

SR Business Impacts of Network Charging Reform Seminar



Claire Mack

Chief Executive
Scottish Renewables



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Network charges: what are they, and what's changing?

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Joseph Dunn
Grid & Regulation Manager
ScottishPower Renewables



SCOTTISHPOWER
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Joe Dunn

Grid & Regulation Manager

NETWORK CHARGING: BUSTING MYTHS



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Joe Dunn

Grid & Regulation Manager

NETWORK CHARGING: BUSTING MYTHS

in 15 mins.....?

NETWORK CHARGING: BUSTING MYTHS

in 15 mins.....?



Overview of existing charges

- What is a UoS charge?
- What is a BSUoS charge
- How governance works.

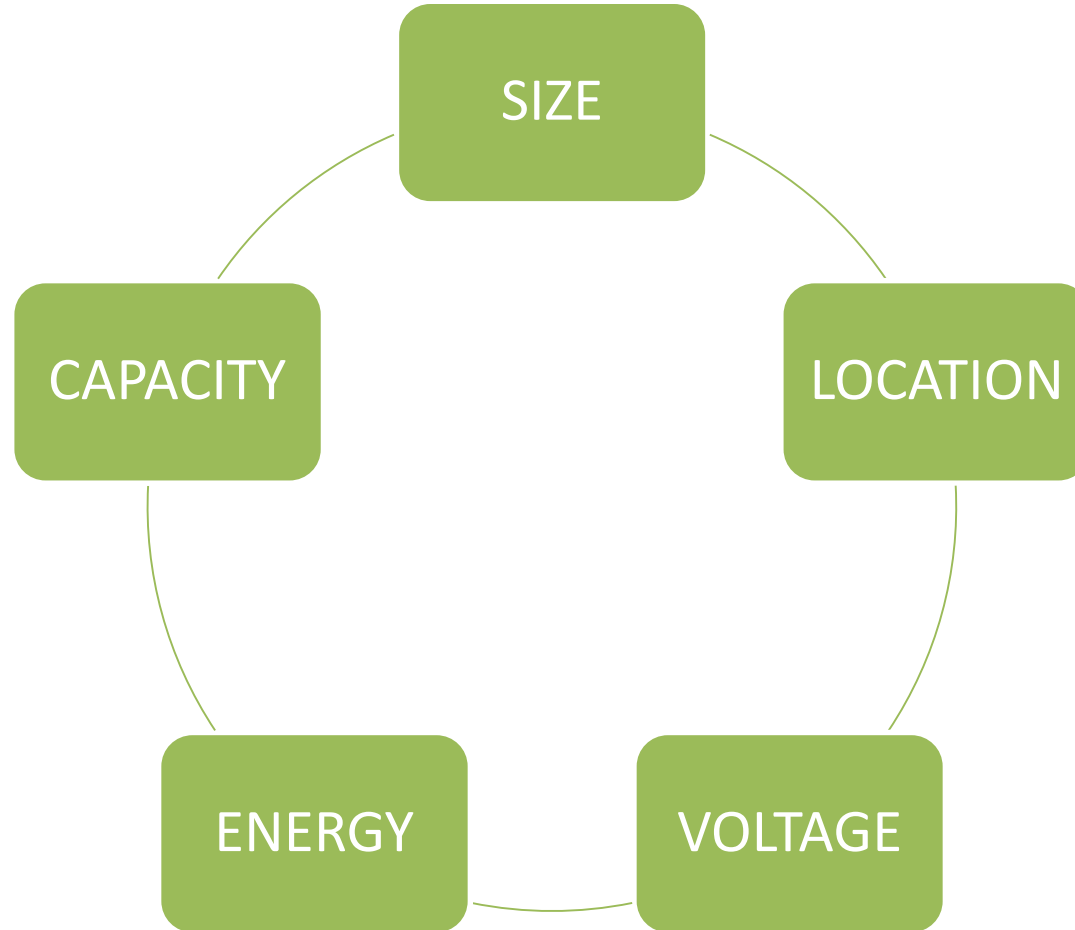
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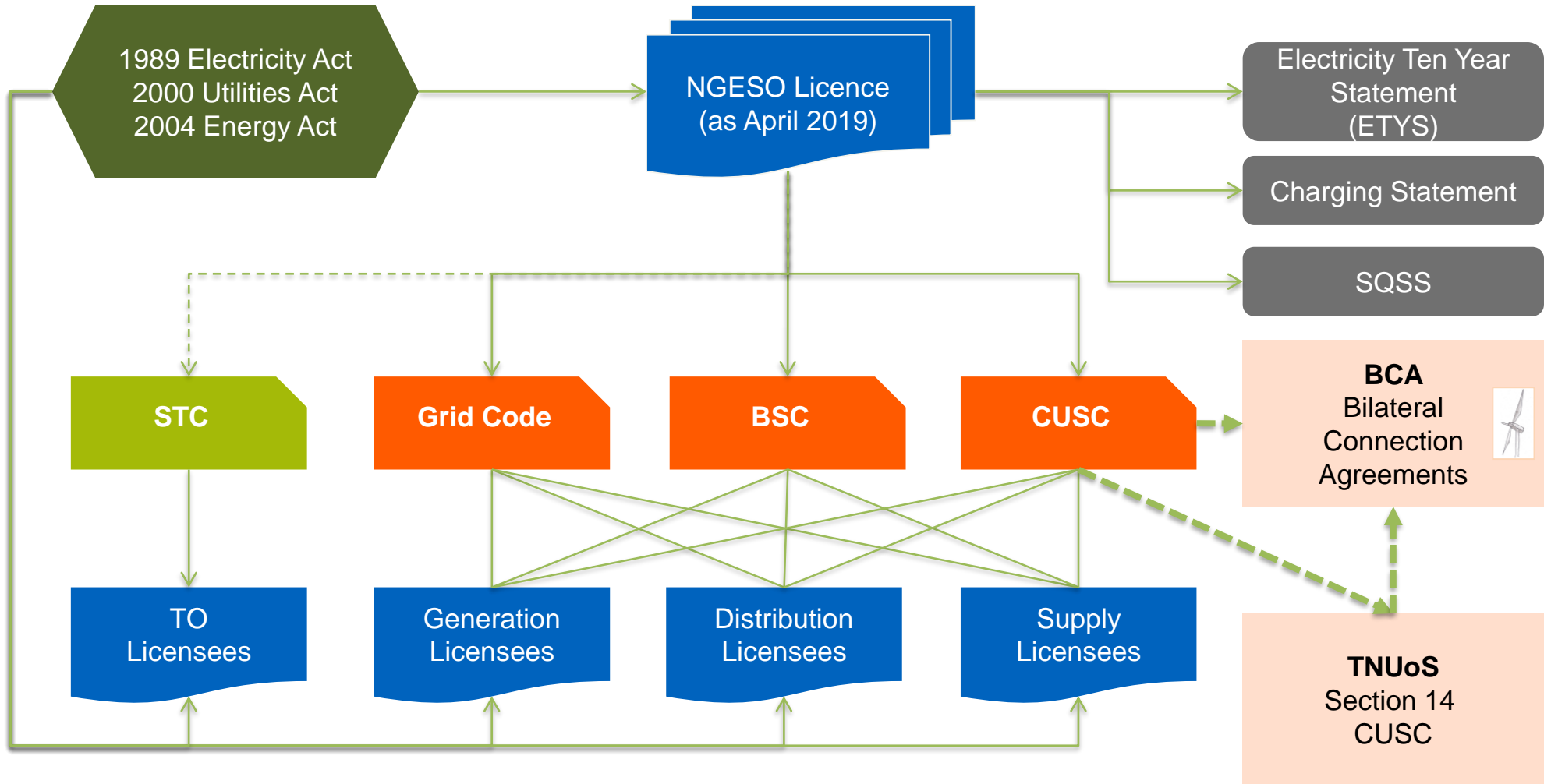
T – Transmission

D – Distribution

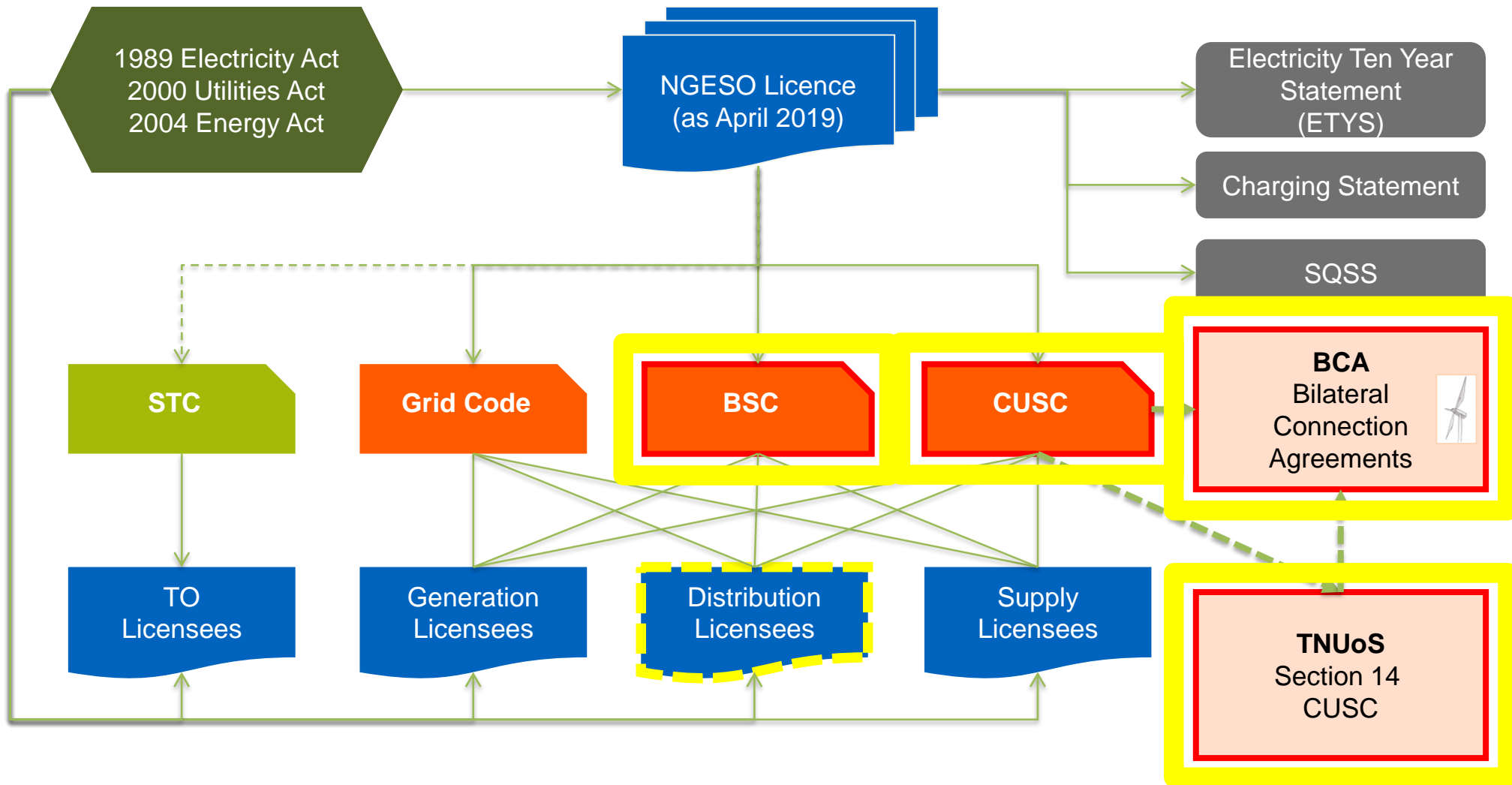
What Matters?



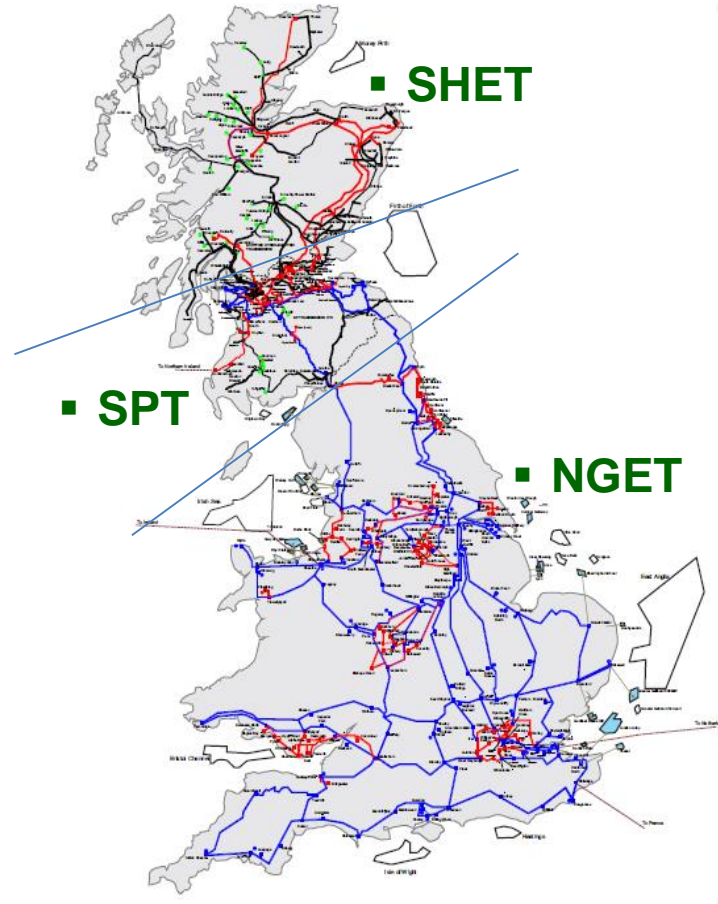
UK Overview: Legislation



UK Overview: Legislation



T - The Transmission System (exc. NI and Ireland)

