Transmission Charging Methodologies Forum and CUSC Issues Steering Group

Meeting 97

10 July 2019

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Welcome

Jon Wisdom

National Grid ESO

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Today's agenda

#	Item
1	Introduction, meeting objectives and review of previous actions
	CISG
2	Code modifications update
3	Queue management and interactivity update
4	RIIO-2 update: Develop codes and charging arrangements that are fit for the future
5	Reforming Energy Code Content
	TCMF
6	Reviewing TNUoS generation zones for RIIO2
	AOB
	Close

No open actions

CUSC Issues Steering Group (CISG)

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Code Administrator Update

Rachel Hinsley,

National Grid ESO

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New modifications

New Non- Urgent Modifications - Raised in June

CMP319 – Consequential changes to section 11 of the CUSC as a result of CMP280 and/or 281.
Deferred for discussion in Panel in July for timings to align for the CMP280 and CMP281 workgroup reports returning to Panel. It is anticipated that CMP280, CMP281 and CMP319 will all proceed to Code Administrator Consultation (CAC) at the same time.

Modifications at workgroup

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Modifications at workgroup (1/2)

Mod	Latest update	Next WG date	Next meeting
CMP280/ CMP281	Workgroup reports have concluded, awaiting final legal text. Workgroup reports due to return to Panel in July to proceed to CAC	NA – concluded; awaiting return to Panel	NA
CMP286	Separated from CMP287, Request For Information was issued on 7 May and closed on 30 May. Reponses to be reviewed by NGESO prior to discussion re next steps	TBC	WG7
CMP287	WG consultation responses need to be reviewed at the next WG. Extension on Report until October	TBC – 25 June date was not quorate	WG7
CMP288/ CMP289	Workgroup met on 21 June; progressing well. Due to report to Panel in September	TBC	WG9
CMP291	WG decoupled from GC0117; All scheduled WGs have failed to obtain quoracy. A request was made to industry to increase workgroup membership	TBC	WG3
CMP295	There are now 2 additional workgroup members. The next meeting is 9 July with hopes to conclude the workgroup report. Panel approved an extension until August 2019	9 July	WG6
CMP298	Next WG to be held in July, progressing and on track	11 July	WG5

Modifications at workgroup (2/2)

Mod	Latest update	Next WG date	Next meeting
CMP300	1 WACM being developed by the WG; aiming to conclude for July Panel	TBC - July	WG4
CMP303	Following the send back CMP303 will convene on 17 July	17 July	WG8
CMP304	Proposer awaiting the NG ESO roadmap to be produced July 2019. The WG will convene thereafter	TBC	WG5
CMP306	WG consultation concluded; WG to be convened to discuss consultation responses and conclude Workgroup report	11 July	WG4
CMP308	WG consultation concluded; 1 WACM being developed and legal text being reviewed; hoping to conclude on 12 July	12 July	WG6
CMP311	WG4 to be held end of July to progress to Workgroup Consultation; progressing well and on track	31 July	WG4
CMP315	WG1 to be held early July. Panel agreed for the modification to proceed to workgroup concluding that the modification does not impact on the scope of the SCR and that Ofgem can reverse this decision in the future if required	July	WG1
CMP316	WG1 was held 20 June; next workgroup to be held in September	September	WG2
CMP317	WG1 was held 27 June, WG2 to be held 22 July	22 July	WG2

Authority Decision Updates

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Authority Decision updates

Authority decisions

- **CMP285 - CUSC Governance Reform – Leveling the Playing Field** – Decision was published on 4 July to implement WACM1 – this includes the groupings of voting's, the rota for alternates and greater transparency with a report following the elections.
  - We are currently undertaking the elections for 2019; an updated election timetable was published on July 8 following the CMP285 decision. If you are unclear what this means to you please contact cusc.team@nationalgrideso.com and we will provide you with all the information you need.

- **CMP301 - Clarification on the treatment of project costs associated with HVDC and subsea circuits** was approved for implementation in April 2020.
- **CMP303 – Improving local circuit charge cost-reflectivity** had a send back. The workgroup will meet to create, review and provide further analysis and to ensure the legal text is accurate prior to sending this back to the Authority.

Dashboard – CUSC June

New Modifications	In-flight Modifications	Modifications issued for workgroup consultation	Modifications issued for code admin consultation
1	31*	0	0

Workgroups held June	Authority Decisions	Modifications on hold	Workgroups postponed due to quoracy issues
9	2** (301 & 303)	4	0

*includes 4 on hold, and those not at Workgroup phase for example any at CAC and any approved awaiting implementation
** CMP285 decision will be reflected on the July dashboard

Questions

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Queue management and interactivity update

Mike Oxenham

National Grid ESO

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RIIO-2 update - Develop codes and charging arrangements that are fit for the future

Mike Oxenham

National Grid ESO

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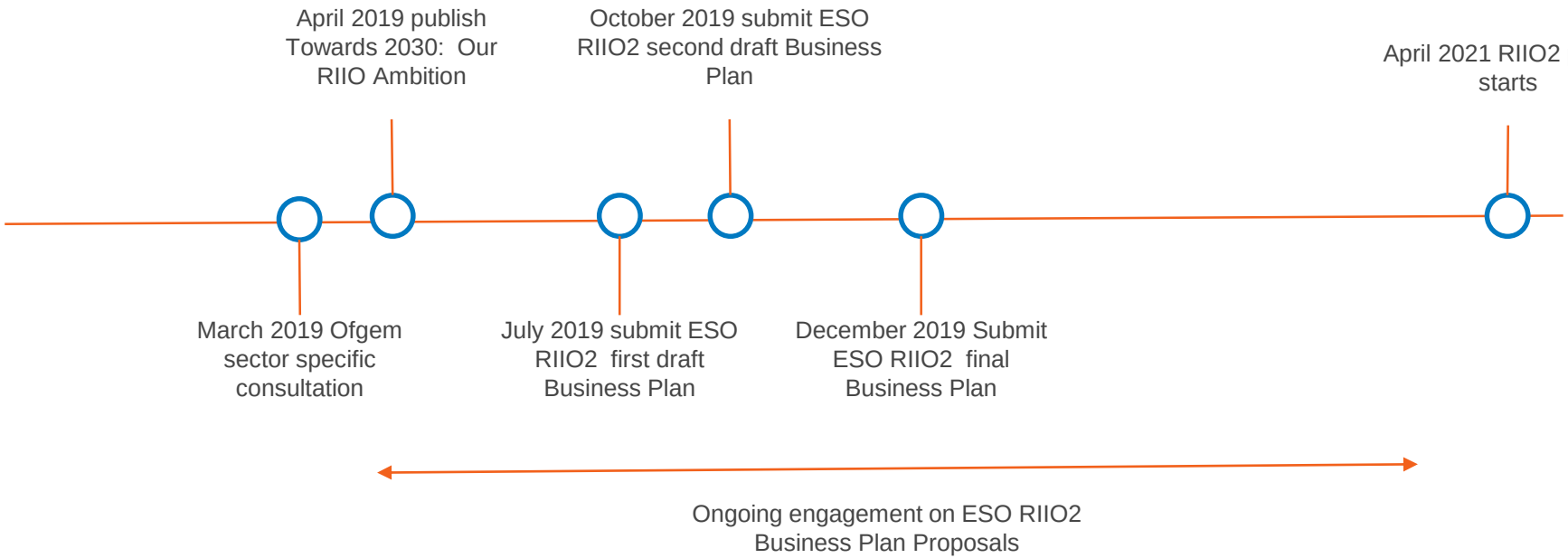
From April 2021 the ESO will have its own separate price control

