	395.4	490.0	460.3	471.1	426.8	439.3	456.0	396.8	421.3	398.2	399.6
Total BSUoS (Lower) £m	160.5	179.6	247.2	247.9	203.1	177.0	210.4	203.1	131.3	144.5	165.7	133.8	119.8	145.7	213.2	187.2	172.9	145.3	132.4	137.3	102.2	103.7	101.9	102.8
Estimated BSUoS Volume (TWh)	20.1	20.5	22.5	24.1	25.6	26.4	23.4	23.4	21.3	20.1	18.9	19.7	19.6	20.1	22.3	24.1	25.6	26.3	23.5	24.0	21.4	20.0	19.0	19.4
Estimated BSUoS Cost Central (£/MWh)	11.81	12.67	14.84	13.89	11.62	10.39	13.30	13.10	10.93	12.52	14.39	12.34	11.83	13.13	15.32	13.08	12.14	10.35	11.19	11.52	10.45	11.64	11.54	11.29
Estimated BSUoS Cost Upper (£/MWh)	15.80	16.68	18.66	17.68	15.33	14.10	17.76	17.63	15.92	18.06	20.42	18.22	17.96	19.68	21.95	19.07	18.40	16.20	18.71	18.96	18.55	21.04	20.93	20.60
Estimated BSUoS Cost Lower (£/MWh)	7.99	8.76	10.98	10.27	7.95	6.71	8.99	8.70	6.16	7.20	8.75	6.80	6.11	7.25	9.55	7.76	6.75	5.51	5.64	5.71	4.78	5.18	5.36	5.30

Please note: As a result of the approval of CMP308, BSUoS charges have been removed from Generation from 1 April 2023. Therefore the chargeable volume approximately halved and the BSUoS charge (£/MWh) approximately doubled

As a result of the approval of CMP361/362, the BSUoS charge is a fixed tariff from 1 April 2023. Fixed Tariff 1 (Apr 2023 – Sep 2023) and Fixed Tariff 2 (Oct 2023 – Mar 2024) were published at the end of January 2023.

BSUoS Fixed Tariff 2023-24 - Final - January 2023 (nationalgrideso.com)

Fixed Tariff 3 (Apr 2024 - Sep 2024) was published at the end of June 2023.

BSUoS Fixed Tariff 2024-25 Final and Draft - July 2023 (nationalgrideso.com)

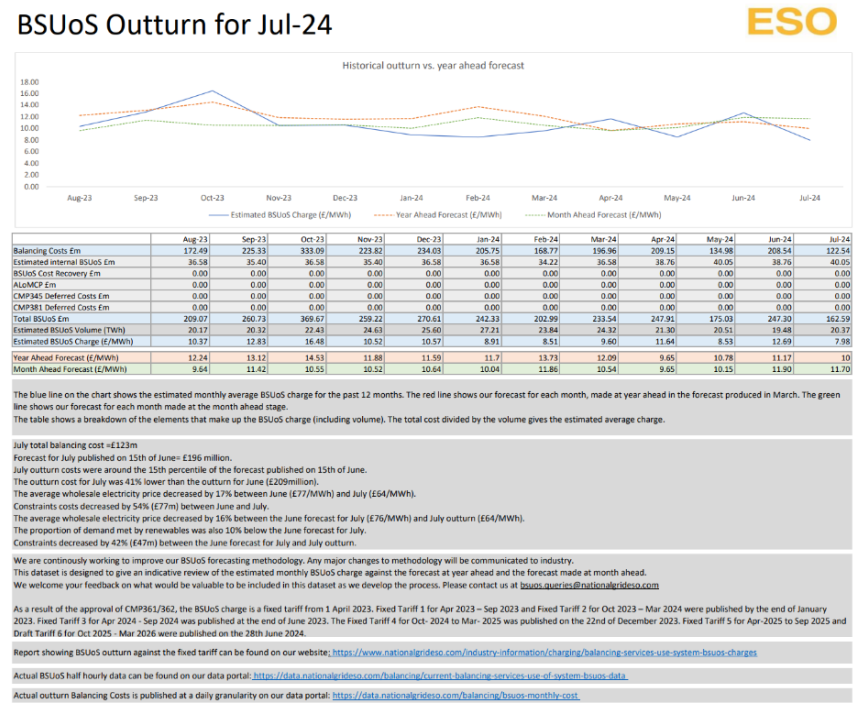
Fixed Tariff 4 (Oct 2024 - Mar 2025) was published on the 22nd of December 2023.