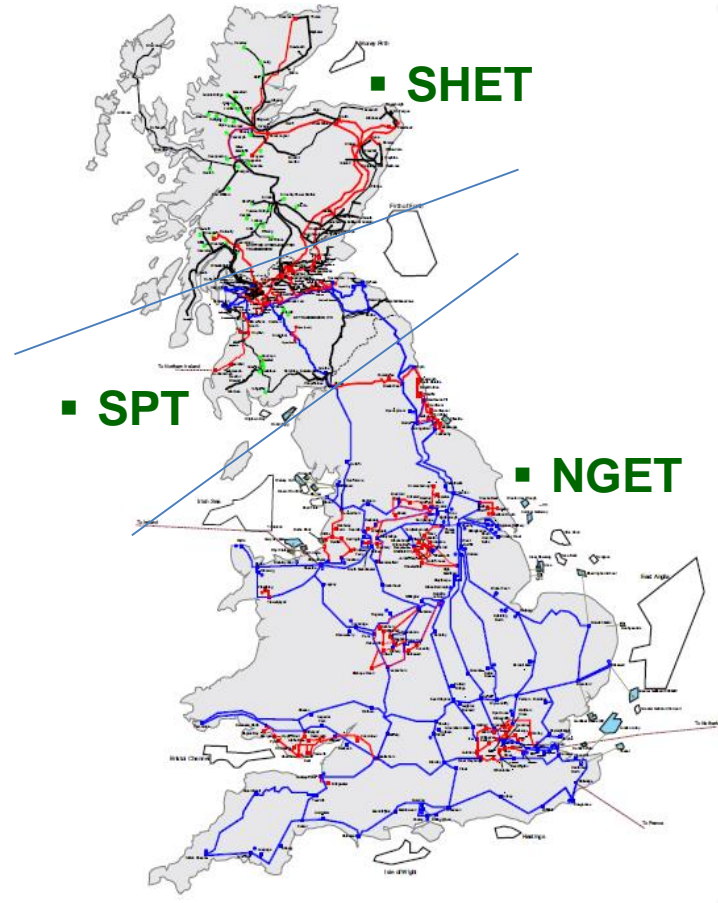


nationalgridESO

T - The Transmission System (exc. NI and Ireland)

Key components:

- 3 Transmission Owners (TOs)
 - SHET
 - SPT
 - NGET
- 1 System Operator (SO) who is NGENSO
- Voltages in Scotland: *132/275/400kV*
- Voltages in E&W: *275/400kV*
- TOs recover cost of Investment, Operation and Maintenance (Regulated Revenue) from the SO
- SO is responsible for recovering revenue on behalf of TOs



D - Distribution Network Operators



1 Scottish & Southern
Electricity Networks



2 SP ENERGY
NETWORKS



3 Northern Ireland
Electricity
Networks



4 electricity
north west
Bringing energy to your door



5 NORTHERN
POWERGRID



6 SP ENERGY
NETWORKS



7 WESTERN POWER
DISTRIBUTION
Serving the Midlands, South West and Wales



8 UK
Power
Networks
Delivering your electricity



9 Scottish & Southern
Electricity Networks



10 ESB
NETWORKS



D - Distribution Network Operators

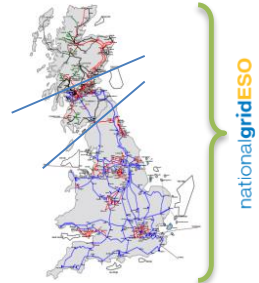
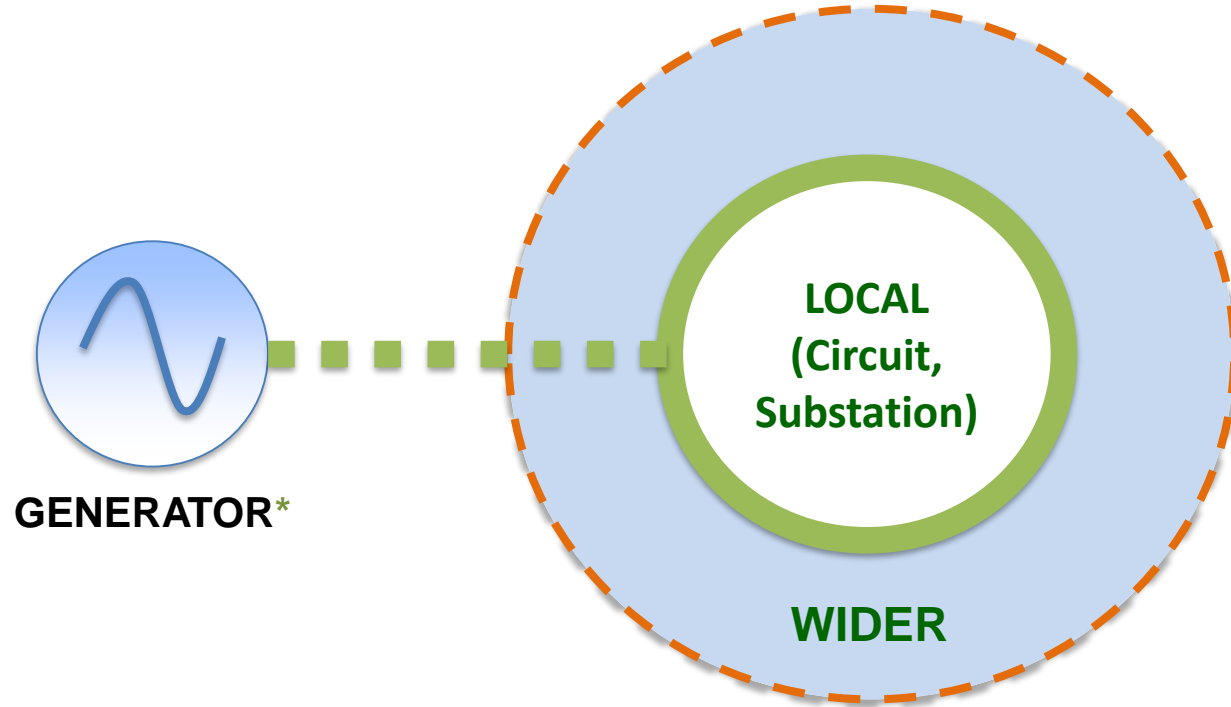


Key components:

- 8 DNOs in UK across 14 licenced areas
- No SO (*network not currently active*)
- DNOs recover cost of Investment, Operation and Maintenance (Regulated Revenue)
- Scotland voltages: *33kV and below*
- E&W voltages: *132kV and below*

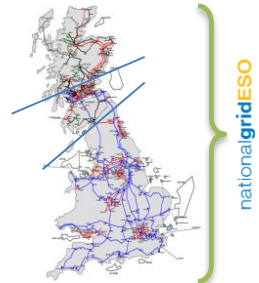
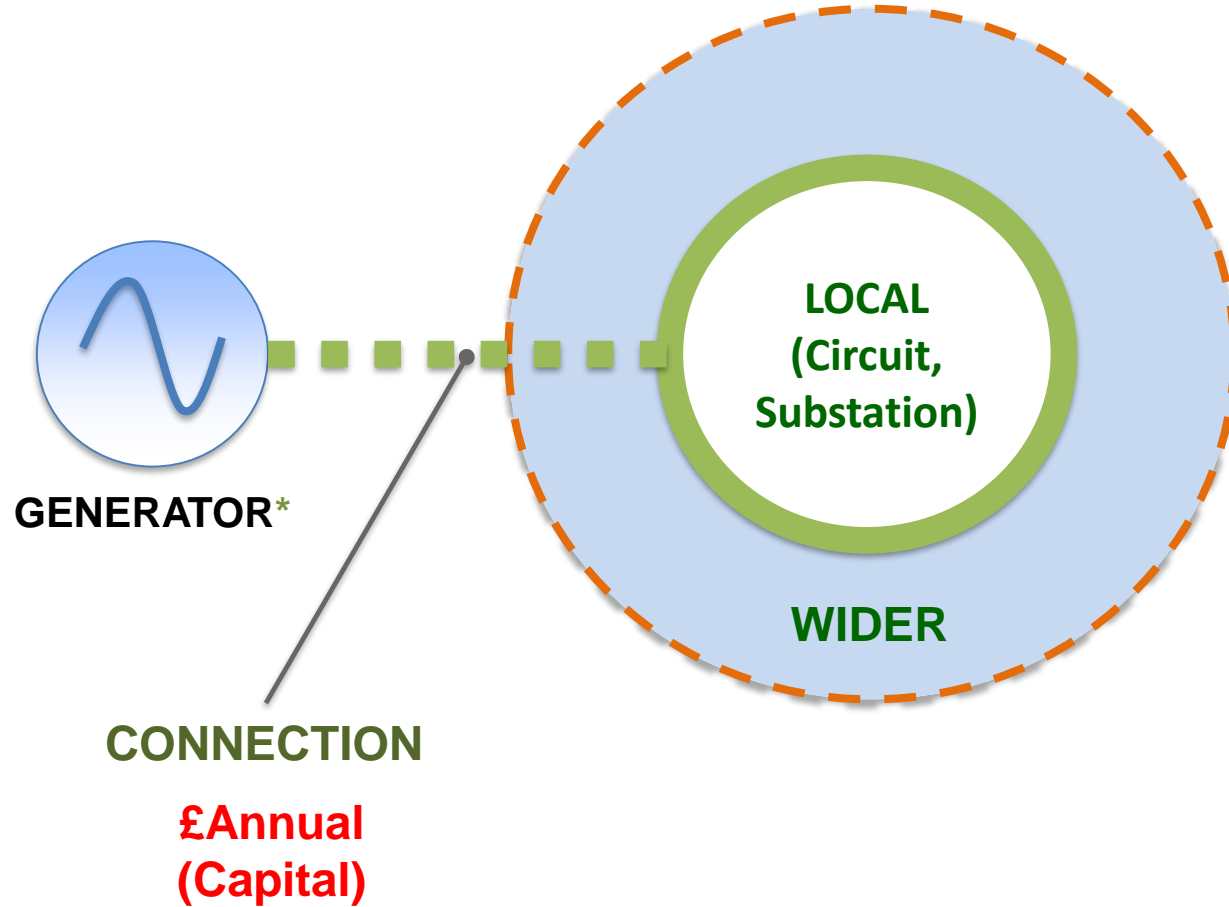


T - Transmission Charging (exc. OFTOs)



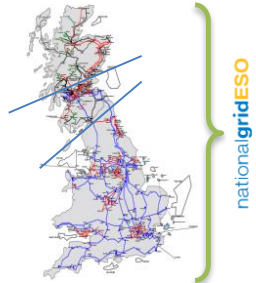
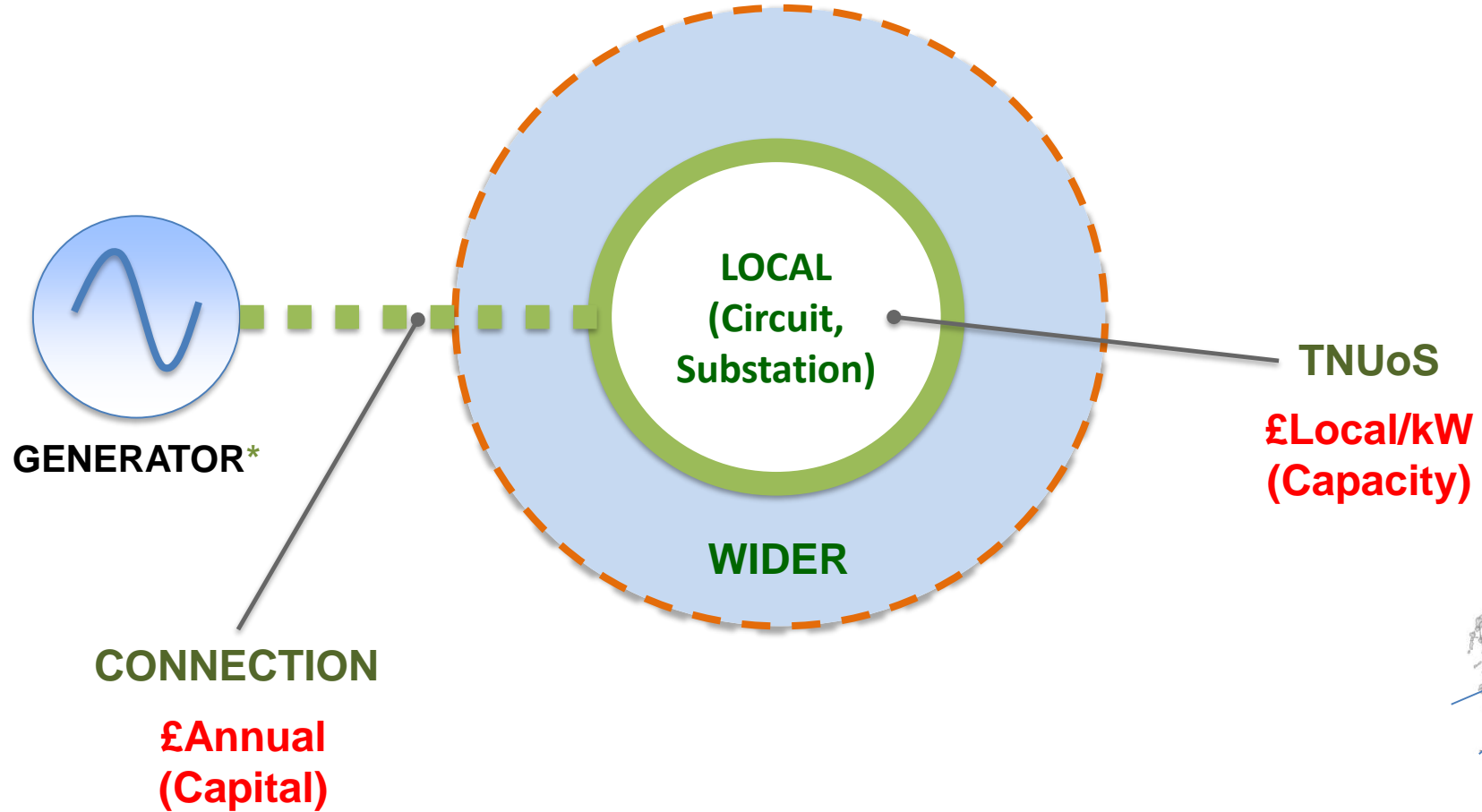
* £/kW Small Generator Discount (covers difference in size and voltage categorisation between Scotland and E&W)