ESO RIIO-2 Business Plan timeline



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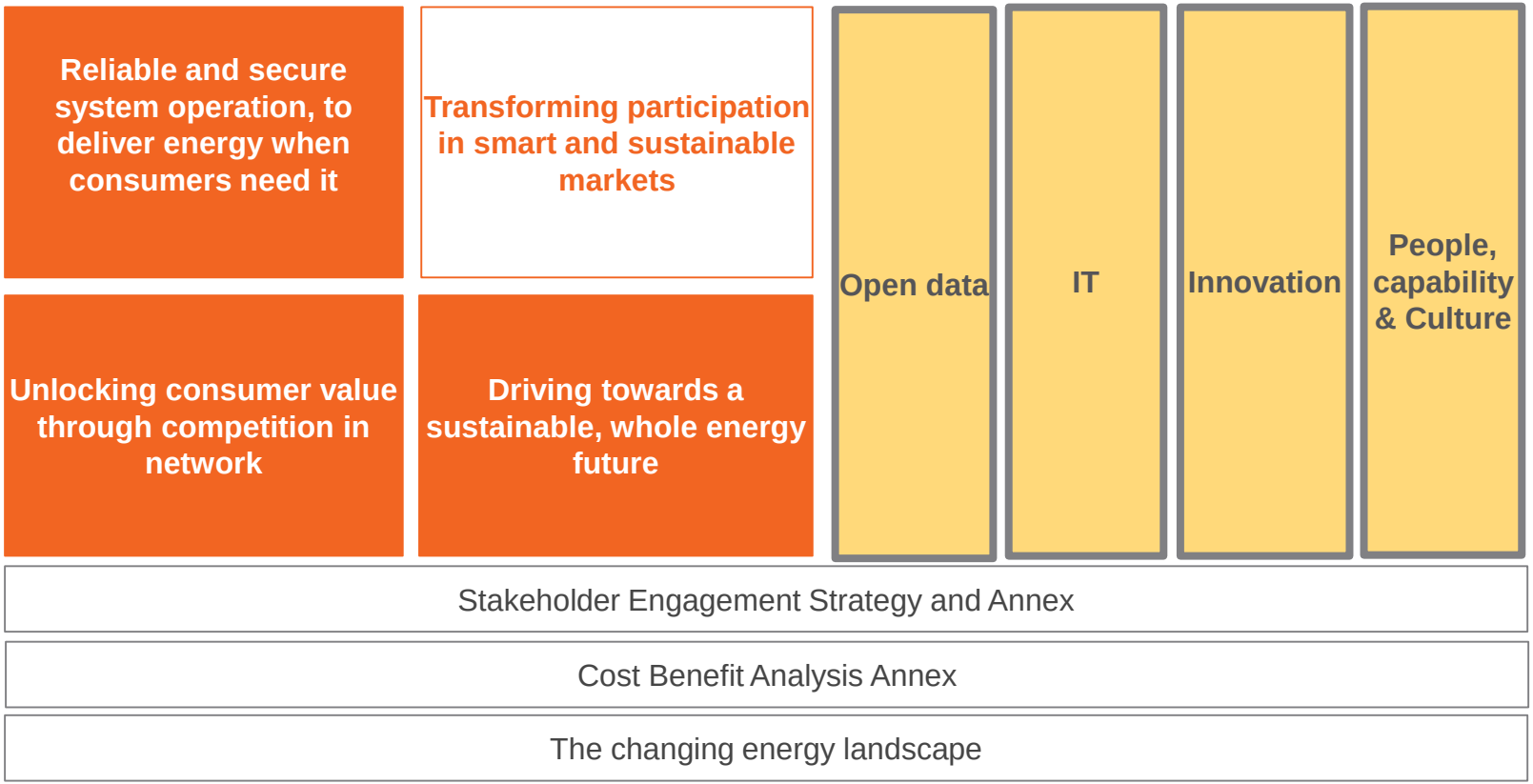
Our Business Plan themes



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Develop code and charging arrangements that are fit for the future

Transform the process to amend the codes

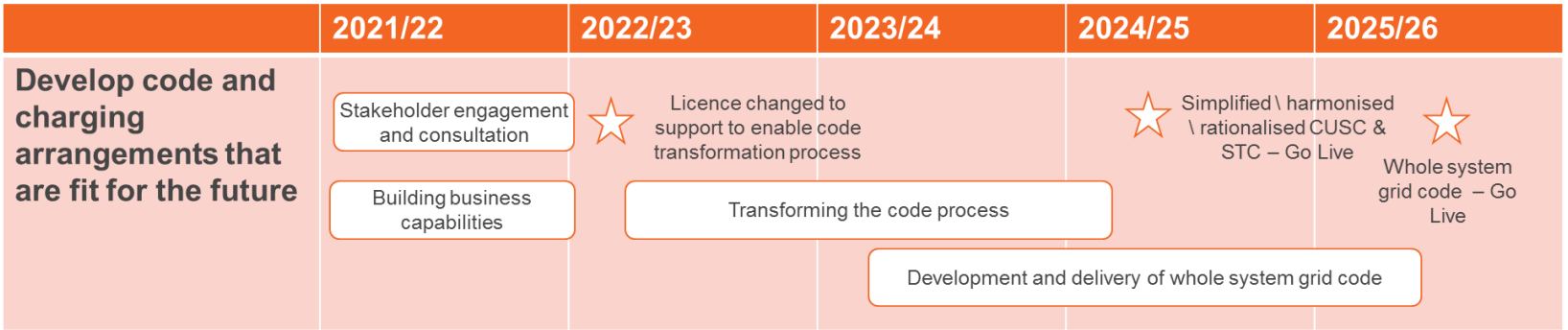
- Transform the process to amend the codes we administer, allowing strategic change to be prioritised and implemented efficiently, while ensuring that it is much simpler and less time consuming to make incremental improvements