BSUoS Fixed Tariff 2024-25 Final and Draft - December 2023 (nationalgrideso.com)

Fixed Tariff 5 (Apr 2025 - Sep 2025) and Draft Tariff 6 (Oct 2025 - Mar 2026) were published on the 28th June 2024

BSUoS Fixed Tariff Final and Draft - June 2024

As there are no forecast charges for ALoMCP, CMP381 Deferred Costs and Winter Contingency Costs (Central, Upper and Lower), these elements have now been removed from the Forecast report and data table



BSUoS Outturn for Jul-24

ESO

Historical outturn vs. year ahead forecast

	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24
Balancing Costs £m	172.49	225.33	333.09	223.82	234.03	205.75	168.77	196.96	209.15	134.98	208.54	122.54
Estimated internal BSUoS £m	36.58	35.40	36.58	35.40	36.58	36.58	34.22	36.58	38.76	40.05	38.76	40.05
BSUoS Cost Recovery £m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ALoMCP £m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMP345 Deferred Costs £m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CMP381 Deferred Costs £m	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total BSUoS £m	209.07	260.73	369.67	259.22	270.61	242.33	202.99	233.54	247.91	175.03	247.30	162.59
Estimated BSUoS Volume (TWh)	20.17	20.32	22.43	24.63	25.60	27.21	23.84	24.32	21.30	20.51	19.48	20.37
Estimated BSUoS Charge (£/MWh)	10.37	12.83	16.48	10.52	10.57	8.91	8.51	9.60	11.64	8.53	12.69	7.98
Year Ahead Forecast (£/MWh)	12.24	13.12	14.53	11.88	11.59	11.7	13.73	12.09	9.65	10.78	11.17	10
Month Ahead Forecast (£/MWh)	9.64	11.42	10.55	10.52	10.64	10.04	11.86	10.54	9.65	10.15	11.90	11.70

The blue line on the chart shows the estimated monthly average BSUoS charge for the past 12 months. The red line shows our forecast for each month, made at year ahead in the forecast produced in March. The green line shows our forecast for each month made at the month ahead stage.
The table shows a breakdown of the elements that make up the BSUoS charge (including volume). The total cost divided by the volume gives the estimated average charge.

July total balancing cost =£123m
Forecast for July published on 15th of June= £196 million.
July outturn costs were around the 15th percentile of the forecast published on 15th of June.
The outturn cost for July was 41% lower than the outturn for June (£209million).
The average wholesale electricity price decreased by 17% between June (£77/MWh) and July (£64/MWh).
Constraints costs decreased by 54% (£77m) between June and July.
The average wholesale electricity price decreased by 16% between the June forecast for July (£76/MWh) and July outturn (£64/MWh).
The proportion of demand met by renewables was also 10% below the June forecast for July.
Constraints decreased by 42% (£47m) between the June forecast for July and July outturn.

We are continously working to improve our BSUoS forecasting methodology. Any major changes to methodology will be communicated to industry.
This dataset is designed to give an indicative review of the estimated monthly BSUoS charge against the forecast at year ahead and the forecast made at month ahead.
We welcome your feedback on what would be valuable to be included in this dataset as we develop the process. Please contact us at bsuos.queries@nationalgrideso.com

As a result of the approval of CMP361/362, the BSUoS charge is a fixed tariff from 1 April 2023. Fixed Tariff 1 for Apr 2023 – Sep 2023 and Fixed Tariff 2 for Oct 2023 – Mar 2024 were published by the end of January 2023. Fixed Tariff 3 for Apr 2024 - Sep 2024 was published at the end of June 2023. The Fixed Tariff 4 for Oct- 2024 to Mar- 2025 was published on the 22nd of December 2023. Fixed Tariff 5 for Apr-2025 to Sep 2025 and Draft Tariff 6 for Oct 2025 - Mar 2026 were published on the 28th June 2024.

Report showing BSUoS outturn against the fixed tariff can be found on our website; https://www.nationalgrideso.com/industry-information/charging/balancing-services-use-system-bsuos-charges

Actual BSUoS half hourly data can be found on our data portal: https://data.nationalgrideso.com/balancing/current-balancing-services-use-of-system-bsuos-data

Actual outturn Balancing Costs is published at a daily granularity on our data portal: https://data.nationalgrideso.com/balancing/bsuos-monthly-cost

Next Steps

Sep-24	Ofgem decision on CMP408 and CMP415 due
Oct-24	Fixed Tariff 4 in effect Webinar – Tariffs update/mods implementations impact
Dec-24	Publish Fixed Tariff 6 (Oct 25 – Mar 26) and Draft Tariff 7 (Apr 26 – Sep 26)

Q&A

BSUoS Billing

Simon Lodoiska

What are BSUoS charges and who pays them?

What is the charge for?

- The BSUoS charge recovers the cost of day-to-day operation including the cost of balancing the electricity transmission system.