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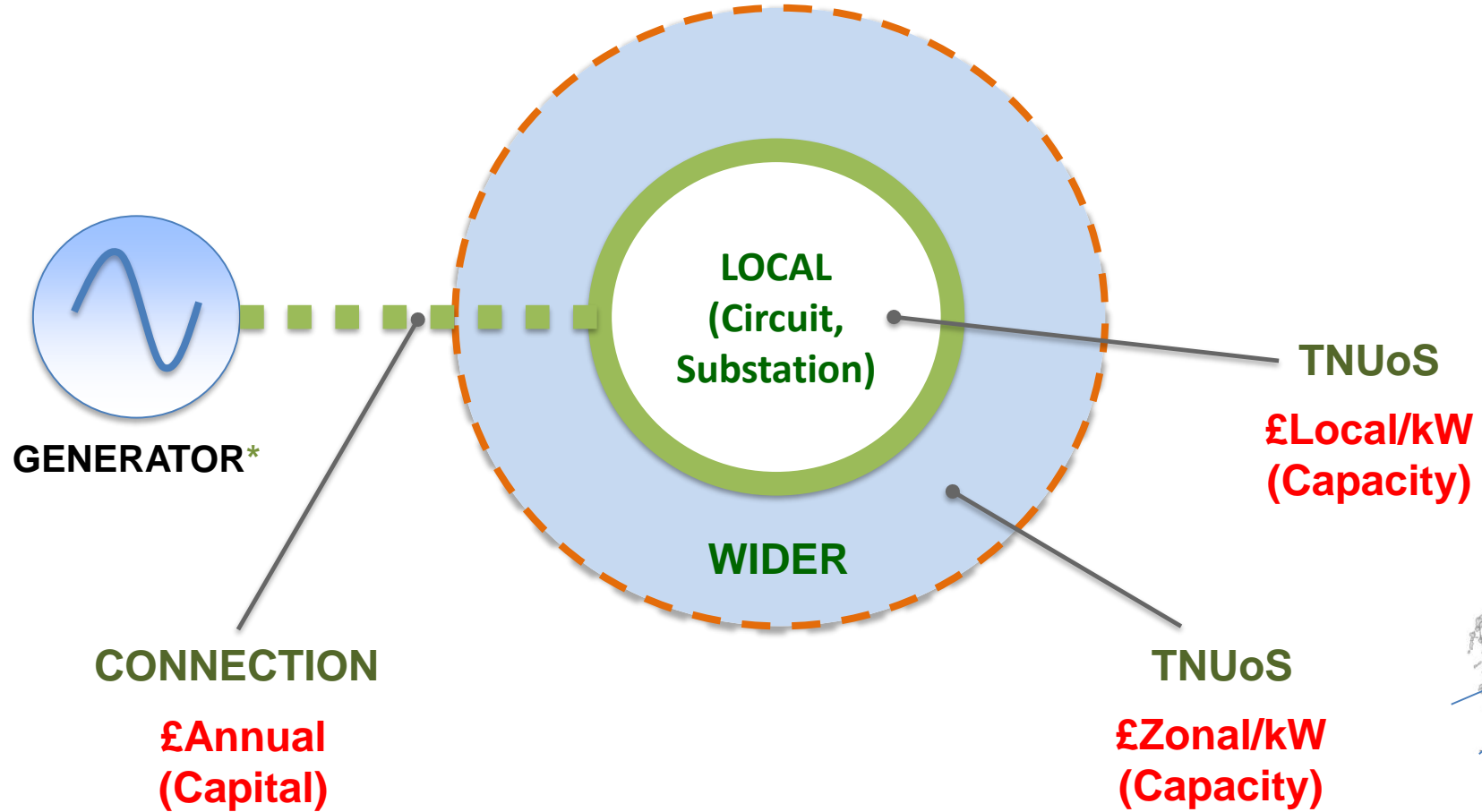
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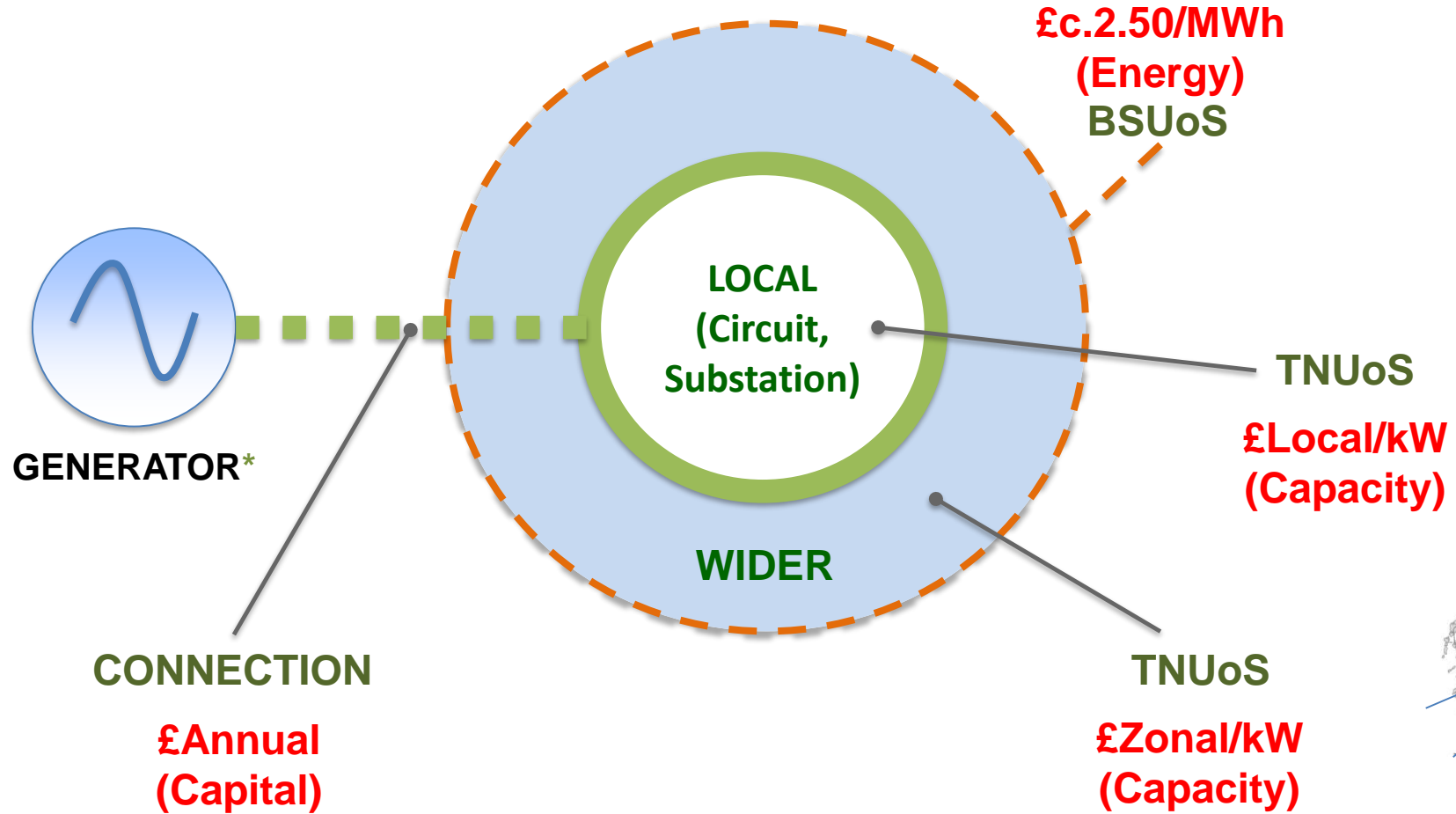
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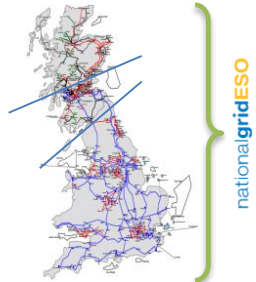
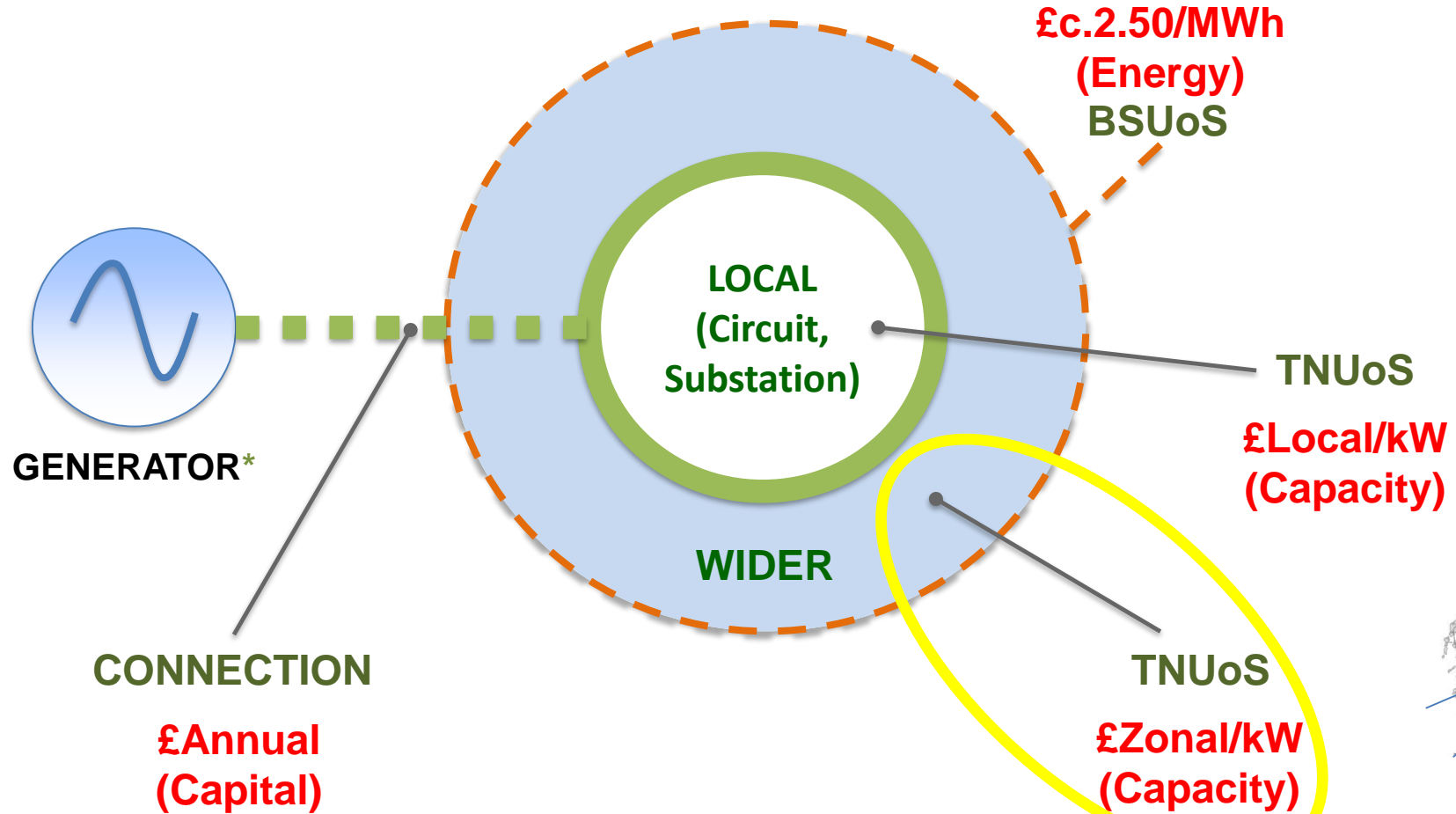
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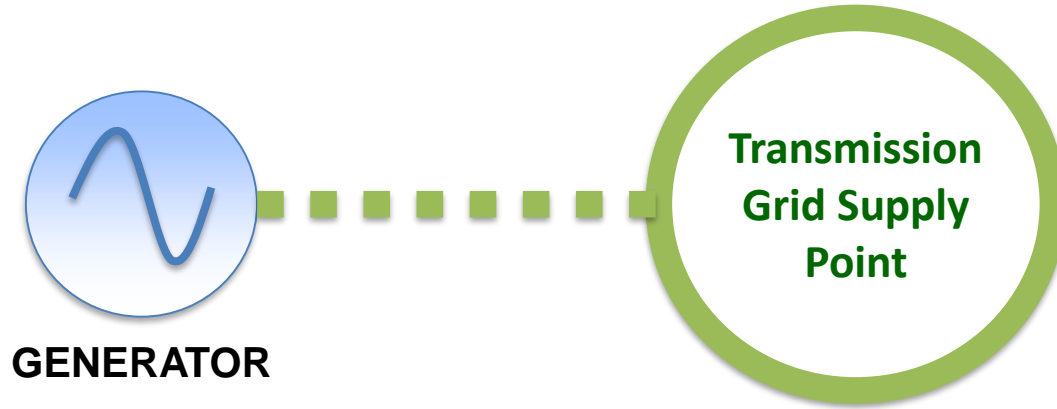
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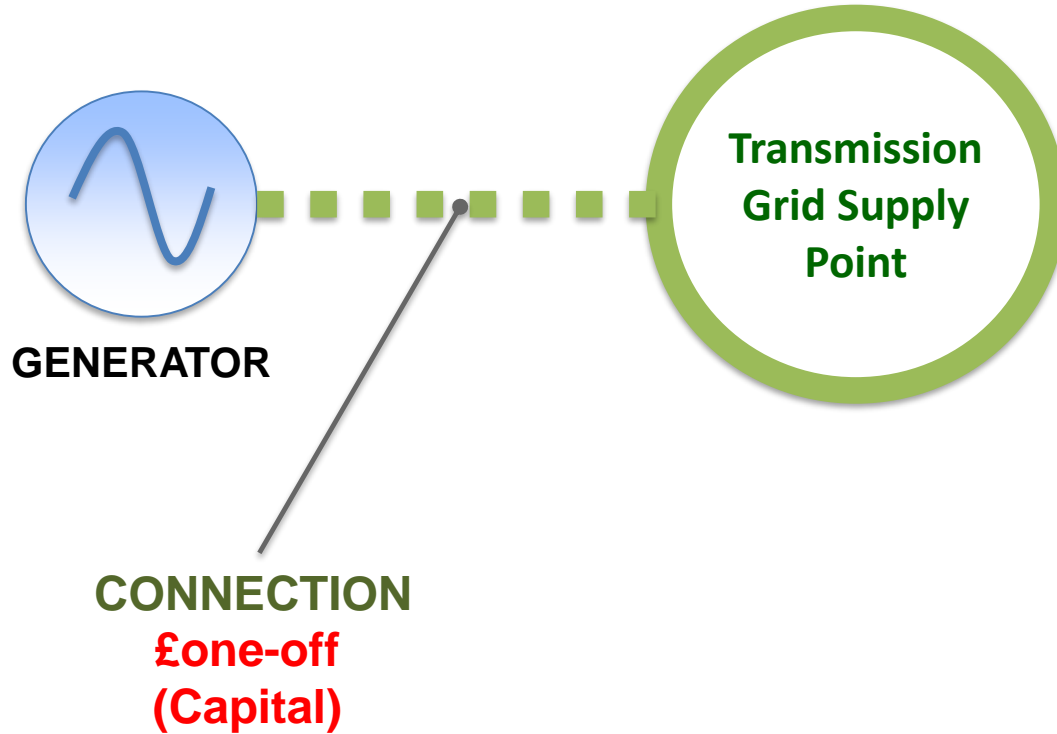