Whole system, digitised Grid Code

- Work with all stakeholders to create a fully digitalised whole system Grid Code by 2025

Fixed BSUoS

- Fully or partially fix one or more components of Balancing Services Use of System (BSUoS) charges to provide more stability for our customers, if this is in the best interests of consumers



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Feedback received on our proposals

Transform the process to amend the codes

- We shouldn't pre-empt the work of the ongoing Energy Codes Review
- A majority of stakeholders are supportive of our proposals and want us to take on the role of a proactive code manager

Whole system, digitised Grid Code

- Supportive of fully digitised and whole system Grid Code, as long as parties understand obligations
- One party also suggested that we should appraise the contents in addition to improving the accessibility
- More clarity requested on what "principles based" Grid Code means

Fixed BSUoS

- March 2019 TCMF agreed that BSUoS proposal was a positive step
- Also noted that we need to understand the financing costs of this proposal and that information from suppliers on risk premia would also be needed

Questions

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ESO Thought Piece

Reforming Energy Code Content

The case to rationalise and simplify codes

Sarah York

National Grid ESO

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Context

Energy Codes Review is acknowledgment that reform of both codes and governance arrangements is required.

Existing code system is criticised for being:

- Complex & fragmented;
- Inaccessible;
- Difficult for new/smaller parties to understand and engage with;
- Slow to implement change

ESO advocates rationalisation and simplification of code content and processes to make it easy for any market participant to understand which rules apply to them and to understand what those rules mean in practice.

It is our view that consolidation of codes on its own is not enough to deliver a streamlined code system and a more efficient change process.

It would be a substantial task to fully simplify, harmonise and rationalise our codes.

Our RIIO-2 ambition recognises such a project would take several years.

A phased programme of change would see the bulk of the code transformation process undertaken over a 2-3 year period, working with stakeholders.

Our approach

Rationalisation: the streamlining of undue detailed prescription and removal of irrelevant, out of date information to reduce the size of individual codes.

Simplification: the translation of code requirements and code processes from undue legal and technical language into plain English and from complex to simple codified processes, or removal of some codified processes.

Move to plain English

- Simpler and more concise language; and
- Write for accessibility and ease of understanding

Make it easy for any market participant, but especially those without specialist knowledge, to understand the rules.

'Strip away' legacy layers

- Overlaying/bolting new rules and processes on to historic arrangements has increased information complexity and density;
- Review and take out content that is no longer up-to-date, relevant and applicable;

More efficient access to information and reduce admin burden i.e. resource/time.

Inclusive and diverse participation

- More accessible and intelligible codes allows greater involvement of non-traditional market participants;
- Smarter approach to codes could also help i.e. digitalise codes

Establish basic principles

- Encourage consistency of approach across codes;
- Could be achieved via CACoP

E.g. content written for readability and understanding; proper regard for clarity of meaning; focus on concise, fit for purpose content.

CUSC case study: Section 6.31- 6.34

6.31 Short Term Transmission Capacity

6.32 Limited Duration Transmission Capacity

6.34 Temporary TEC Exchanges

First draft: notable shift towards greater use of plain language and was much shorter.

Scope to be more ambitious with the desired output.

Second iteration: express intention to convert all legal terminology in to plain English and remove information outside of code.

The output

- Concise and simple usable content
- Plain language and less formal tone
- Easy to understand explanation of each TEC product
- Concise, logical guide to who can apply and when
- Process changes e.g. harmonised application timescales.
- Hyperlinks to application forms associated with each product

Outcome

- Reduced by 13 pages
- 99 fewer clauses
- Text cut down by 3,846 words

Current legal text for all 3 sections	Simplified text for all 3 sections
• 115 clauses	• 16 clauses
• 5,050 words	• 1,204 words
• 15 pages	• 2 pages

Extract of simplified text

Moving forward

We see rationalisation and simplification of code content as an opportunity to begin reformative change here and now, within the bounds of existing arrangements.

No immediate plans to raise a change based on this case study because there is already a lot of code change activity and it would detract from more important modifications.

We want to engage stakeholders:

- to gauge whether our proposed approach is considered beneficial
- to determine how it could be taken forward in a co-ordinated way
- identify potential targeted modification to reform content within our codes

We invite your feedback and suggestions about how this approach can be applied to our codes.

- Do you consider this to be a sensible and workable approach?
- Are there any potential areas to target as ‘quick wins’?
- Do you see any challenges to applying this approach more widely?