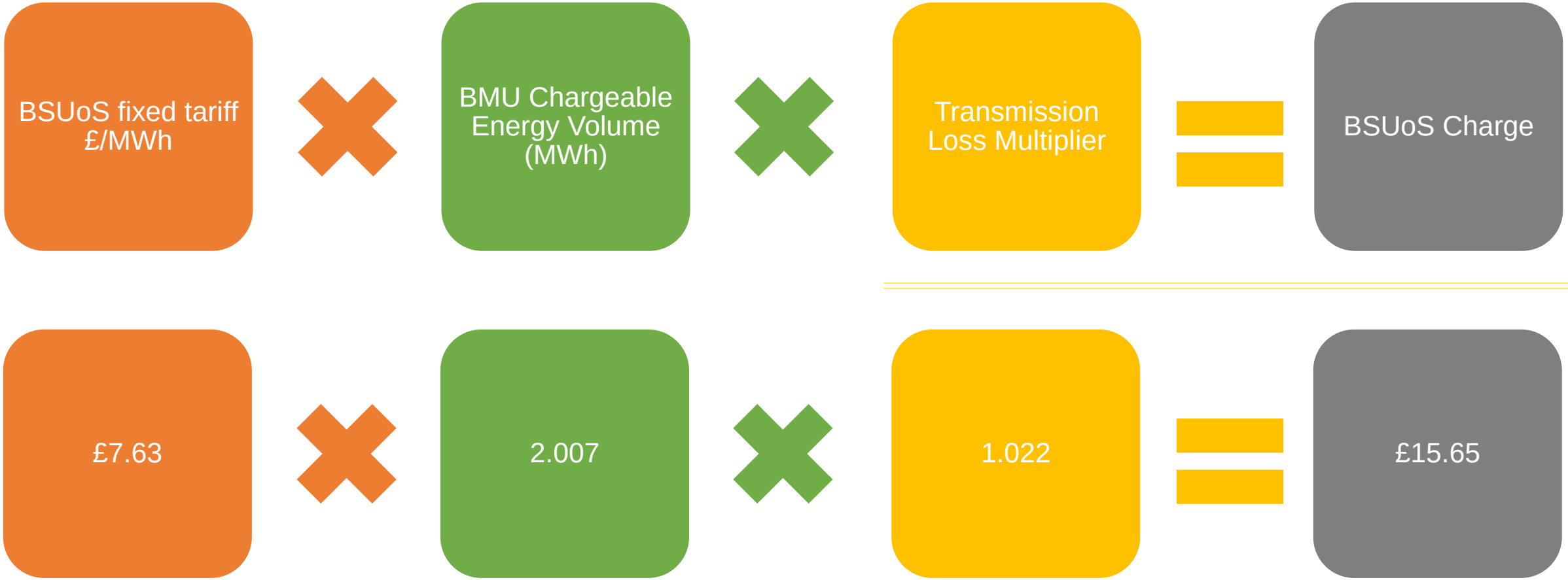
How is it charged?

- Half hourly BSUoS Fixed Tariff £/MWh
- Information on specific charging methodologies for BSUoS are available in Section 14.31 of the CUSC

Who pays?

- **Final Demand Site (Since April 2023)**
  - Suppliers
  - Directly connected Transmission demand

Billing Process - How to calculate your BSUoS charge

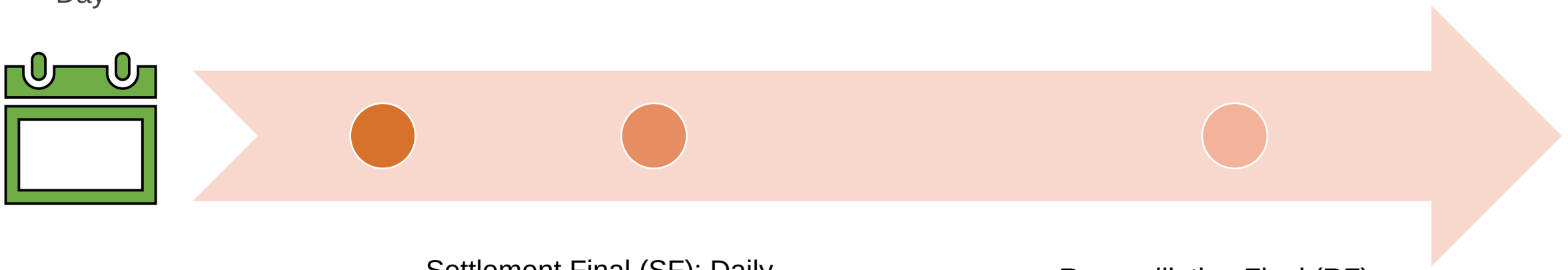


Billing Process - What will you receive?