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D - Distribution Charging (GB)

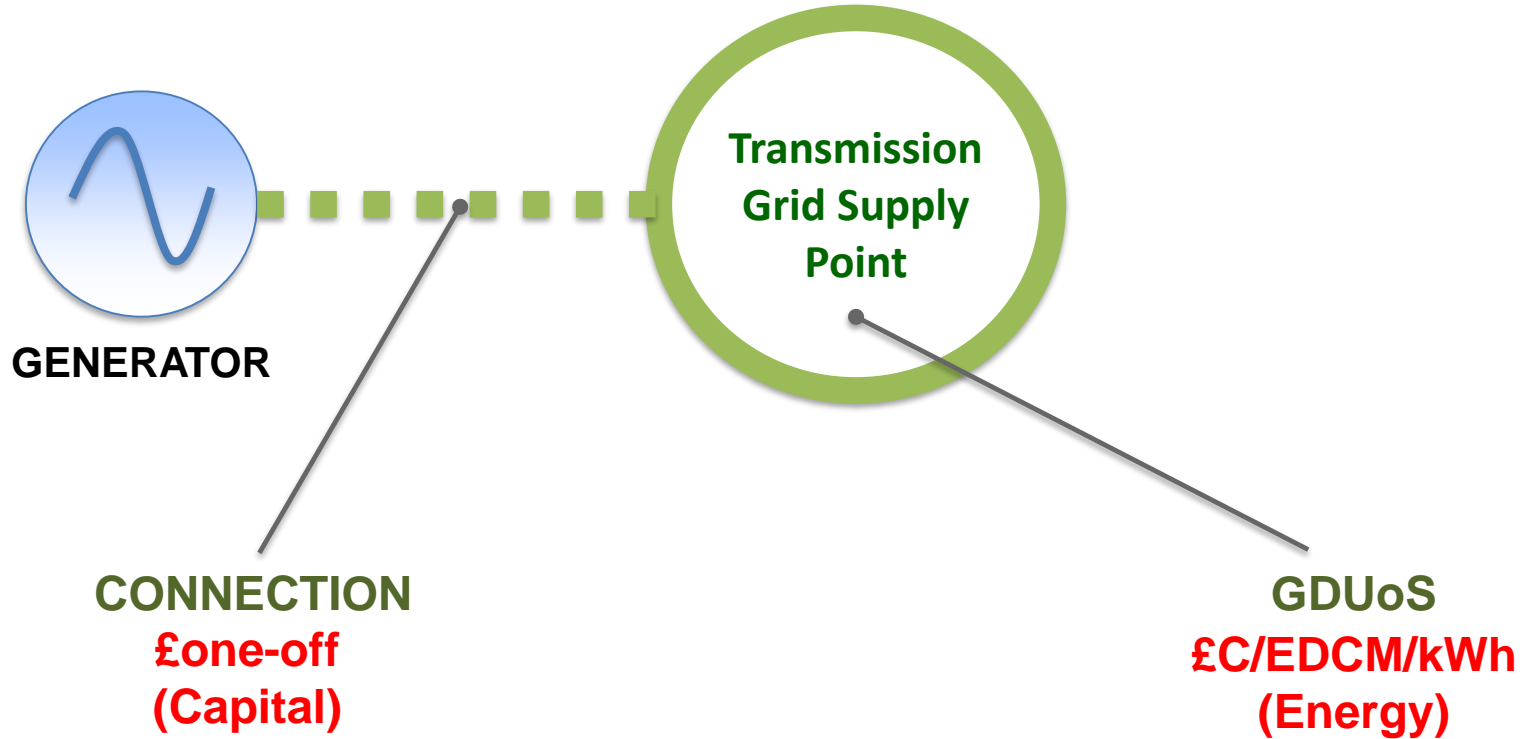


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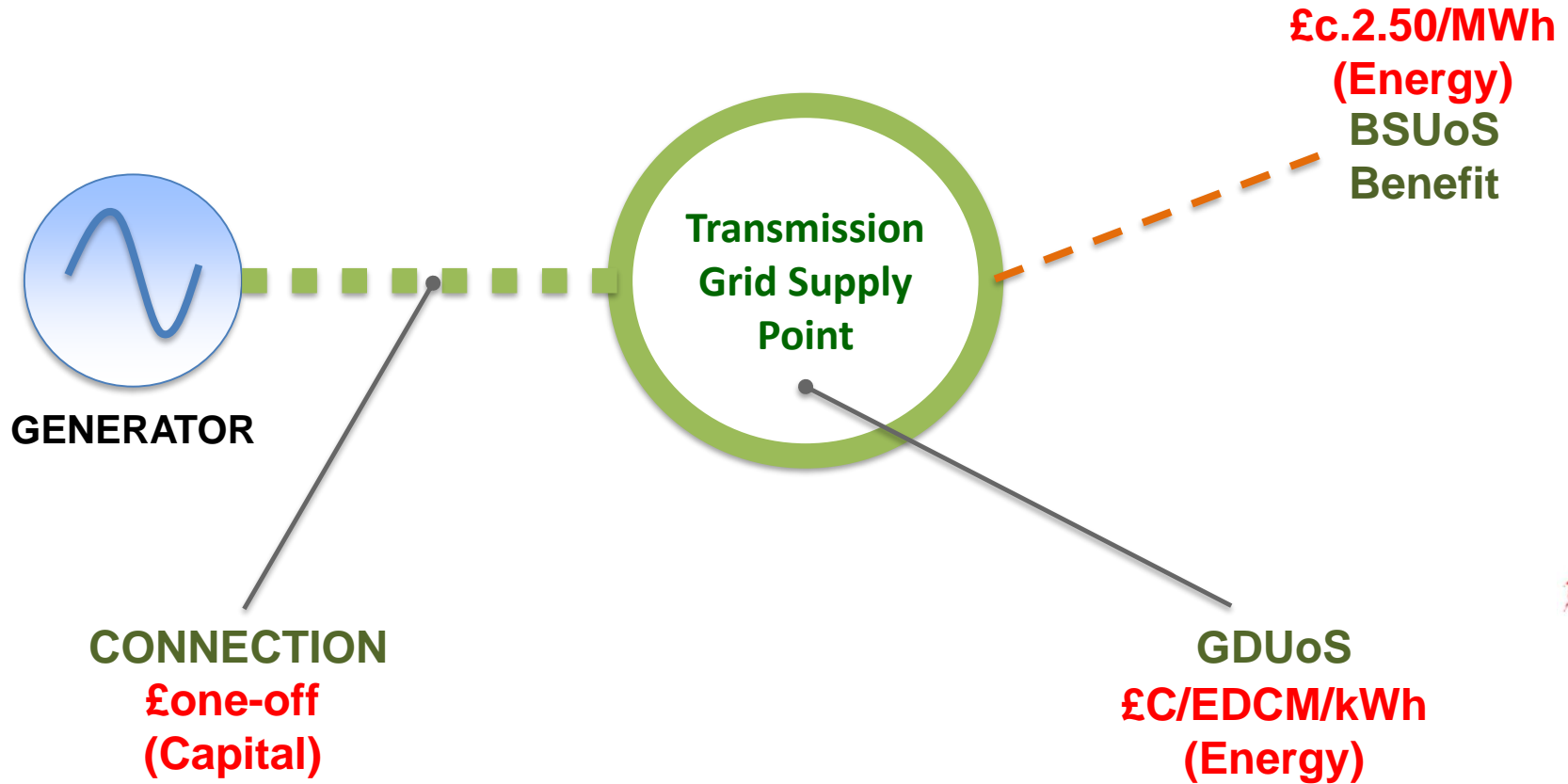
* £ Triad Benefit (phasing out)

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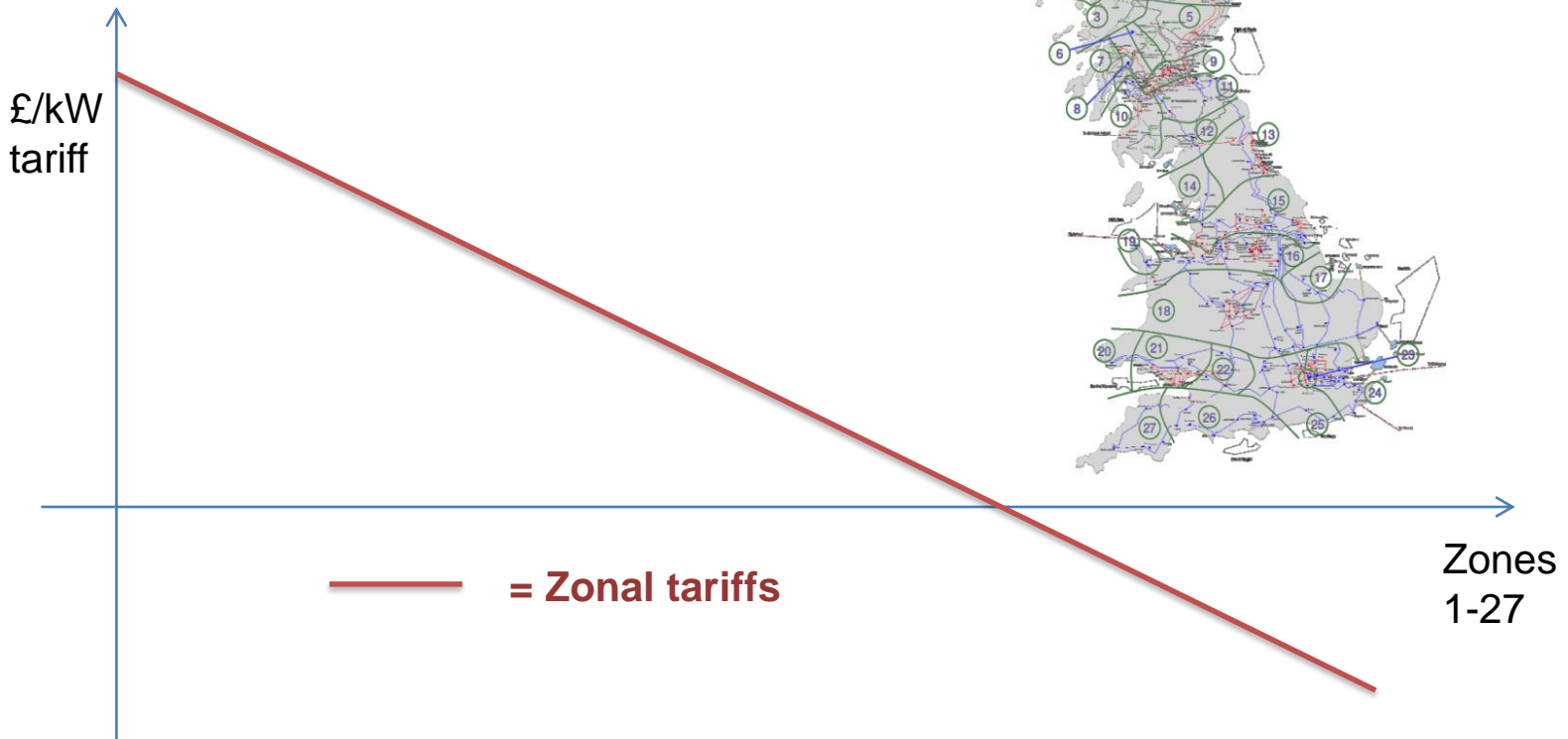
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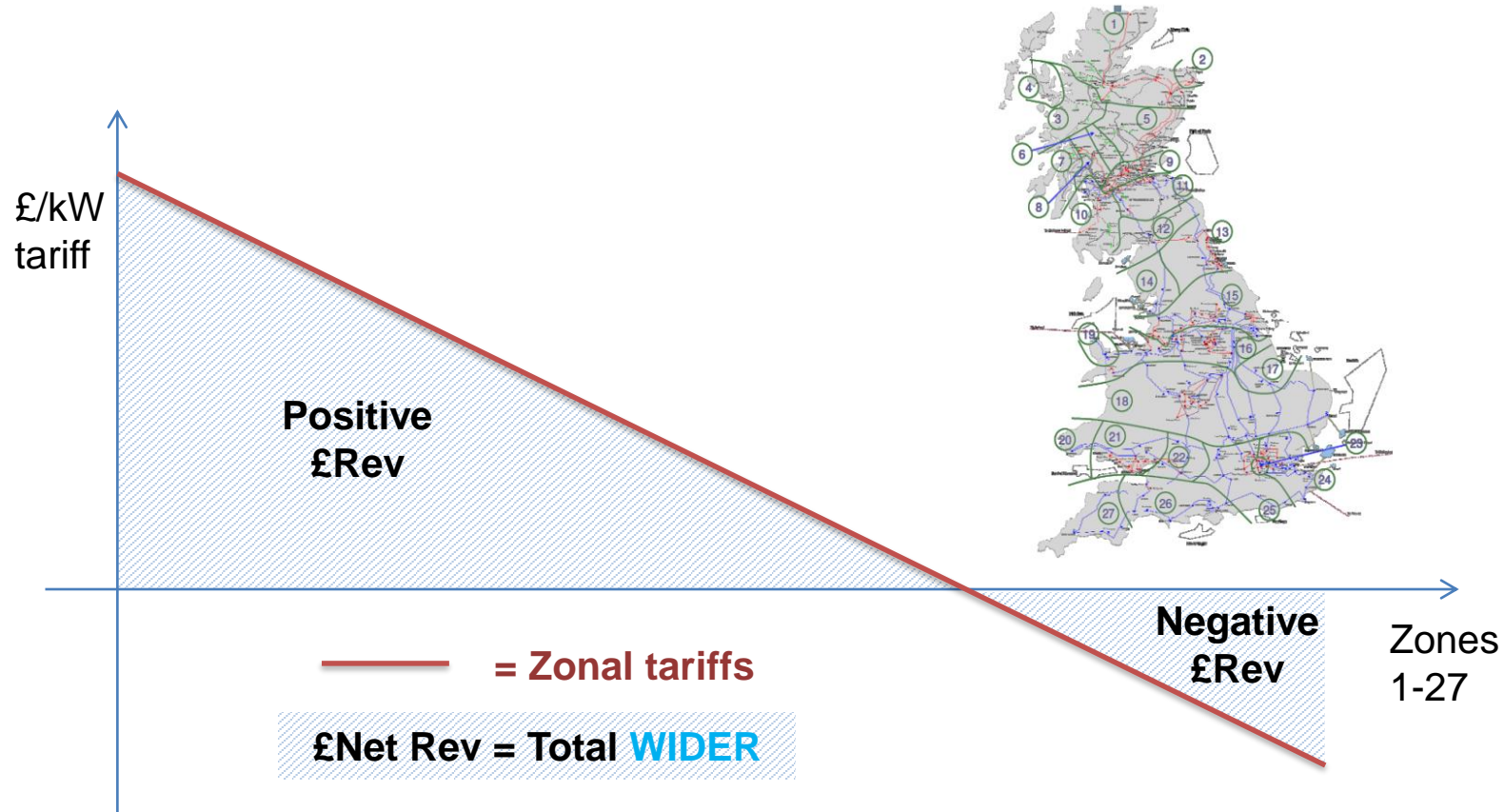


