Public

GC0117 Improving transparency and consistency of access arrangements across GB by the creation of a pan-GB commonality of Power Station requirements

Send Back Workgroup meeting 3 (Workgroup 26)
Tuesday 02 December 9.30am
Online Meeting via Teams

NESO
National Energy System Operator

WELCOME

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Agenda

Topics to be discussed	Lead
Introductions	Chair
Workgroup Responsibilities and Membership	Chair
Objectives and Timeline	Chair
Forecast Embedded Generation Levels	RNP Representative
CBA Approach	NESO SME
Action Review	Chair
AOB	Chair
Next Steps	Chair

Expectations of a Workgroup Member

- Contribute to the discussion
- Be respectful of each other's opinions
- Language and Conduct to be consistent with the values of equality and diversity
- Do not share commercially sensitive information
- Be prepared - Review Papers and Reports ahead of meetings
- Complete actions in a timely manner
- Keep to agreed scope
- Email communications to/cc'ing the .box email

Your Roles

- Help refine/develop the solution(s)
- Bring forward alternatives as early as possible
- Vote on whether or not to proceed with requests for Alternatives
- Vote on whether the solution(s) better facilitate the Code Objectives

Scope Confirmation – Ofgem Send Back Letter

Direction

1. We require the GCRP to facilitate further engagement with relevant stakeholders to undertake an updated and comprehensive reassessment of the CBA. A more detailed cost and sensitivity analysis within the CBA should be included, reconsidering current or future BM exemptions including ANM schemes and Technical Limits, across the previously agreed work packages:

- An updated and forecast BM price stack
- An updated and forward-looking constraint analysis
- A re-analysis of demand forecasting

2. The timing of implementation and interaction with other industry developments requires further consideration as we have concerns with the OP's impact and possible duplication. With respect to the interactivity with recent industry developments, we require the GCRP to assess the OP's interactivity and revise the implementation date to be included in the revised FMR:

- Connection Reform considerations for the connections process
- Delivery of CP2030 key objectives
- Potential interactivity with REMA proposals
- DSO functions focusing on primacy and potential duplication between DSO and NESO operations

After addressing the issues discussed above and revising the FMR and CBA accordingly, the GCRP should re-submit it to us for decision as soon as reasonably practicable.

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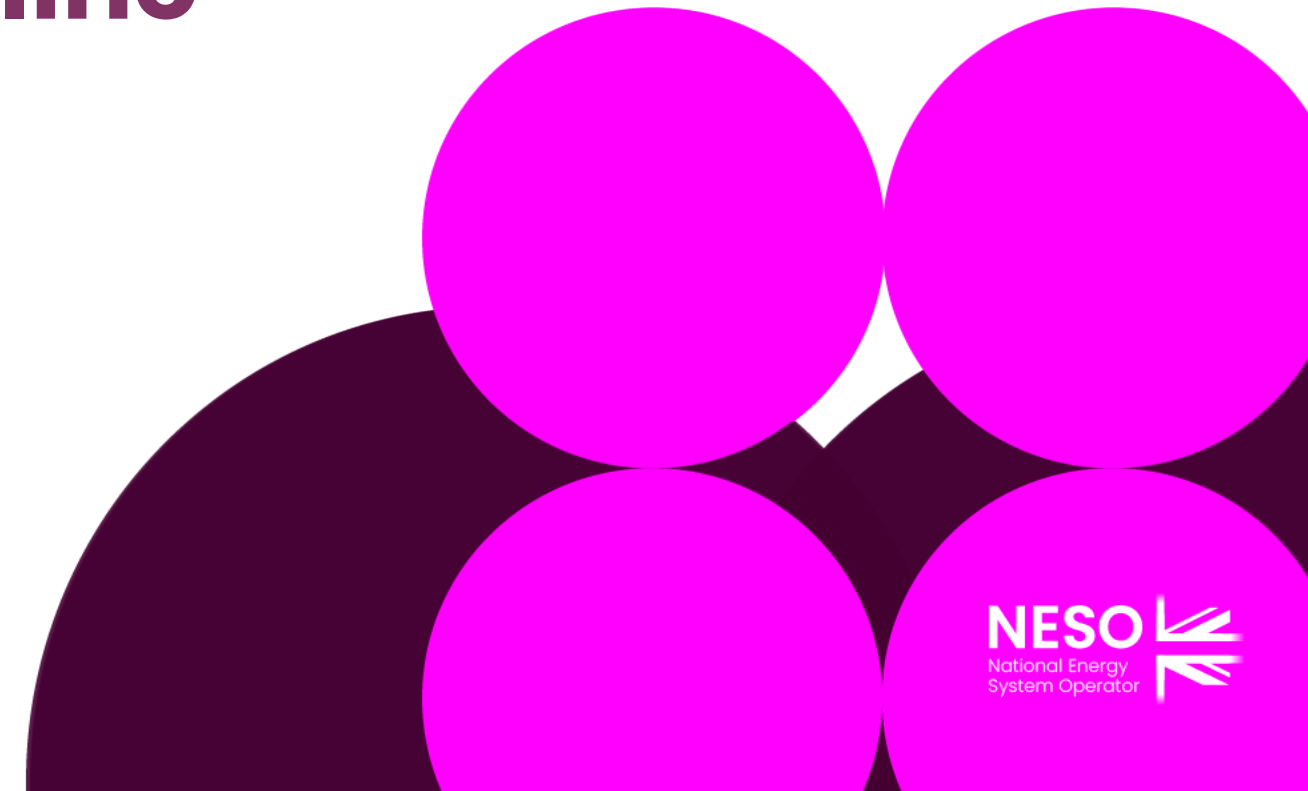
Objectives and Timeline