Questions

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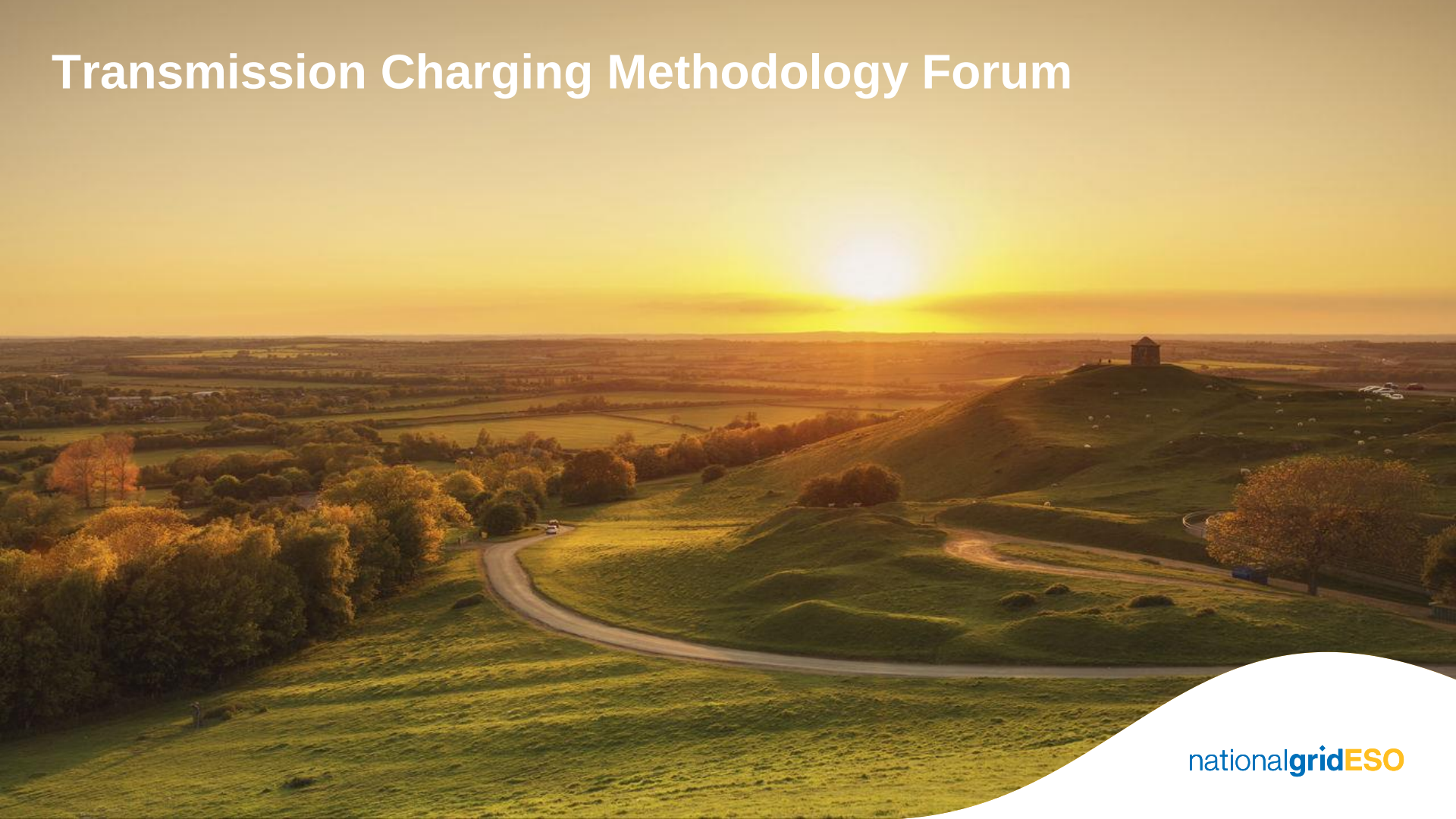
Transmission Charging Methodology Forum



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Reviewing TNUoS generation zones for RIIO2

Jo Zhou

National Grid ESO

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TNUoS Generation Zoning for RIIO-2

1	Background
2	Why do we need to review them
3	Key findings
4	Potential options
5	Recommendation and next steps
6	Q&A

Background: what are TNUoS Generation Zones

Transmission Network Use of System (TNUoS) charge

- recovers the cost of building and maintaining the transmission infrastructure network

- sends locational signals via the locational tariff elements

Why do we need TNUoS Generation Zones

- to dampen nodal marginal cost fluctuations
- to improve Tariff predictability which is required for long-term investment signals
- to reduce tariff volatility, while still retaining the locational signals

Why do we need to review TNUoS Generation Zones

We undertake re-zoning prior to every price control, to capture network parameter/ topology changes, and the effect from long term “shift” in generation & demand patterns

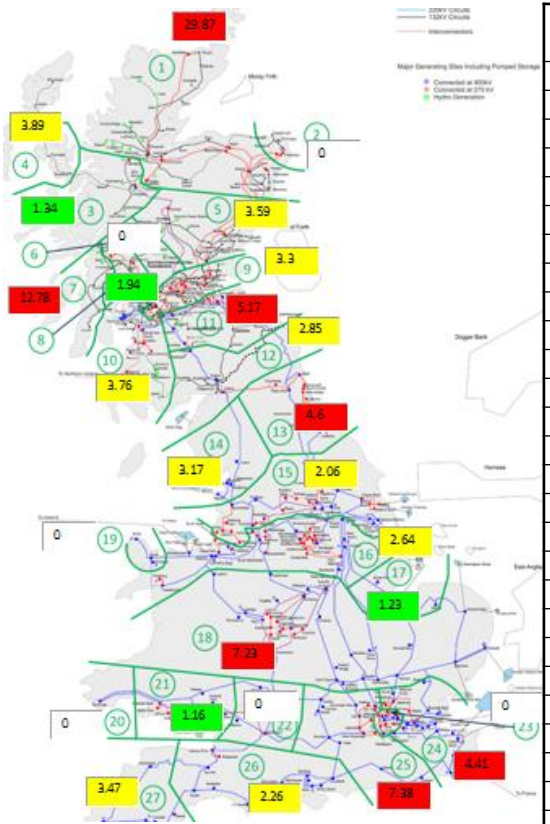
Costs of building and maintaining the transmission network are also reviewed at each of the price control period

Re-zoning will be undertaken in such a way that minimises the adverse impact on Users.

What can change the generation zones

- Global parameters (annuity factor, inflation, wider security factor)
- Network changes
- Generation and demand (e.g. coastal areas in E&W, increased gen sites in Scotland), voltage level
- Circuits between MITS nodes (e.g. HVDC)
- Local/wider infrastructure assets
- Methodology

Validating current zones using the ± £1.00/kW range



Gen Zone	Name	Range (£/kW)
1	North Scotland	29.87
2	East Aberdeenshire	0
3	Western Highlands	1.34
4	Skye and Lochalsh	3.89
5	Eastern Grampian and Tayside	3.59
6	Central Grampian	0
7	Argyll	12.78
8	The Trossachs	1.94
9	Stirlingshire and Fife	3.3
10	South West Scotlands	3.76
11	Lothian and Borders	5.17
12	Solway and Cheviot	2.85
13	North East England	4.6
14	North Lancashire and The Lakes	3.17
15	South Lancashire, Yorkshire and Humber	2.06
16	North Midlands and North Wales	2.64
17	South Lincolnshire and North Norfolk	1.23
18	Mid Wales and The Midlands	7.23
19	Anglesey and Snowdon	0
20	Pembrokeshire	0
21	South Wales & Gloucester	1.16
22	Cotswold	0
23	Central London	0
24	Essex and Kent	4.41
25	Oxfordshire, Surrey and Sussex	7.38
26	Somerset and Wessex	2.26
27	West Devon and Cornwall	3.47

Red and yellow areas: all exceed the £2/kW limit.