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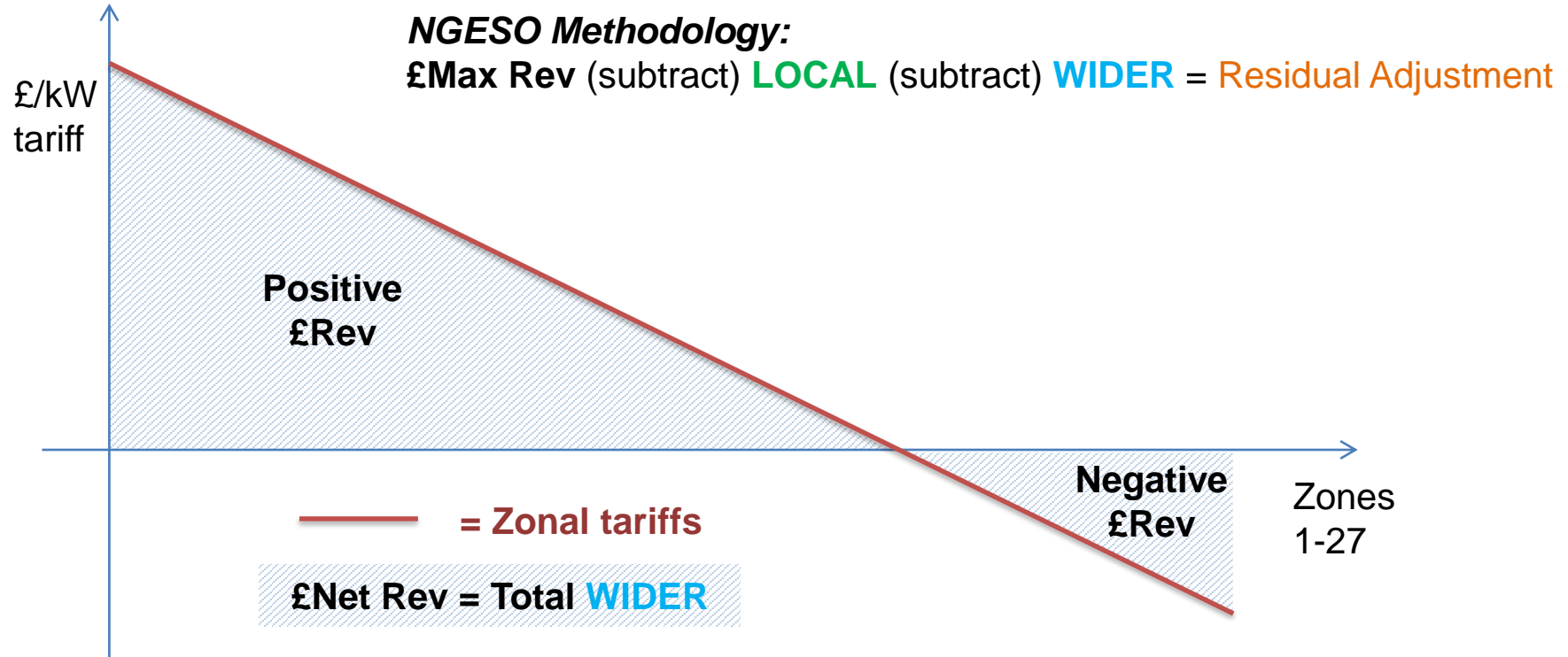
T - Generator Zonal Transmission Use of System



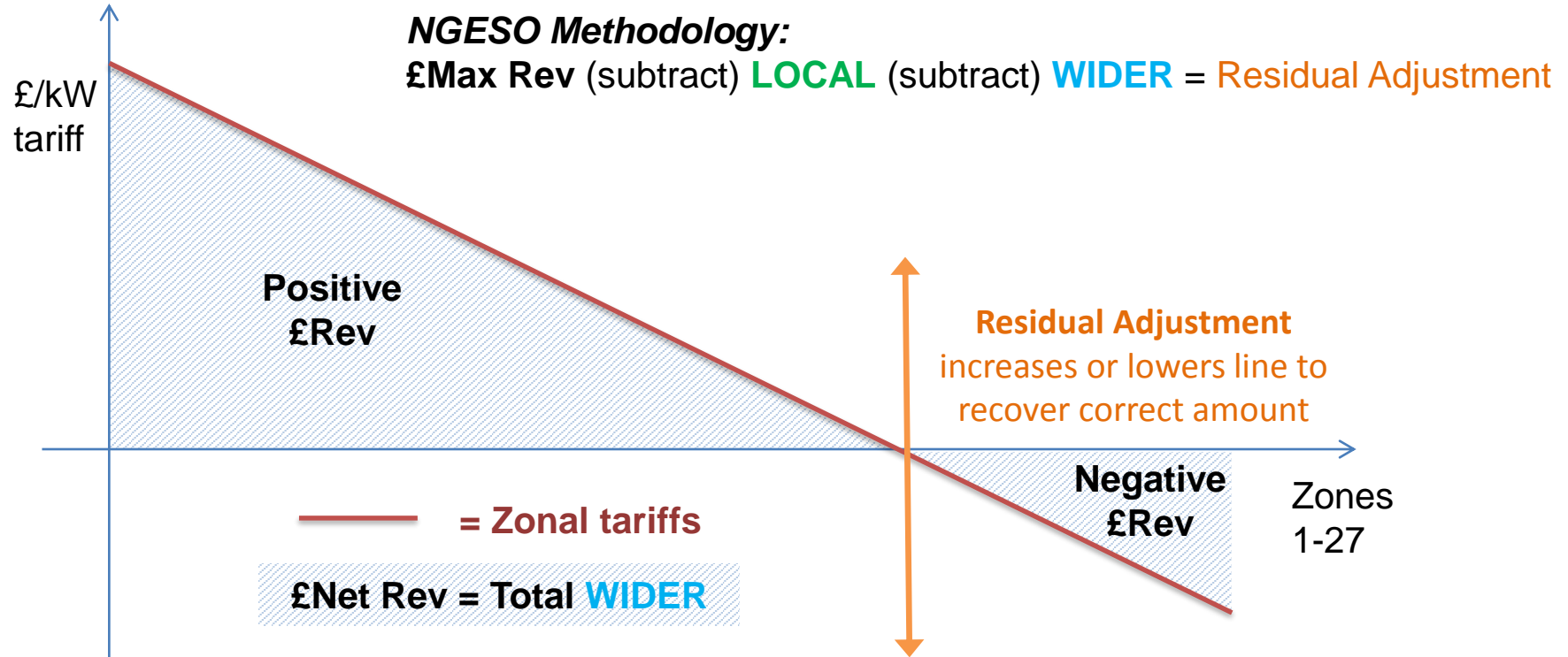
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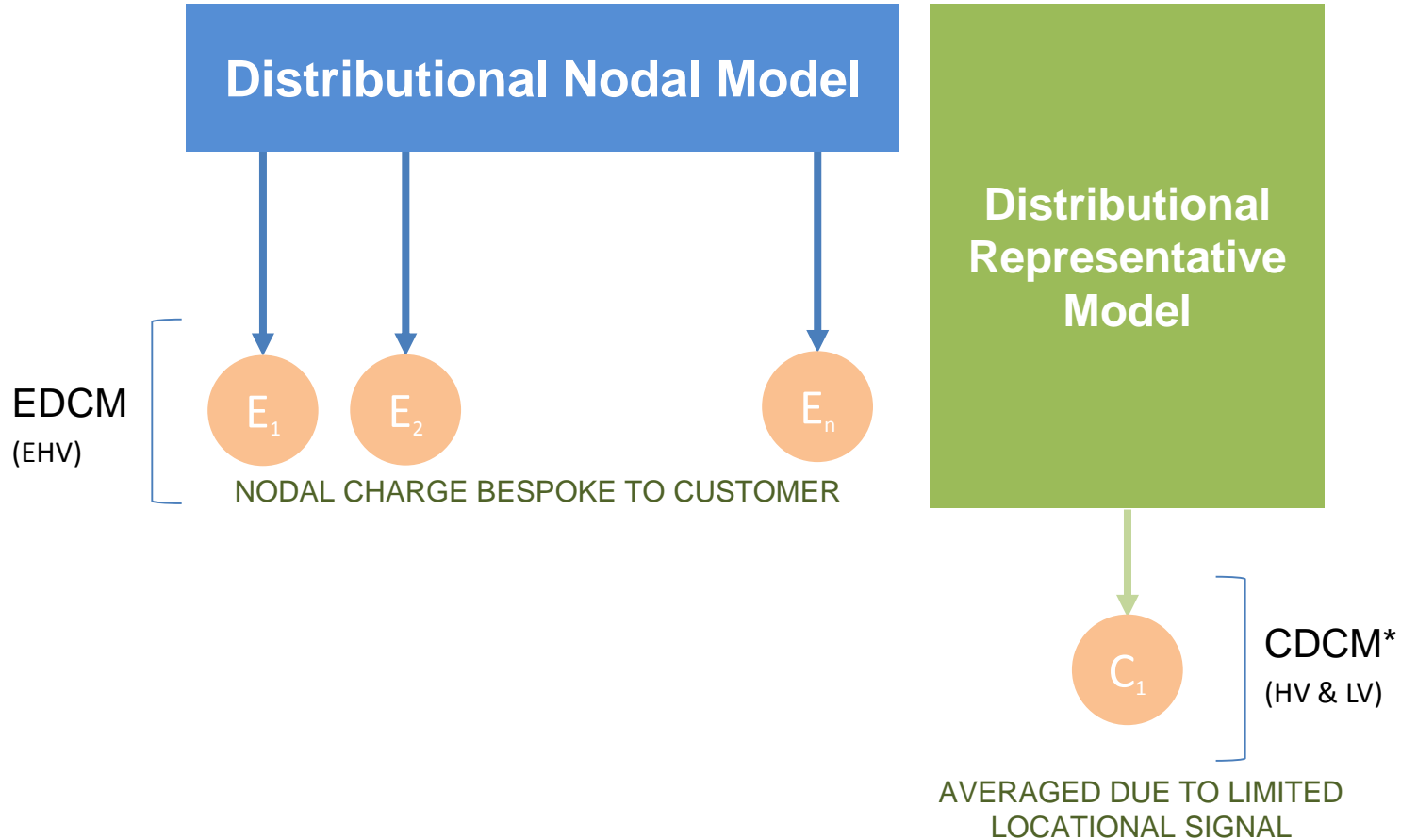
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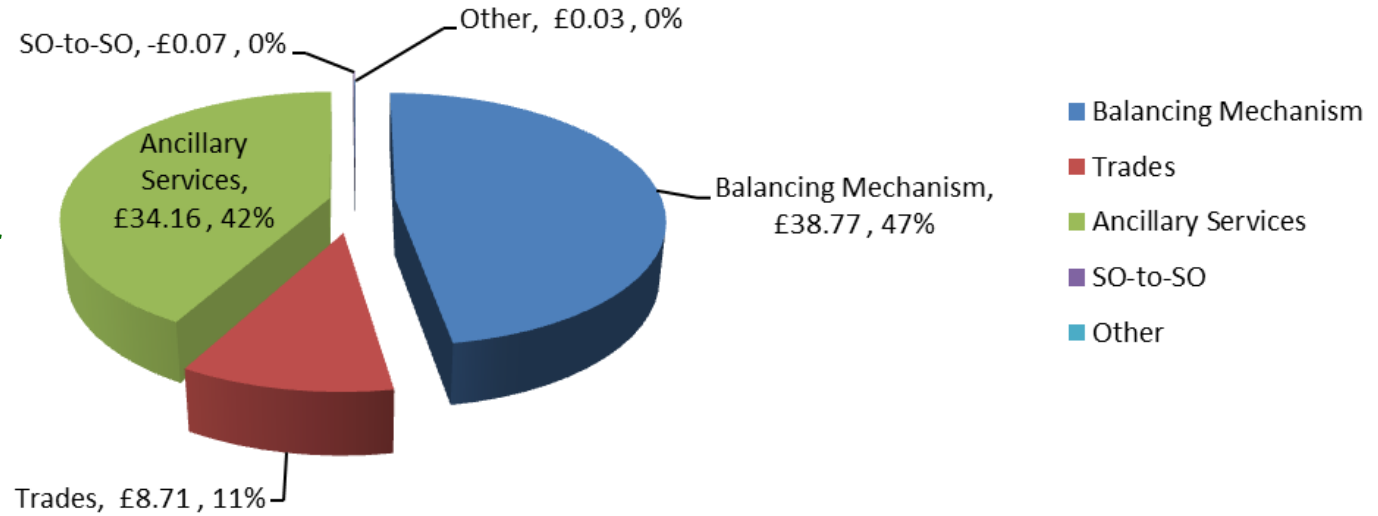
D - Generator Distribution Use of System