Settlement Day

Interim Initial (II): not billed Settlement Date + 5 working days

II: Backing sheet and Web prices



Settlement Final (SF): Daily, Settlement Date +16 working days

- Backing sheet, Web prices and Invoice

Reconciliation Final (RF): Daily, Settlement Date + 14 months

- Backing sheet, Web prices, Invoice

Billing Process - Payment Calendar

- The payment calendar is available on the BSUoS website
- It is dependent on Elexon's calendar for when the settlement metering files will be available.
- As highlighted below in orange, a customer can receive multiple SF or RF runs on a single day, reasons for this may include:
    - Catching up on Settlement dates that fall on the weekend/ bank holidays
    - Coming back from a planned system outage.
- The easiest way to pay for the charge is through a Variable Direct Debit. Payment terms are 3 business days.
- Please join our mailing circular, to be kept up to date with BSUoS information.

Sett Date	Sett Code	Notification Date (SAA released +1WD)	Payment date (notification date +3WD)	Notification Period	Payment Period
09/02/2022	RF	03/04/2023	06/04/2023	272	275
09/03/2023	SF	03/04/2023	06/04/2023	18	21
10/02/2022	RF	04/04/2023	11/04/2023	272	275
10/03/2023	SF	04/04/2023	11/04/2023	18	21
11/03/2023	SF	04/04/2023	11/04/2023	17	20
12/03/2023	SF	04/04/2023	11/04/2023	17	20
11/02/2022	RF	05/04/2023	12/04/2023	272	275
12/02/2022	RF	05/04/2023	12/04/2023	271	274
13/02/2022	RF	05/04/2023	12/04/2023	271	274
13/03/2023	SF	05/04/2023	12/04/2023	18	21
14/02/2022	RF	06/04/2023	13/04/2023	272	275
14/03/2023	SF	06/04/2023	13/04/2023	18	21
15/02/2022	RF	11/04/2023	14/04/2023	272	275
15/03/2023	SF	11/04/2023	14/04/2023	18	21
16/02/2022	RF	12/04/2023	17/04/2023	272	275
16/03/2023	SF	12/04/2023	17/04/2023	18	21
17/02/2022	RF	13/04/2023	18/04/2023	272	275
17/03/2023	SF	13/04/2023	18/04/2023	18	21
18/03/2023	SF	13/04/2023	18/04/2023	17	20
19/03/2023	SF	13/04/2023	18/04/2023	17	20
18/02/2022	RF	14/04/2023	19/04/2023	272	275

STAR - Update

- BSUoS STAR billing guidance was published 09/08/2024 which detailed changes to the Backing Sheet (formerly BPA)
- The ability to bill a provisional SF (INTERIM – SF) billing run if Elexon files are unavailable. A secondary Reconciliation SF (FINAL – SF) run can be issued when files are available removing the requirement to delay billing
- Capability to process an increased number of runs
- Billing documents will be sent via email as opposed to SFTP, where majority of customers had issues. Aligned with rest of Revenue
- Best view – Early November 2024 transition to STAR

BSUoS Billing Reports

- Backing Sheet – Breakdown of BSUoS charges at BMU level
- Current BSUoS Data (also known as Web prices) – Includes BSUoS fixed tariff, BSUoS charge, volume and daily costs at half hourly level
- Applicable to Final Demand BMU's only
- Data available for II, SF & RF