Zones with range = 0: only one generator site, or no generator site within this zone.

Potentially ~60 zones if we follow the £2/kW criteria. Too many generation zones will increase tariff complexity and volatility.

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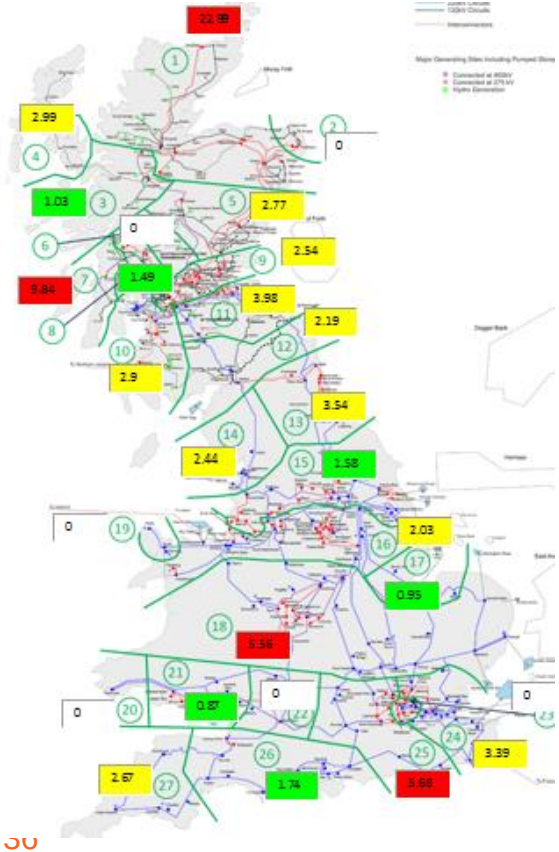
Validating current zones using the +/- £1.00/kW range, and using indicative RIIO-T2 WACC



Gen Zone	Name	Range (£/kW)
1	North Scotland	22.99
2	East Aberdeenshire	0
3	Western Highlands	1.03
4	Skye and Lochalsh	2.99
5	Eastern Grampian and Tayside	2.77
6	Central Grampian	0
7	Argyll	9.84
8	The Trossachs	1.49
9	Stirlingshire and Fife	2.54
10	South West Scotlands	2.9
11	Lothian and Borders	3.98
12	Solway and Cheviot	2.19
13	North East England	3.54
14	North Lancashire and The Lakes	2.44
15	South Lancashire, Yorkshire and Humber	1.58
16	North Midlands and North Wales	2.03
17	South Lincolnshire and North Norfolk	0.95
18	Mid Wales and The Midlands	5.56
19	Anglesey and Snowdon	0
20	Pembrokeshire	0
21	South Wales & Gloucester	0.87
22	Cotswold	0
23	Central London	0
24	Essex and Kent	3.39
25	Oxfordshire, Surrey and Sussex	5.68
26	Somerset and Wessex	1.74
27	West Devon and Cornwall	2.67

- Assuming pre-tax WACC is 3.23%, thus annuity is 4.06%
- Assuming overhead is still 1.8%
- Reduced “unit cost” leads to smaller cost difference across locations, however we still expect to split many zones

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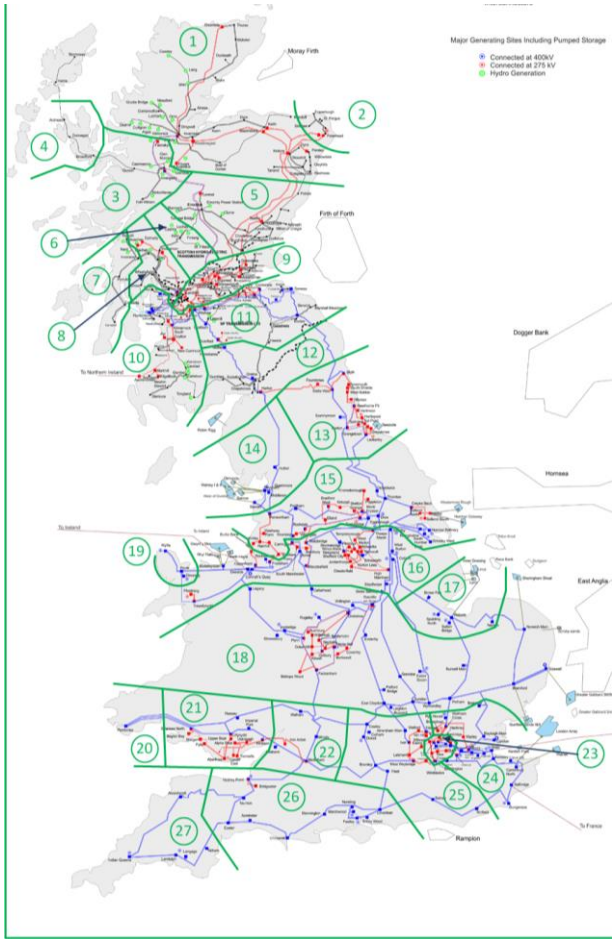
Indicative zones to maintain the +/- £1.00/kW range

45~50 zones in total (assuming annuity factor of 4.06%)

The number of generation zones does not help tariff stability.

The purpose of locational signals is to help long term investment certainty



Zone 1: split into about 10 zones (3 gen sites within each of the 10 new “zones”)

Zone 7: split into about 4 zones (1-2 gen sites within each of the 4 new “zones”)

Other areas in Scotland + North England: revise boundaries and create ~5 new zones

Zone 18: split into 3 zones (1-2 gen sites within each of the new “zone”)

Zones 20, 21 and 22: can be combined.