* CDCM charges HV and LV connected users for use of the EHV, HV and LV network

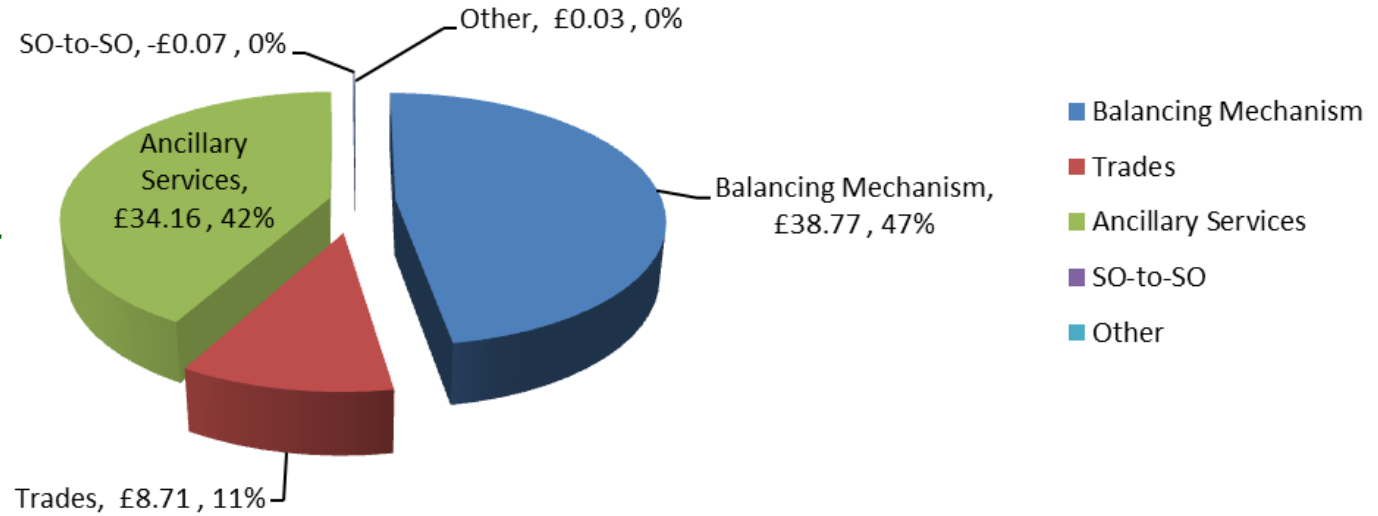
Balancing Services Use of System

*£m for
month of
April*



Balancing Services Use of System

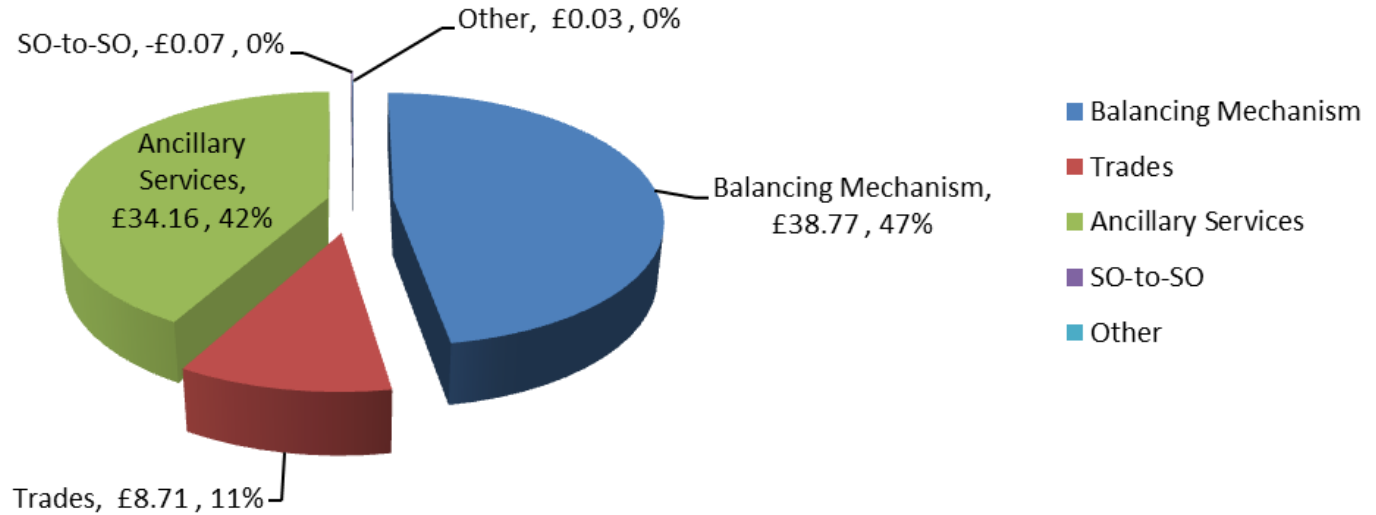
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Who Pays?

Balancing Services Use of System

£m for month of April



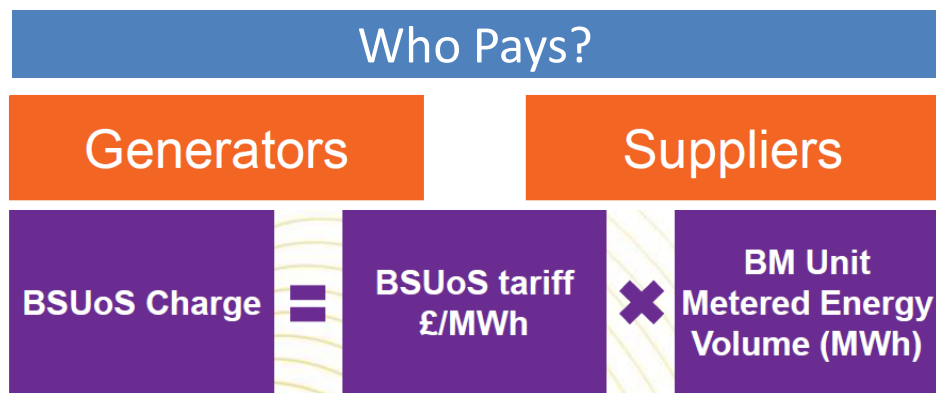
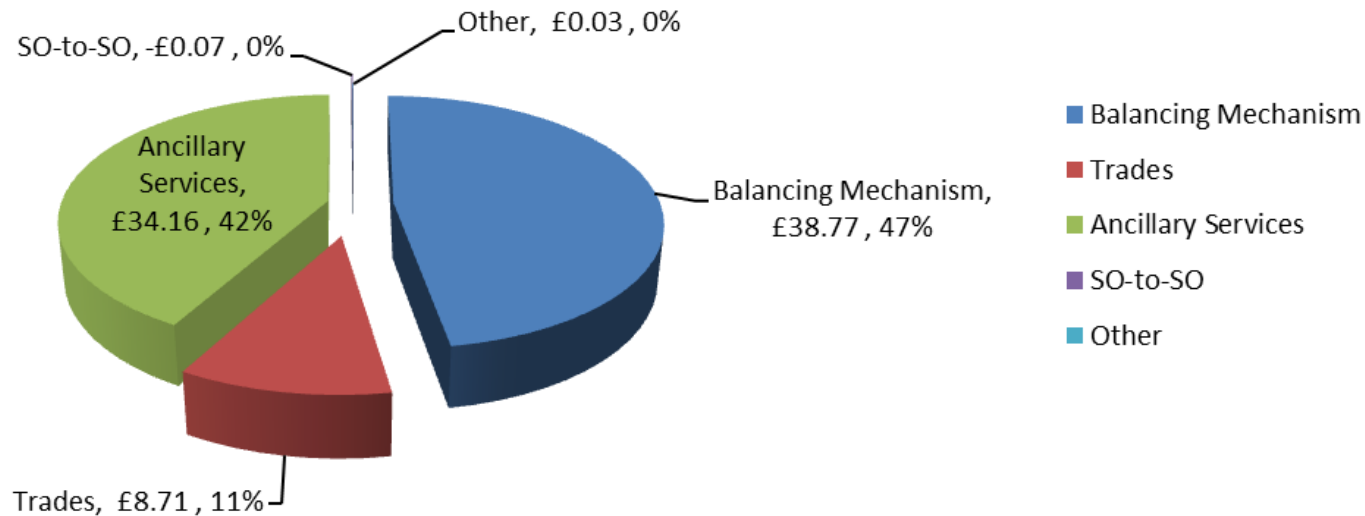
Who Pays?

Generators

Suppliers

Balancing Services Use of System

£m for month of April





**SCOTTISHPOWER
RENEWABLES**

Joe Dunn

Grid & Regulation Manager

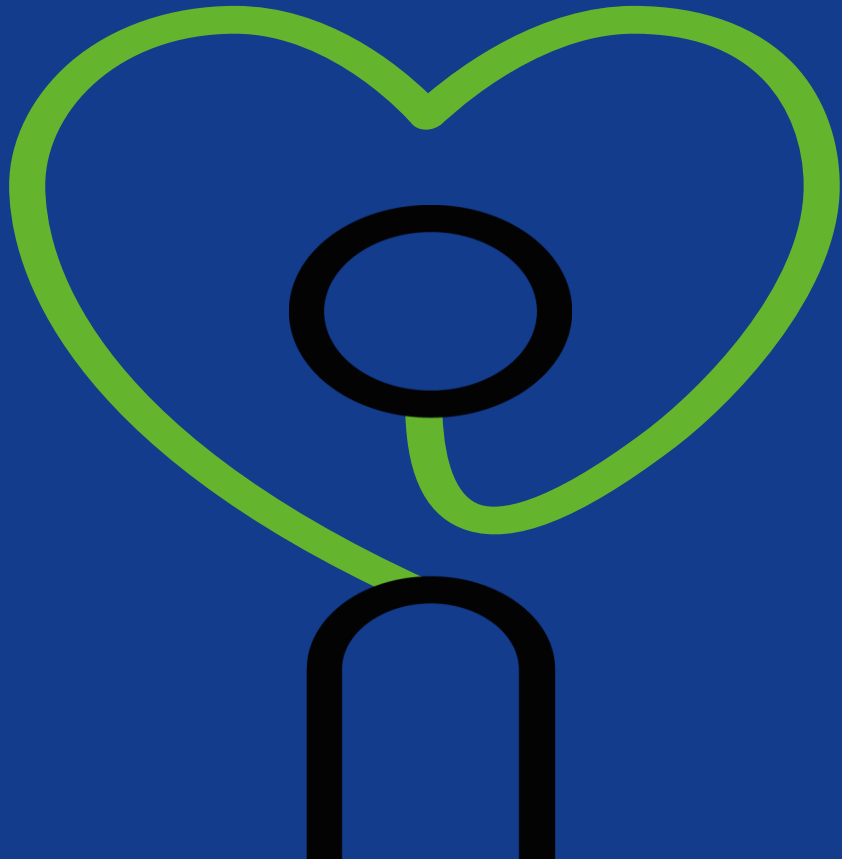
NETWORK CHARGING: BUSTING MYTHS

in 15 mins.....?





Nicola Percival
Policy & Regulations Manager
innogy Renewables UK



Regulatory reforms & grid - what could happen and when?

innogy SE · Nicola Percival · June 2019

Grid – what is going on?



Open Networks Project
Including DNO - DSO



UPGRADING OUR ENERGY SYSTEM

Smart Systems and Flexibility Plan: Progress Update

October 2018

Ofgem-BEIS joint Smart System & Flexibility Plan

Capacity Market
Future of Balancing Services
RIIO price controls
Carbon targets
CCC net zero recommendation
...



Grid – what is going on?

- There are two ongoing fundamental reviews being managed by Ofgem:

- **The Targeted Charging Review (TCR)**
- **The Electricity Network Access Project (ENAP)**
- **Effectively part 1 and part 2.**

- Both are classed as ‘**Significant Code Reviews**’ (SCRs). An SCR is a tool for Ofgem to initiate wide ranging and holistic change, often to multiple Codes.
- Industry have been **supportive of network charging reform in principle**, as the Codes were written decades ago for a system dominated by large, thermal plant. A **review to make the Codes suitable for a low carbon system** with high flexibility and lots of renewables is what was called for.