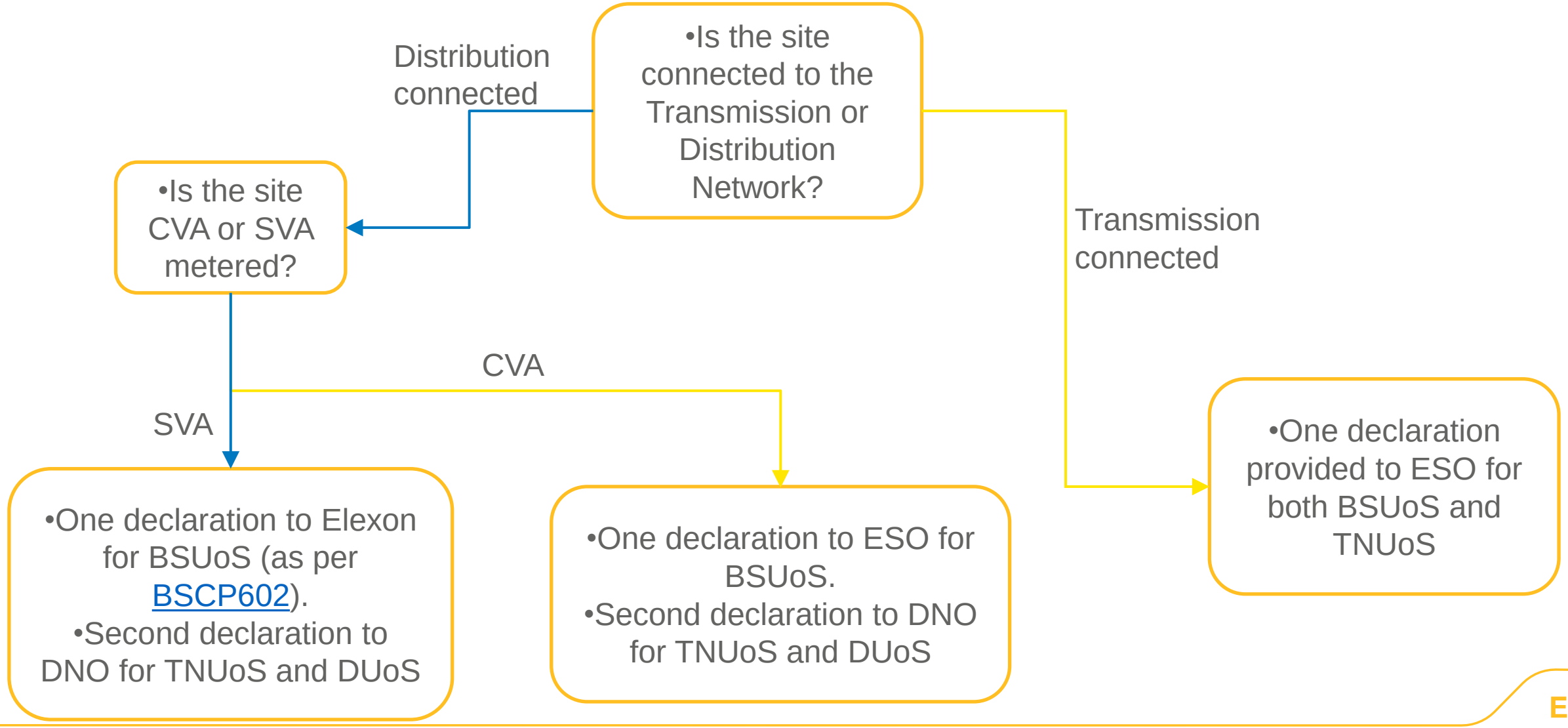
STAR Backing Sheet

	A	B	C	D	E	F	G	H	I	J
1	AAA	BSUSBS01	D	2.02406E+13	SO	NG	BP	ABCE	1	OPER
2	SCHDR	BackingDetails								
3	SETDT	18.02.2024								
4	STDTU	18.02.2024								
5	NOTDT	03.06.2024								
6	DUEDT	06.06.2024								
7	BLREF	MSM_BSUoS_123456789012								
8	RUNTP	RF								
9	BSCH1	ABCE								
10	BSCH2	ABC Energy Ltd								
11	BSCH3	130354.33								
12	DUEFT	14.03								
13	INVNO	7527786321								
14	BLANK									
15	BMUD1	BMUnitID	BSUoSChargeableVolume(MWh)	BSUoSCharge(£)	Demand	PreviouslyBilledCharge(£)	BillableCharge(£)	PayableInterestRFOnly(£)		
16	BMUTD	2__AAA000	3268.534787	46312.56	FD	2001.12	44311.44	2334.68		
17	BMUTD	T_BBB000	0	0	NFD	0	0	0		
18	BMUTD	2__CCC001	6218.758131	88197.13	FD	2154.24	86042.89	4533.43		
19	BMUTD	E_DDD002	0	0	NFD	0	0	0		
20	BMUTD	T_EEE001	0	0	NFD	0	0	0		
21	BLANK									
22	BMUD2	BMUnitID	SettlementPeriod	BSUoSVolume(MWh)	TLM	BSUoSCharge(£)				
23	BSUSV	2__AAA000	1	50	1.0119091	709.85				
24	BSUSV	2__AAA000	2	65.1012	1.0115285	923.9				
25	BSUSV	2__AAA000	3	63.5011	1.0116784	901.32				
26	BSUSV	2__AAA000	4	60.0445	1.0119019	852.45				

Non-final Demand Declarations

Q&A: Slido.com → #Revenue

Non-final demand will be required to have submitted a declaration



Reports available on our data portal

- **Monthly Balancing Services Summary (here)**
  Provides the costs and volumes of BSUoS by month and service

- **BSUoS monthly Forecast Report (here)**
  Monthly forecast for month-ahead and a rolling 24 month period (within BSUoS Data – BSUoS Monthly Forecast)

- **Weekly over/under recovery Report (here)**
  Report found in Current BSUoS data section labelled Fixed Tariff Revenue v Costs Report

- **Payment Calendar (here)**
  This tells you which settlement days are being billed on a particular day and the payment day. Found on website within Useful Information and Documents