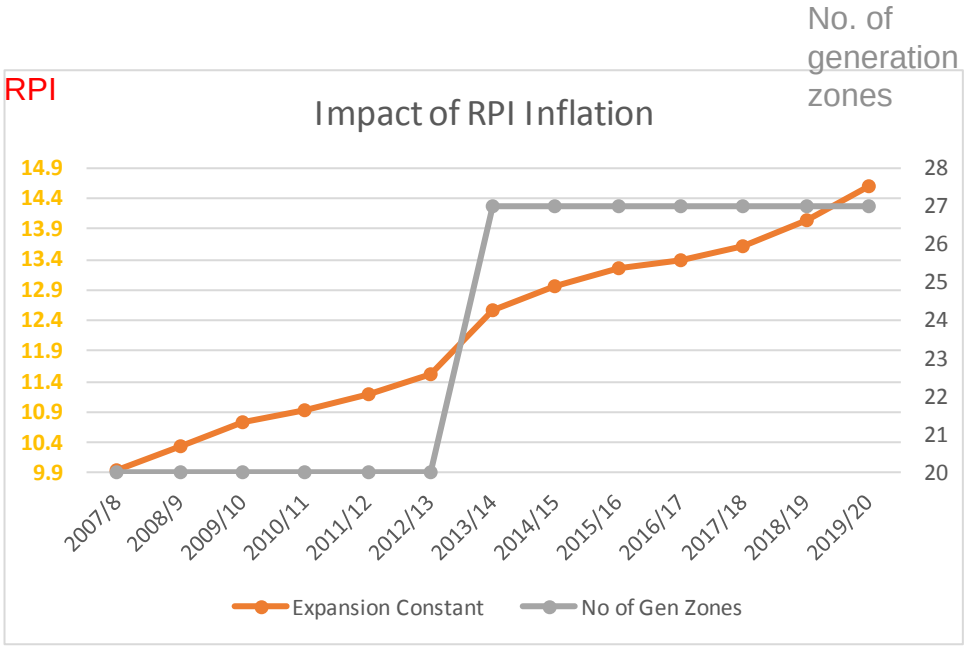
Zone 24: split into 3 zones

Zone 25: split into 4-5 zones

A few other zones are either split, or have their boundaries revised

Impact of RPI on the generation zones

- Expansion Constant is RPI linked
- It will be reviewed at each price control
- The wider security factor (currently 1.8) will also be reviewed
- The +1£1/kW range, is not index-linked, nor is it dependent on the wider security factor



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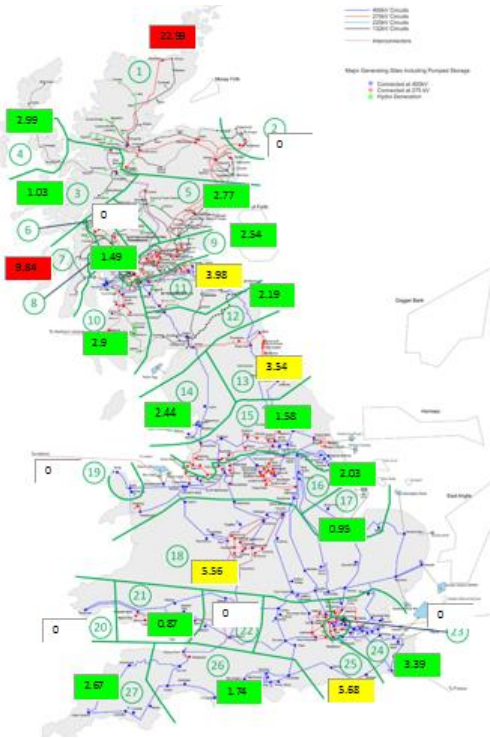
Option 1: Index-link the range limit (e.g. to +/- £1.75/kW)



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4	Skye and Lochalsh	2.99
5	Eastern Grampian and Tayside	2.77
6	Central Grampian	0
7	Argyll	9.84
8	The Trossachs	1.49
9	Stirlingshire and Fife	2.54
10	South West Scotlands	2.9
11	Lothian and Borders	3.98
12	Solway and Cheviot	2.19
13	North East England	3.54
14	North Lancashire and The Lakes	2.44
15	South Lancashire, Yorkshire and Humber	1.58
16	North Midlands and North Wales	2.03
17	South Lincolnshire and North Norfolk	0.95
18	Mid Wales and The Midlands	5.56
19	Anglesey and Snowdon	0
20	Pembrokeshire	0
21	South Wales & Gloucester	0.87
22	Cotswold	0
23	Central London	0
24	Essex and Kent	3.39
25	Oxfordshire, Surrey and Sussex	5.68
26	Somerset and Wessex	1.74
27	West Devon and Cornwall	2.67

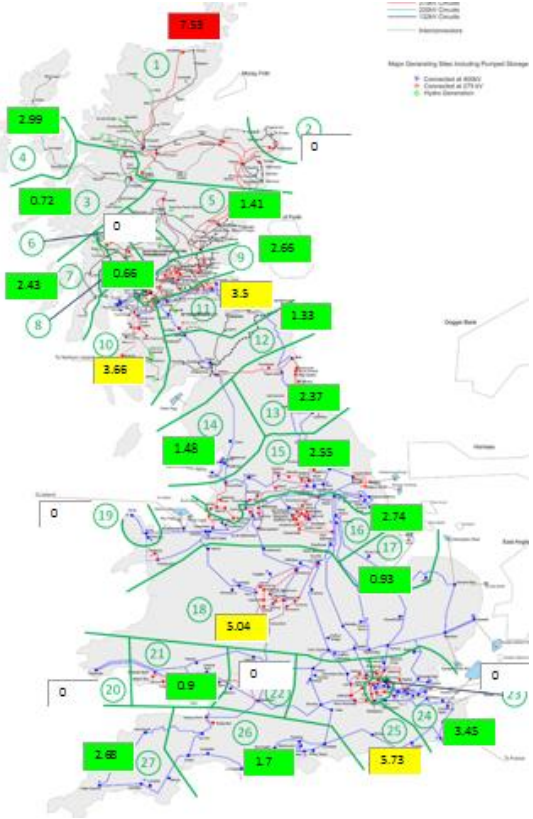
Many existing zones remain within the new range

However, we still need to make adjustment to some zones

This is a relatively simple solution, however re-zoning is still needed, driven by other factors

- Zones 18 and 25: split
- Revise boundaries in south Scotland & North England, to remain the number of zones
- Zone 1 and Zone 7 are still affected by the high “unit costs” of HVDC / undersea cables