Targeted Charging Review (TCR)

Ofgem's minded-to position:

Demand residual charges – all paid by demand customers, either via fixed charges or agreed capacity-based charges. **BTM flexibility loses revenue/credit.**

Transmission Generation Residual (TGR) – set to **£0/kW, subject to compliance with the EU 'cap'**. This is currently negative, so is a loss of revenue for generators who pay G-TNUoS.

Therefore a number of actual outcomes are possible...

Remove BSUoS embedded benefits (“**partial reform**”)

Possibly also charge embedded generators <100MW (EGs) BSUoS (“**full reform**”).

Since November 2018:

Industry ‘**Task Force**’ concluded it is unfeasible to charge cost-reflective or locational **BSUoS** to influence behaviour... **effectively a ‘residual’ cost...**

Live CUSC Mod regarding BSUoS (**CMP308**).

Targeted Charging Review (TCR)

Frontier/LCP **impact assessment** commissioned by Ofgem:

- Has some **fundamental gaps**,
 - Non-CM renewables assumed not to respond to changes.
- Expects **limited system benefits**, but large shift in welfare from generators – consumers,
- **Oxera & Aurora** report that generators in general will have >> costs and welfare shift may not materialise as IA suggests,
- **Renewables particularly affected.**

Ofgem's next move?

- **Delay** earliest implementation to **2021**,
- Technical **consultation on CM & TCR** expected June,
- **Final IA** to include “analysis on the **implications for deployment of renewables**” and “**consistency in calculation of the costs of carbon emissions**”.
- **No planned consultation** on the latter...

Electricity Network Access Project (ENAP)

Included in the SCR – Ofgem-led

- > Review of the definition and choice of transmission and distribution access rights
- > Wide-ranging review of Distribution Use of System (DUoS) network charges
- > Review of distribution connection charging boundary
- > Focussed review of Transmission Network Use of System (TNUoS) charges

- Early stages, little is known for certain
- Challenge Group meets monthly
- Working papers expected in June 2019

Areas led by industry outside the SCR

- Review of balancing services charges (BSUoS)
- > Access right allocation

Excluded from the SCR and wider industry review

- > Introducing fixed duration long-term access rights
- > Introducing geographically exclusive local access rights which do not allow access to the rest of the system
- > Wider changes to transmission network charges
- > The transmission connection charging boundary

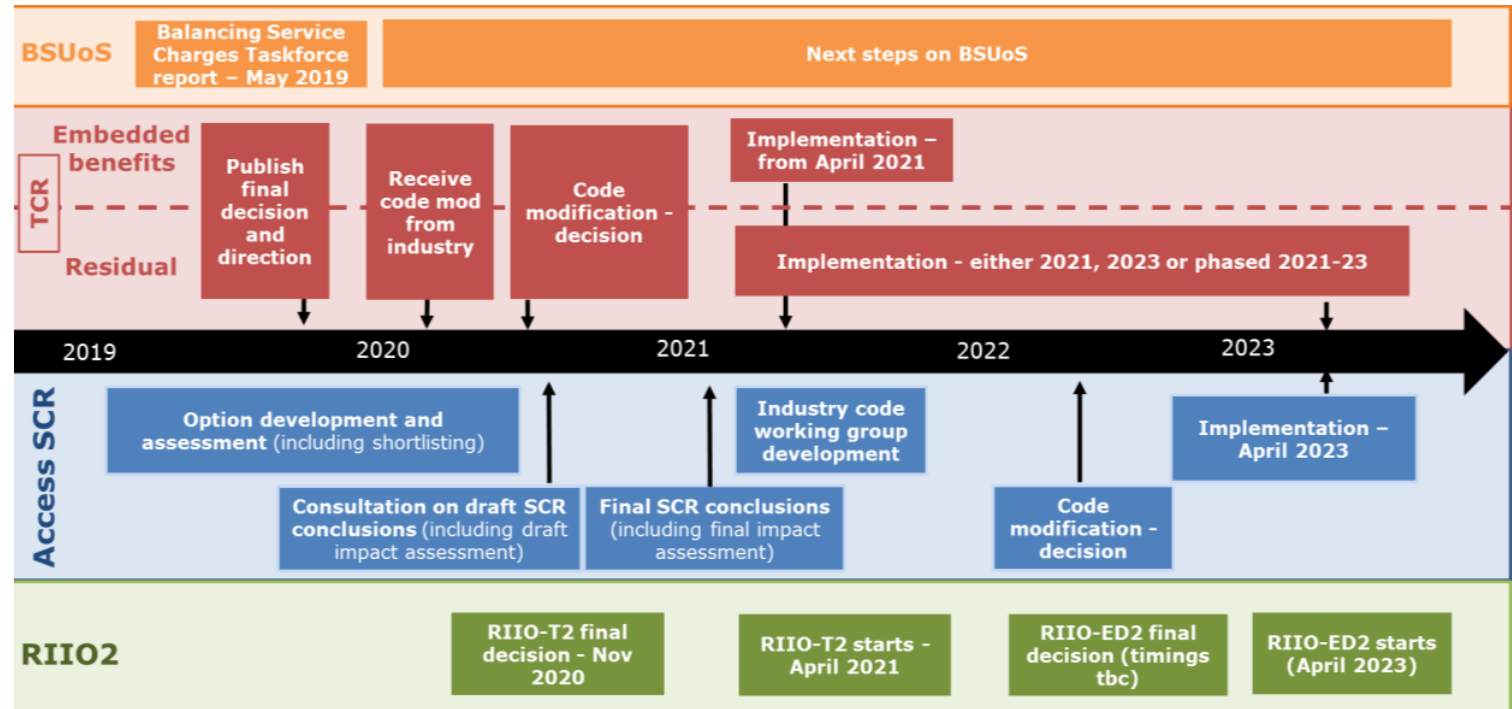
Ofgem's proposed timelines

BSUoS Embedded Benefits:

Ofgem's preferred approach is partial (remove EB) or full (remove EB and charge BSUoS) reform by 2021 subject to further analysis.

TGR: Ofgem propose by 2021.

ENAP: Proposed implementation from April 2023 (to align with RIIO-ED2).



Thank you!

nicola.percival@innogy.com



Catherine Falconer
Commercial Manager
Scottish & Southern Electricity Networks

Network Charges: What are they, and what's changing?

SR Network Charging Seminar –
10 June 2019



Scottish & Southern
Electricity Networks

Headline objective from Ofgem

We want to ensure electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills in general.

Put simply..

An evolving system

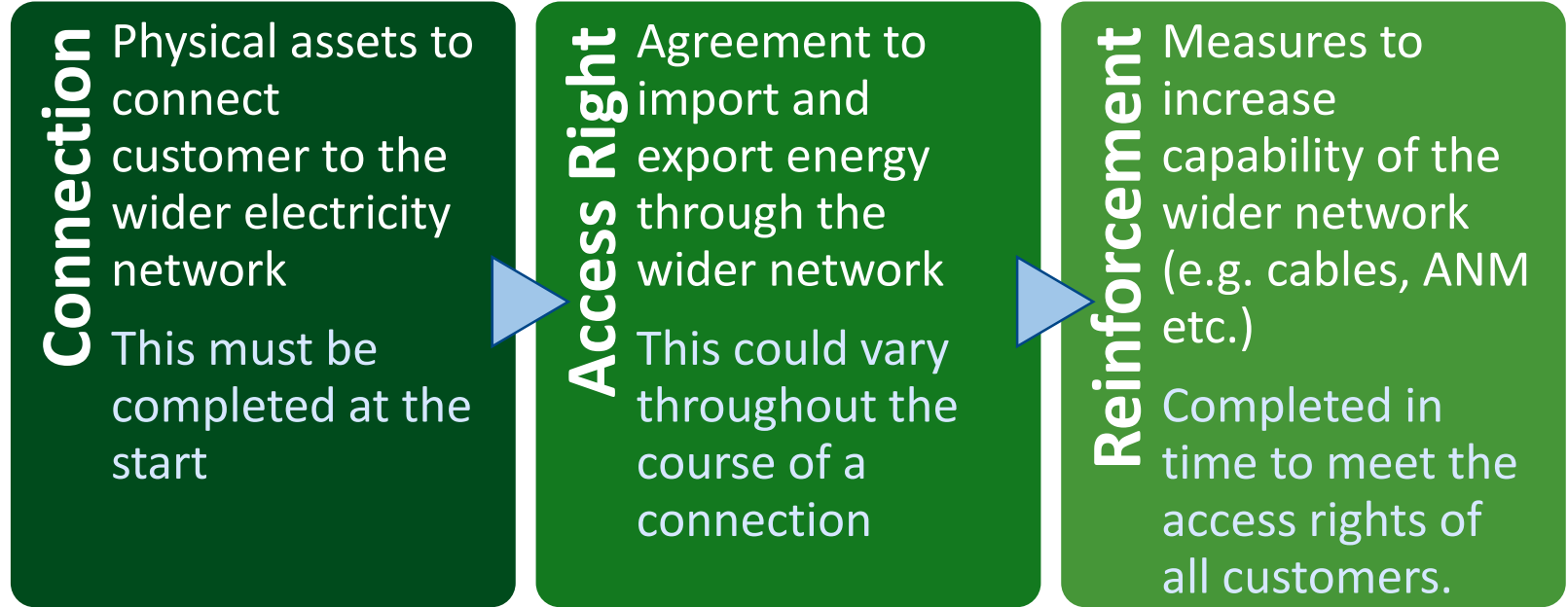
Our energy system is evolving. Who uses the GB network and how they use it is different today than it was a decade ago. We have the opportunity to operate our electricity system more flexibly and efficiently for the benefit of end consumers.



The charging challenge

The access and charging arrangements behind our electricity network need to evolve to create a level playing field, recover revenue in a fair way, and reduce distortions. This is a big task for GB's network companies, network users and their customers.

To connect and remain connected



Access Rights and Forward-looking Charges

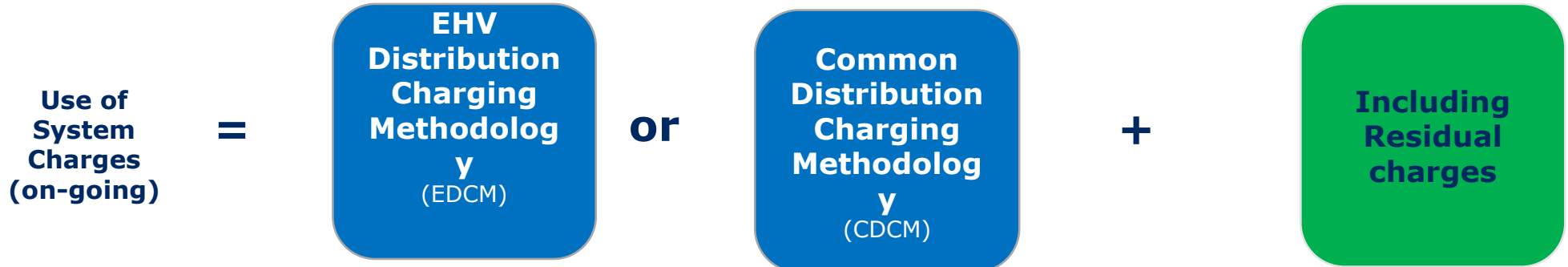
Access rights

- Defining the right to use the network (ie either importing or exporting electricity over it).
- Need better definition of access rights
- and what choices should be available.
- Separate Ofgem/ENA workstream looking at improvements to how access rights are allocated.

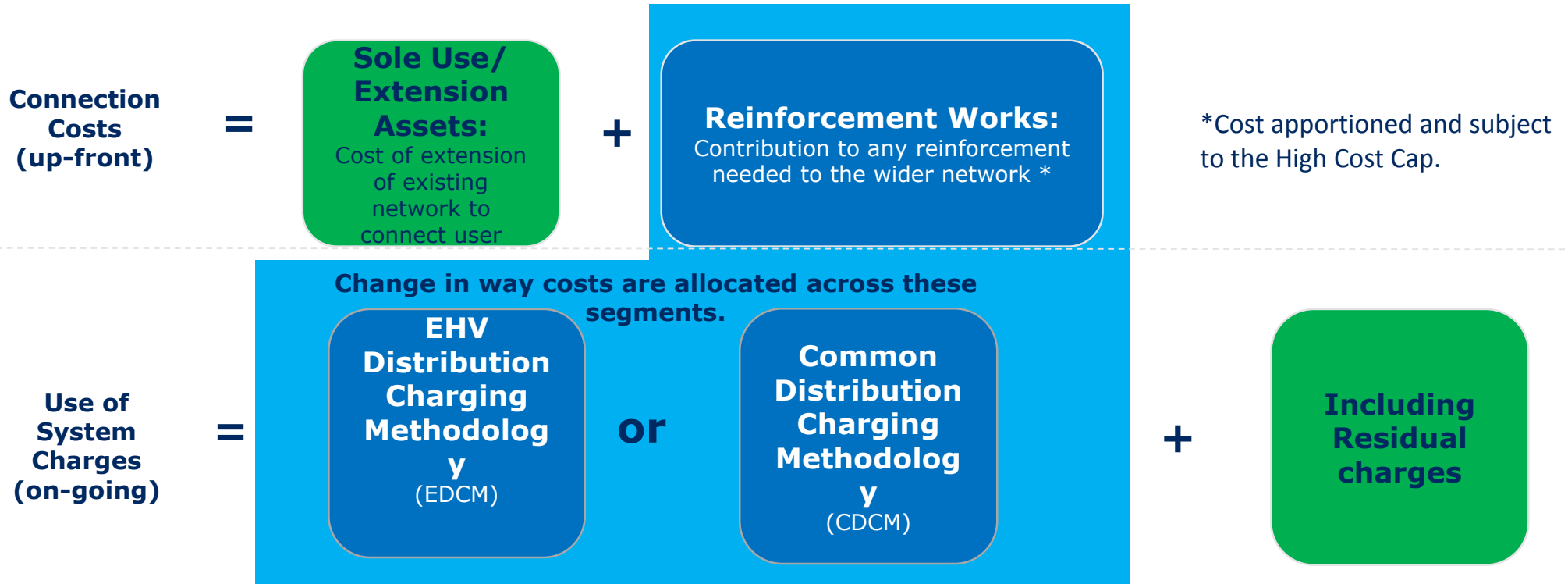
Network charges

- Made up of forward-looking and residual elements.
- Forward-looking elements signals how users' decisions can increase or reduce future network costs,
- Residual charges make up the remainder of network companies' allowed revenues.
- Improvements to forward-looking charging signals.