Q&A

Revenue and Charging IT Replacement Programme

September 2024

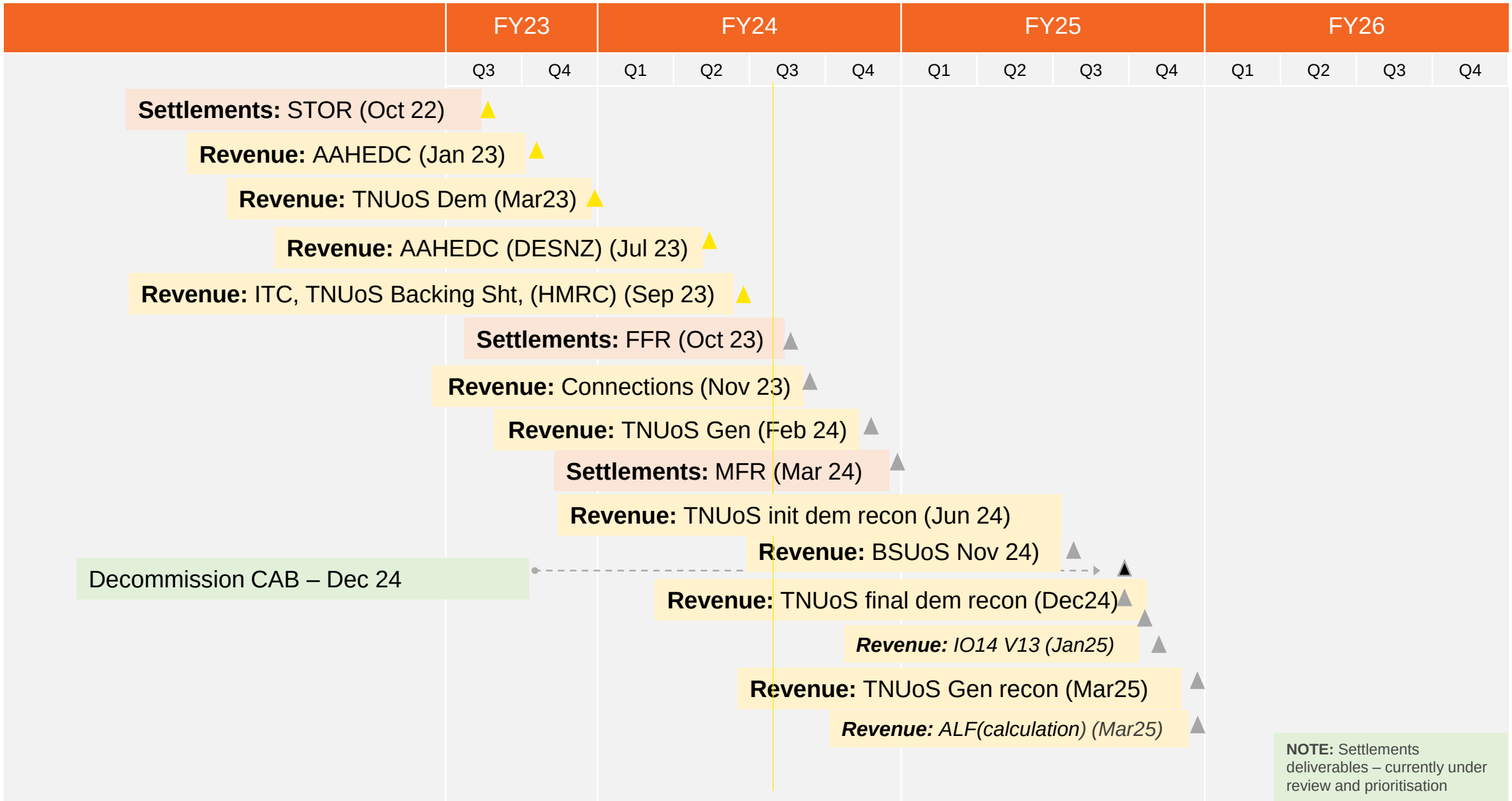
ESO

Overview

STAR delivers the ESO strategic platform for Settlement, Charging and Billing. It will be able to respond quickly to an ever-evolving regulatory environment and serve a diverse and complex market.

Drivers for Change	
Markets growth	Asset Health: system scalability, flexibility to underpin growing markets and liquidity
Customer	Improved customer experience via easier access to quality data
Regulatory Compliance	Implement changes faster and more efficiently
Productivity	Process automation so teams can focus on value-add tasks

STAR Roadmap: September 2024



Changes / Improvements

Backing Sheets:

- Support for CMP425

BSUoS billing:

- Introduction of interim and final SF billing, if required, to reduce billing outages

- Sending Email Address Change New sending email address: emails from STAR are currently sent from noreply.revenue@nationalgrideso.com. This will change once ESO becomes the National Energy System Operator

Potential impact: Customers will need to ensure the revised email address is added to their corporate "safe sender" list to avoid emails being treated as junk.