Impact of HVDC – sensitivity analysis



Gen Zone	Name	Range (£/kW)
1	North Scotland	7.53
2	East Aberdeenshire	0
3	Western Highlands	0.72
4	Skye and Lochalsh	2.99
5	Eastern Grampian and Tayside	1.41
6	Central Grampian	0
7	Argyll	2.43
8	The Trossachs	0.66
9	Stirlingshire and Fife	2.66
10	South West Scotlands	3.66
11	Lothian and Borders	3.5
12	Solway and Cheviot	1.33
13	North East England	2.37
14	North Lancashire and The Lakes	1.48
15	South Lancashire, Yorkshire and Humber	2.55
16	North Midlands and North Wales	2.74
17	South Lincolnshire and North Norfolk	0.93
18	Mid Wales and The Midlands	5.04
19	Anglesey and Snowdon	0
20	Pembrokeshire	0
21	South Wales & Gloucester	0.9
22	Cotswold	0
23	Central London	0
24	Essex and Kent	3.45
25	Oxfordshire, Surrey and Sussex	5.73
26	Somerset and Wessex	1.7
27	West Devon and Cornwall	2.68

We tried to replace the “unit cost” of HVDCs with generic cable costs

The range within zone 1 has been greatly reduced.

This approach is not cost-reflective.

Zone 1 still has large range, mainly due to the 132kV circuits (electrically longer “distance”)

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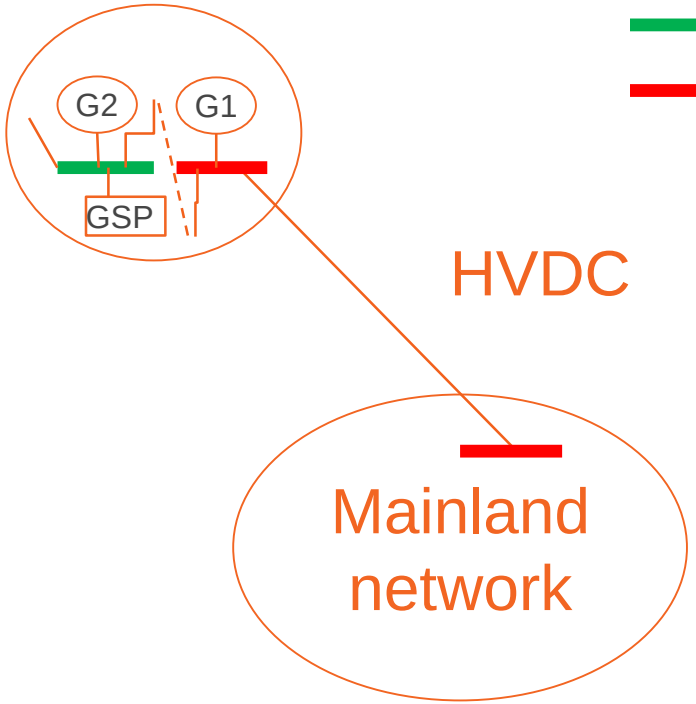
Additional challenges: segmented MITS network, T/D choice, etc.

A circuit between non-MITS nodes:

it is always a local circuit?

If it is part of the wider network, what security factor should we use (1 or 1.8)? – the CUSC says 1.8



MITS node

Non- MITS node

The existing definition of MITS node means generator 2 does not pay local circuit tariff

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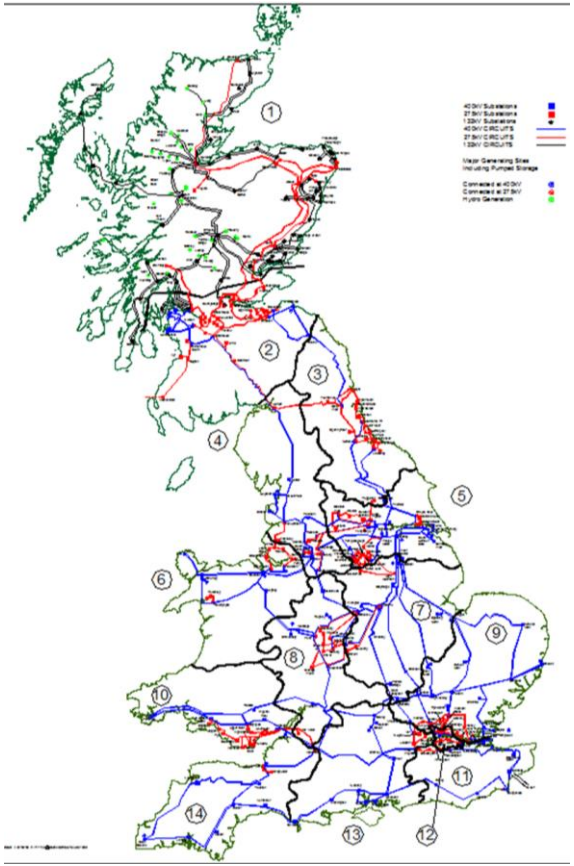
Option 2: aligning generation zones with DNO zones



To provide stability: generation zones will not need reviewing every 5 years

To align embedded generators with transmission-connected generators

To help tariff stability

What remains unsolved -

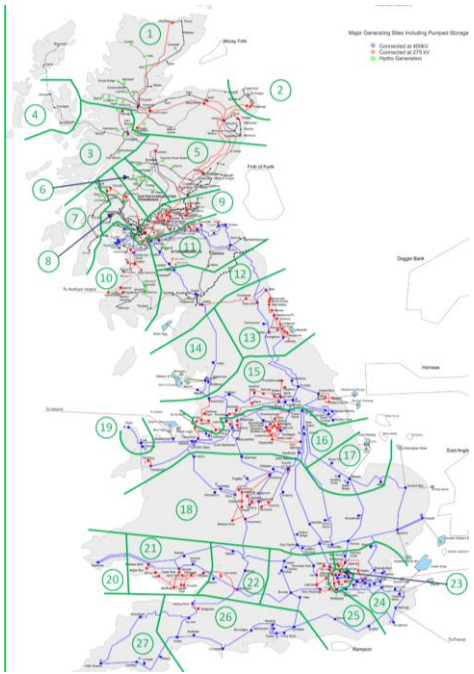
HVDC & undersea cables “stretch” the nodal price difference

Indicative Tariffs under Option 2 (using the same global parameters as in March 2019 5-year forecast)