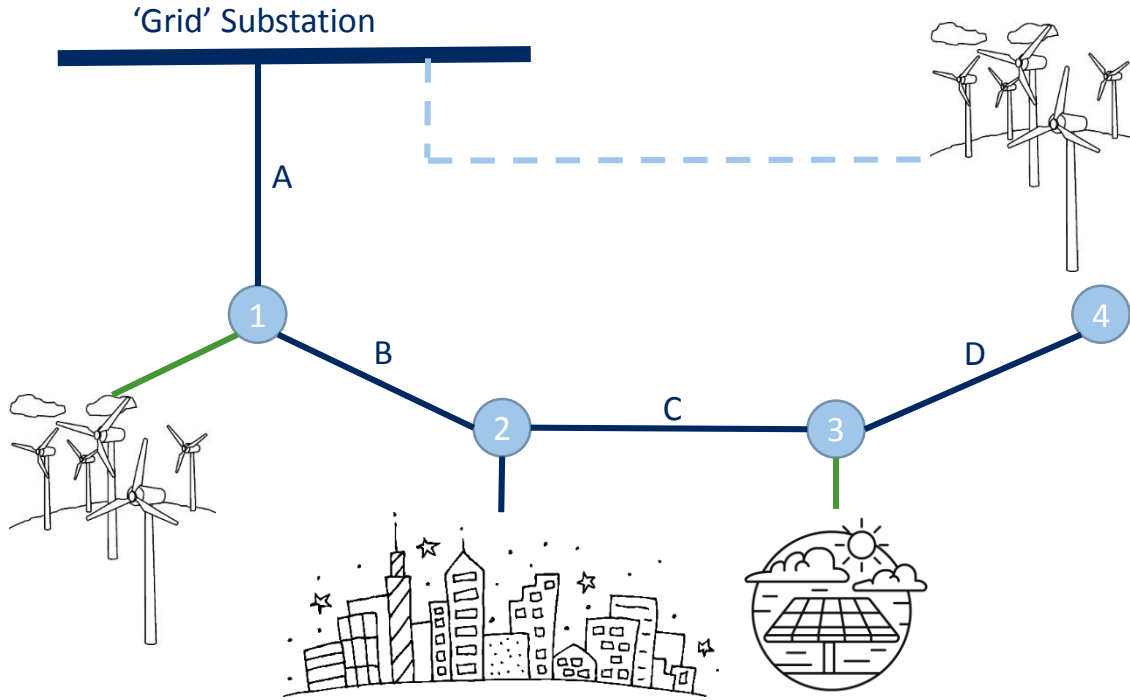
Where the costs and charges sit...



.... And one of the Options being considered.



A Real Example....



There is not enough existing network capacity to connect the new wind farm at location 4. Should we build a dedicated new circuit (£1M), rebuild the existing network (£1.5M) or install an intertrip or ANM?

Today's shallow-ish boundary means we must offer the minimum scheme – build a dedicated new circuit.

In the long run the most efficient option is to install ANM and then rebuild the existing circuit when the time is right.

Next steps?

- There is a lot more still to decide than has yet been decided. This is your time to influence this.
 - ✓ Protects Vulnerable Customers
 - ✓ Correctly allocates options
 - ✓ Economically efficient outcomes for UK
- How do you plan to engage in this process Nationally?
- How can SSEN make sure we are working with you and gathering your views? What more would you like to see from SSEN?



Keith Patterson
Partner
Brodies LLP



Nationalising the Energy Network

Keith Patterson, Brodies LLP

10 June 2019

What is Labour Proposing?

- Nationalise the TSO – NGENSO Limited
- Nationalise the TNO for England & Wales – NGET plc
- Nationalise the TOs for Scotland – SHET plc and SPT plc
- NI?
- Nationalise each DNO across the UK
- Nationalise each OFTO
- Nationalise the “UK side of each interconnector”
- And all the gas network companies...
- And part of Ofgem’s functions...

Essentially all network owners

Bringing Energy Home



National Energy Agency

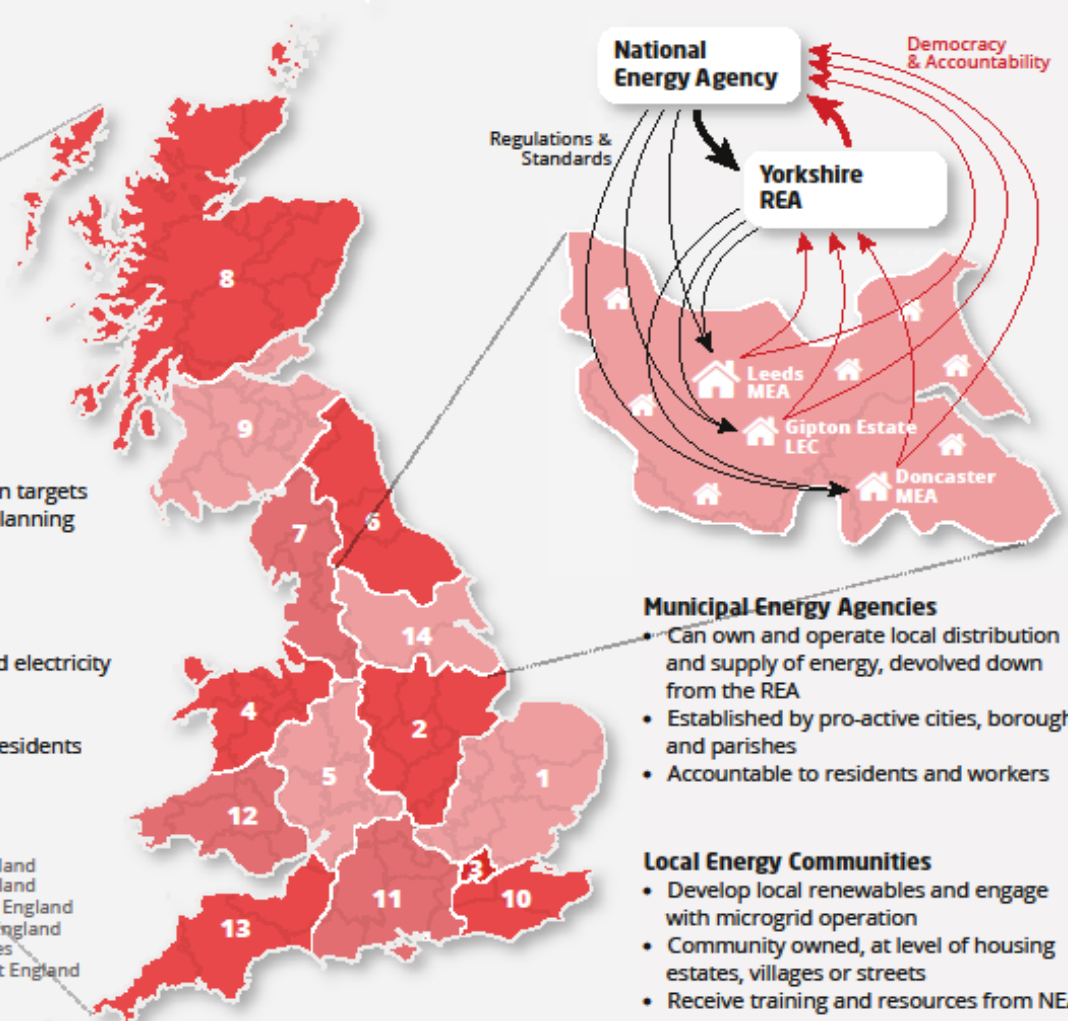
- Owns and runs high voltage transmission
- Regulates energy system
- Sets regional decarbonisation targets
- National skills & workforce planning

Regional Energy Agencies

- Own electricity and gas distribution
- Responsible for decarbonising heat and electricity
- Responsible for fuel poverty
- Drive regional industrial strategies
- Accountable to councils, workers and residents

Map Legend (REAs)

1 East England	8 North Scotland
2 East Midlands	9 South Scotland
3 London	10 South East England
4 N. Wales, Merseyside & Cheshire	11 Southern England
5 West Midlands	12 South Wales
6 North East England	13 South West England
7 North West England	14 Yorkshire



Municipal Energy Agencies

- Can own and operate local distribution and supply of energy, devolved down from the REA
- Established by pro-active cities, boroughs and parishes
- Accountable to residents and workers

Local Energy Communities

- Develop local renewables and engage with microgrid operation
- Community owned, at level of housing estates, villages or streets
- Receive training and resources from NEA

[The page contains several columns of dense, handwritten text in a historical script, likely Latin or Italian. The text is highly abraded and difficult to decipher. It appears to be a historical document or a list of names and titles. Some legible fragments include names like 'Alfonso', 'Catalonia', and 'Catalonia'. There are also several headings and sub-sections, though they are mostly illegible due to the condition of the page.]

[A line of text at the bottom of the page, possibly a signature or a reference. It is also mostly illegible, but some words like 'Alfonso' and 'Catalonia' are visible.]



How will Labour Achieve This?

- Create holding vehicle owned by Government (one for both electricity and gas)
- Act of Parliament transfers all shares in the nationalised companies from existing shareholders to the Government owned holding vehicle
- Act of Parliament sets the level of compensation payable to existing shareholders
- Valuing the shares – Labour has identified a number of deductibles from market value
- Refinancing the debt – nationalisation or change in ownership clauses may trigger default or early redemption provisions, which will increase cost of nationalising
- The Act of Parliament has to be written first and that will take time, and it is likely to be fiercely debated in and outside Parliament
- It may be quicker than Brexit, but not much...

Will Shareholders Challenge the Government?

- If transfer valuations are below market value, almost certainly
- Shareholders could challenge the process under
 - Energy Charter Treaty
 - European Convention on Human Rights
 - Bilateral Investment Treaties
- To take advantage of these avenues, a shareholder needs to be based in a signatory state
- UK shareholders could have benefit of ECHR claims while certain overseas shareholders would have benefit of BIT claims
- BIT claims have a more solid legal foundation than ECHR claims and are in particular generally entitled to market value compensation
- Awkwardly, that could result in foreign shareholders being entitled to higher compensation than UK shareholders, mostly UK pension funds

Will it happen?

- Labour has said that nationalising water companies is its priority
- It also says this: “Energy distribution and transmission will be brought into public ownership immediately”
- It is theoretically possible to nationalise more than one industry in a single Act of Parliament
- Reducing the risk of challenge means enacting the detail in the Act of Parliament rather than in secondary legislation
- Complexity and risk of paralysis means that sector by sector nationalisation is more likely, with water likely to come first
- Labour will need a workable majority in Parliament to pass the legislation, which may require the support of the SNP or Lib Dems or both
- This may in practice limit Labour’s nationalisation plans
- SNP may also want the Scottish Government to own the Scottish network

Will nationalisation affect network charges?

- If it implements these plans, the Government will have control of the charging regimes and would have the power to change them
- It will be constrained by law in doing so – for example, EU law and UK competition law
- It will also be constrained by UK regulatory law – but Labour says it take control of some of Ofgem’s functions and appears likely to amend the regulatory framework
- EU law, in particular, the recently enacted Energy Package, requires member states to maintain certain regulatory functions
- Nonetheless these constraints will not prevent Labour from making changes to the network charging regimes, albeit they might limit what Labour can do
- Labour could therefore seek to modify charging regimes to reflect Labour policy priorities

What policies might affect network charges?

- What are Labour energy policy priorities?
- Both environmental and social
- Social
 - Affordability of energy to consumers – but no proposal to nationalise energy supply
- Environmental
 - Ensure “60% of energy comes from low carbon or renewable sources within 12 years”
 - “Upgrade and invest in flexible energy networks”
 - Provide the “necessary investment to connect renewable energy sources to the grid”
 - “Remove the barriers to onshore wind”
- These objectives appear to signal a more favourable outlook for renewables in network charging reform

What policies might affect network charges? (2)

- Networks should be “pro-active initiating electricity connections to parts of the country with high solar, wind and tidal”
 - *Suggests Labour will enable the construction of new capacity to remote regions ahead of development*
- “Grid operators are notorious for delays in connecting new renewable generation...”
 - *Suggests again construction of new capacity ahead of development*
- “...and over-charging clean energy developers...”
 - *Suggests (possibly) that locational charging could be reformed and/or that connection charges could be socialised*
- “Distribution operators will have...the direct responsibility to deliver electricity...with carbon intensity levels consistent with ambitious climate change targets”
 - *Suggests (possibly) priority connection rights for renewables and a more favourable charging regime*

Conclusion

- The electricity networks could be nationalised if Labour wins power
- Energy supply and energy generation are not nationalisation targets
- Labour is signalling a more renewables friendly policy than the current Government
- But tension between social policy objective of alleviating fuel poverty and environmental policy objective of achieving more renewable generation
- Charging reform which favours renewables may require primary legislation
- Now is the time to engage to ensure that enabling provisions are included in the Nationalisation Act

Contact Details



Keith Patterson

PARTNER, CO-HEAD RENEWABLES

+44 (0)131 656 0059

Keith.patterson@brodies.com

Claire Mack
Chief Executive, Scottish Renewables

Joseph Dunn
Grid & Regulation Manager, ScottishPower Renewables

Nicola Percival
Policy & Regulations Manager, innogy Renewables UK

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Keith Patterson
Partner, Brodies LLP



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SR Business Impacts of Network Charging Reform Seminar

What does charging reform mean for Scotland's renewable energy sector?



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Hannah Smith

Senior Policy Manager
Scottish Renewables



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Hannah Smith
Senior Policy Manager, Scottish Renewables

Patrick Smart
Energy Networks Director, RES

Dr Gavin Catto
Director, Green Cat Renewables

Adam Morrison
Head of Electrical, EDP Renewables

Marc Smeed
Principal Consultant, Xero Energy



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