- CSV Backing Sheets Customers will receive the new CSV format as contained within the draft IDD. The CSV file will be provided in place of PRT, PDF and .DAT. Backing sheets will arrive in a zip format. Invoice csv and Invoice pdf will arrive unzipped

Potential Impact: This will impact customers who utilise PRT, .DAT and PDF

- CSV Invoice A new CSV file version of the Invoice will be provided (invoice will also still be sent in PDF format)
- Email File Transfer - No longer using SFTP

Potential Impact: Adjustments to any automated system that picks up data from the SFTP site

If you have any feedback or suggestions for further improvements, please get in touch with us at bsuos.queries@nationalgrideso.com

Summary

- STAR currently billing monthly TNUoS demand and generation charges, quarterly AAHEDC charges, monthly Connection charges and annual TNUoS initial demand reconciliation charges
- BSUoS will start charging from STAR early Nov
- TNUoS final demand recon and TNUoS generation recon next deliverables
- Clear roadmap which sets out our vision for BP2. Working on vision for BP3
- Regular review our roadmap and reprioritise our backlog based on emerging priorities and business value
- This is supported by an agile delivery plan
- Your feedback is welcome and will continue to inform our design thinking

Q&A

You asked, we did!

- Guidance documents updated
- Continuous development of STAR
- Management of Queries, target to hit 5 working day SLA
- Website design improvements
- Circulating charging forum slides prior to in person event
- Opening slido early prior to webinars

Online Revenue and Charging Forum 24th September 2024 - Feedback Survey

Thank You

Please take a moment to complete feedback for the Forum

Please send any other feedback that you have via email to: Tnuos.queries@nationalgrideso.com

The teams will also be available for any specific queries or one-to-one support

Term	Description
AGIC	Avoided GSP (Grid Supply Point) Infrastructure Credit
ALF	Annual Load Factor
BCA	Bilateral Connection Agreement
BCR	Balancing Services Reporting
BEGA	Bilateral Embedded Generator Agreement
BMU	Balancing Mechanism Units
BPA	Balancing Services Charges (BSC) Party Charging Advice
BSUoS	Balancing Services Use of System
CUSC	Connection and Use of System Code
DNO	Distribution Network Operator
EET	Embedded Export Tariff
ETUoS	Embedded Transmission Use of System
FPN	Final Physical Notifications

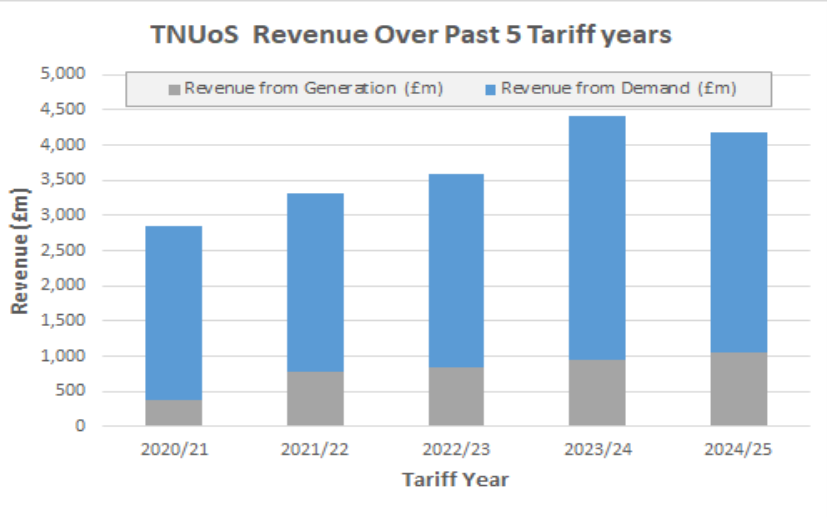
Term	Description
FPVAR	Forecasting Performance Value at Risk
HH / NHH	Half-Hourly / Non Half-Hourly
II	Interim Initial
LDTEC	Limited Duration Transmission Entry Capacity
MHHS	Market Half Hourly Settlements
MIC	Maximum Import Capacity (KVA)
MITS	Main Interconnected Transmission System
NETS	National Electricity Transmission System
NIC	Network Innovation Competition
OFGEM	Office of Gas and Electricity Markets
OTNR	Offshore Transmission Network Review
PCFM	Price Control Financial Model
RF	Reconciliation Final
SCR	Significant Code Review
SF	Settlement Final

Term	Description
SQSS	Security and Quality of Supply Standard
STTEC	Short Term Transmission Entry Capacity
T&T	Model Transport and Tariff Model
TCR	Targeted Charging Review
TDR	Transmission Demand Residual
TEC	Transmission Entry Capacity
TGR	Transmission Generation Residual
TNUoS	Transmission Network Use of System
TO / ONTO / OFTO	Transmission Owner / Onshore Transmission Owner/ Offshore Transmission Owner
Triads	Three half-hour settlement periods with highest system demand between November and February 10 days apart
UMS	Unmetered Supplies
WACM	Workgroup Alternative CUSC Modification

How TNUoS Charges have changed over past 5years?