Generation – Wider Tariff Elements (2021/22)						Examples		
Zone No.	Zone Name	Peak Security (£/kW)	Year Round Shared (£/kW)	Year Round Not Shared (£/kW)	Residual (£/kW)	80% Conventional Carbon	80% Conventional Low Carbon	40% Intermittent
1	Northern Scotland	4.885969	18.516661	15.428808	-5.518340	26.524004	29.609766	17.317132
2	Southern Scotland	3.783275	10.379891	9.998559	-5.518340	14.567695	16.567407	8.632175
3	Northern	3.885423	6.487378	3.366132	-5.518340	6.249891	6.923117	0.442743
4	North West	2.704956	4.712392	1.858011	-5.518340	2.442938	2.814541	- 1.775372
5	Yorkshire	4.474122	1.897173	0.040002	-5.518340	0.505522	0.513522	- 4.719469
6	N Wales & Mersey	4.406501	0.813277	0.000000	-5.518340	- 0.461217	- 0.461217	- 5.193029
7	East Midlands	2.844281	0.813277	-1.081762	-5.518340	- 2.888847	- 3.105199	- 6.274791
8	Midlands	2.658743	0.813277	-3.749908	-5.518340	- 5.208902	- 5.958883	- 8.942937
9	Eastern	-1.975875	2.143544	0.000000	-5.518340	- 5.779380	- 5.779380	- 4.660922
10	South Wales	8.041456	-4.253861	0.000000	-5.518340	- 0.879973	- 0.879973	- 7.219884
11	South East	-4.674521	3.335713	0.000000	-5.518340	- 7.524291	- 7.524291	- 4.184055
12	London	-3.484951	3.335713	-4.414614	-5.518340	- 9.866412	- 10.749335	- 8.598669
13	Southern	-1.821473	3.335713	-5.829849	-5.518340	- 9.335122	- 10.501092	-10.013904
14	South Western	1.513683	-4.385977	0.000000	-5.518340	- 7.513439	- 7.513439	- 7.272731

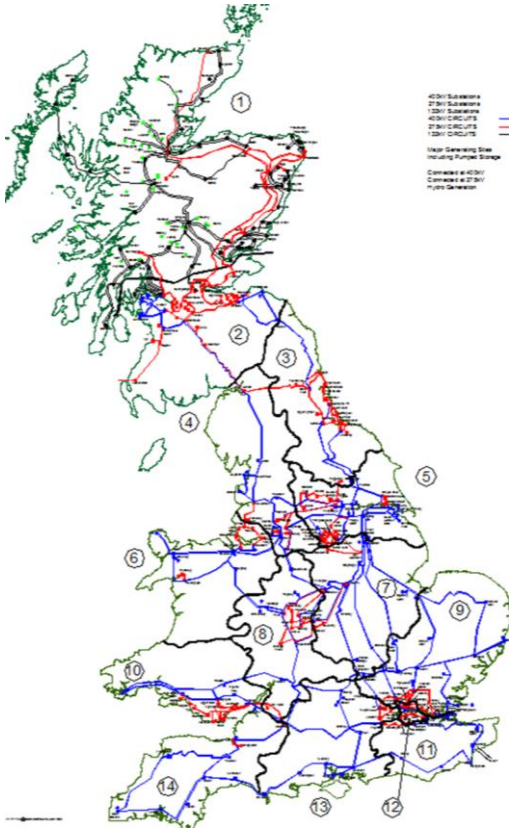
Side by side comparison – 2021/22 Tariff forecast

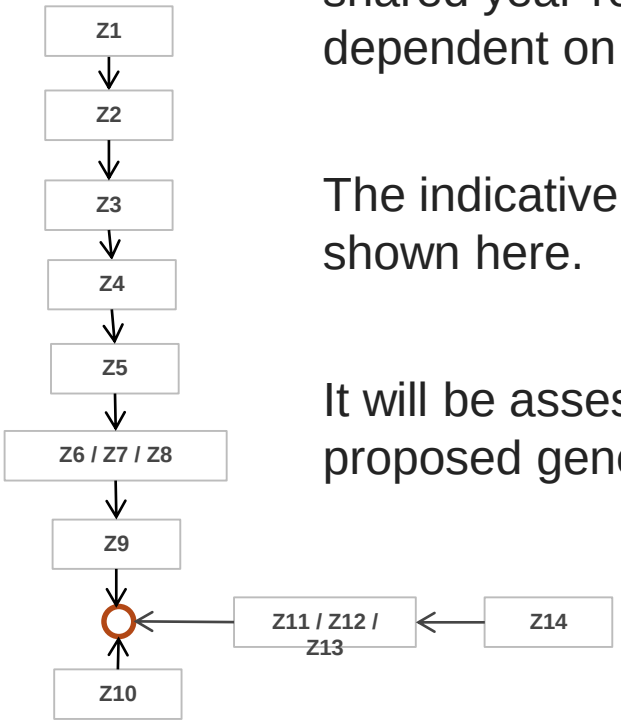
Zone	Peak Security (£/kW)	Year Round (£/kW) = shared + not shared
1	4.9	33.9
2	3.8	20.4
3	3.9	9.9
4	2.7	6.6
5	4.5	1.9
6	4.4	0.8
7	2.8	-0.3
8	2.7	-2.9
9	-2.0	2.1
10	8.0	-4.3
11	-4.7	3.3
12	-3.5	-1.1
13	-1.8	-2.5
14	1.5	-4.4



Zone	Peak Security (£/kW)	Year Round (£/kW) = shared + not shared
1	3.7	36.6
2	5.8	28.3
3	3.0	34.7
4	3.0	41.1
5	4.0	32.3
6	4.8	31.0
7	4.6	38.2
8	4.7	26.1
9	3.1	22.8
10	4.3	23.5
11	3.1	17.4
12	2.7	14.5
13	3.9	9.9
14	2.6	7.4
15	4.3	2.2
16	3.6	0.6
17	1.5	0.6
18	1.0	1.0
19	5.7	0.9
20	10.0	-4.3
21	6.8	-4.2
22	3.5	-4.2
23	-6.3	-3.9
24	-4.2	3.3
25	-1.6	-2.3
26	-1.4	-2.7
27	0.3	-5.2

The connectivity map





The split between the shared /not-shared year-round tariffs is dependent on the connectivity map.

The indicative connectivity map is shown here.

It will be assessed along with the proposed generation zones.

Conclusion and next steps

The CUSC clauses will need review, as the purpose of zoning is to achieve tariff stability & long-term investment signals

Recommended option: aligning generation zones with demand zones, as it provides tariff stability.

Potential variation: creating additional zones with each of the HVDC / undersea cable transmission projects

Questions

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