1. TNUoS Revenues have increased significantly over past 5 years (47% increase)
2. TO revenues increased, due to both SHET & OFTO's revenues doubling across the period
3. Generation charges increases are due to large Offshore increases and, to a lesser extent, the "Year round not shared element" (increased Renewable Generation)
4. Demand Residual has increased significantly - £450m but now fully recoverable through Fixed Charges as opposed to Triad/peak charging.

1



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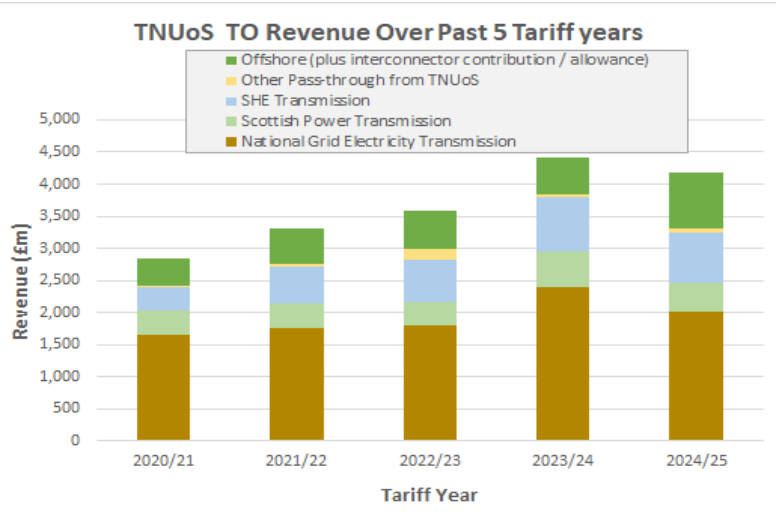

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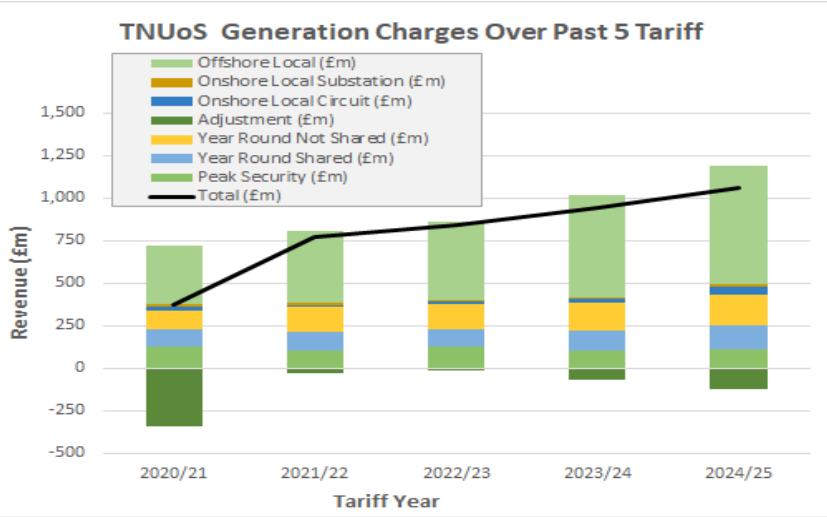

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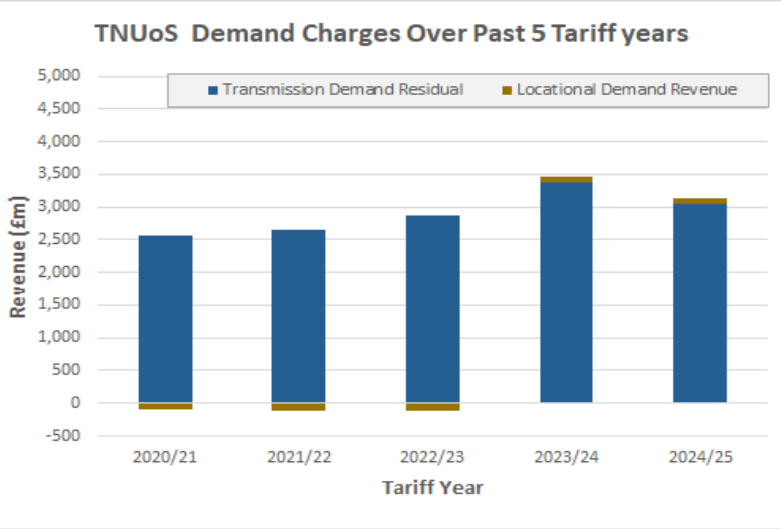

Notes; 1) CUSC modifications throughout the 5 year period will have had an impact on allocations of Allowable Revenue.
2) 2020/21 was in previous price control period (RIIO-1). Subsequent 4 years are in different price control period (RIIO2)