Claire Goult – NESO Code Administrator



Timeline

Objectives

Discuss CBA Approach

Review Actions

Timeline for GC0117 as of October 2025

Workgroups		
Workgroup 1 (24)	24 October 2025	Recap
Workgroup 2 (25)	11 November 2025	Progress Check
Workgroup 3 (26)	02 December 2025	CBA Approach
Workgroup 4 (27)	21 January 2026	Progress Check
Workgroup 5 (28)	26 February 2026 (Propose alternate date) TBC	GCRP ends 2pm
Workgroup 6 (29)	19 March 2026	Review Second CAC and confirm vote
Post Workgroups		
Present Second CAC to Panel	**23 April 2026**	**Panel papers due 15 April**
Second Code Administrator Consultation	13 May – 15 June 2026	1 month
Second Draft Final Modification Report to Panel	22 July 2026	Panel on 30 July 2026
Second Final Modification Report to Ofgem	07 August 2026	
Implementation Date	10 Business Days after Authority Decision	

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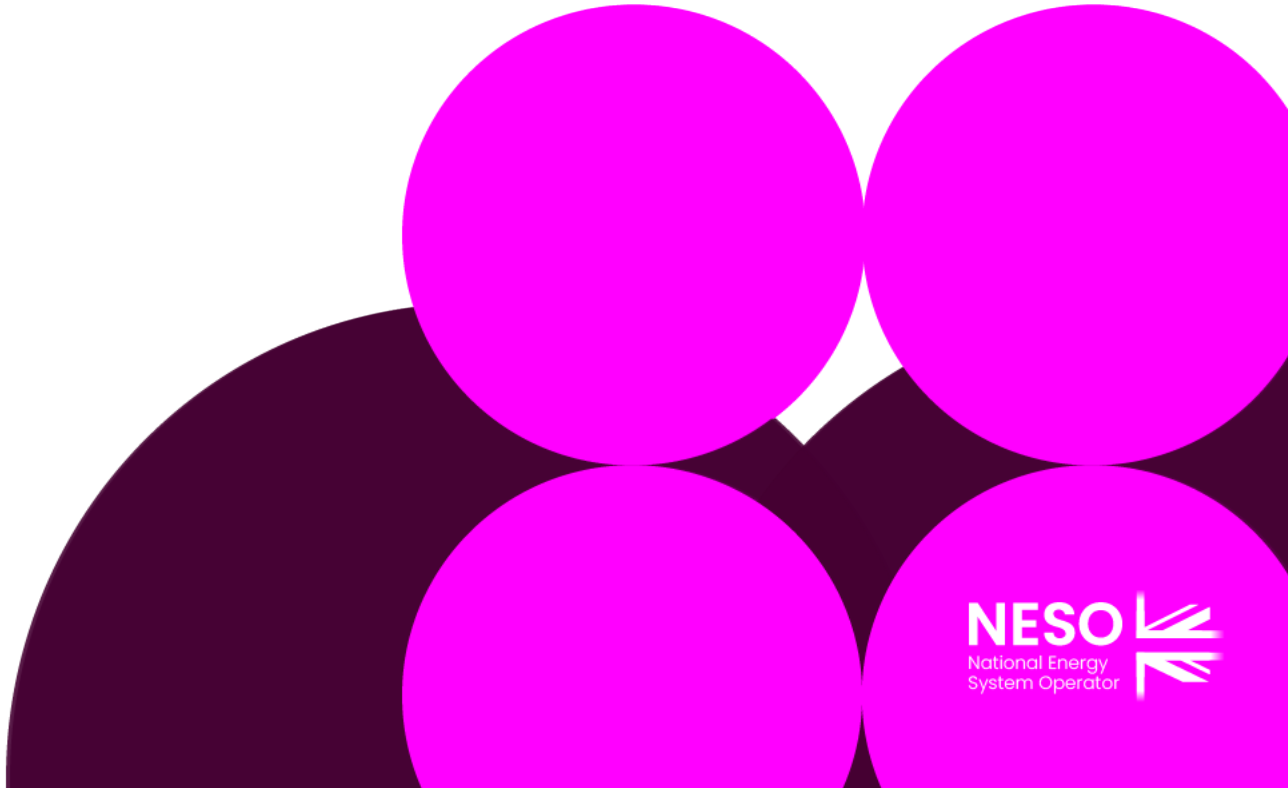
Forecast Embedded Generation Levels

Michael Taylor – RNP Information



ECR & TEC Connections Figure Data & Limitations

Data has been sourced from the:

- **Transmission Entry Capacity (TEC) Register** (NESO, September 2025)
- **Embedded Capacity Register (ECR)** from the following DNOs (September 2025):
  - National Grid Electricity Distribution (NGED)
  - Northern Powergrid (NPg)
  - UK Power Networks (UKPN)
  - SP Energy Networks (SPEN)
  - SP Electricity North West (ENW)
  - Scottish and Southern Electricity Networks (SSEN)

The following has been removed from the TEC Register data:

- 'Built' connections as these have no energisation date;
- 'Scoping' connections as these are not yet confirmed.

- Where possible, data has been organised by connection year, with some limitations.
- NPg, SSEN and ENW have limited target energisation dates data (Figure 4). This impacts
  - **NPg**: 478 Connections
  - **SSEN:** 702 Connections
  - **ENW:** 227 Connections
  - **Total:** 1407 >1MW Connections
- Presented data is from 2027, to align to the Reformed National Pricing assessment period. Please note, NGED has forecast 803 new connections in 2026.

The connection queue is subject to change following decisions made in the Connections Reform Programme. As such, these figures should be considered indicative only.

November Update: Data tables added

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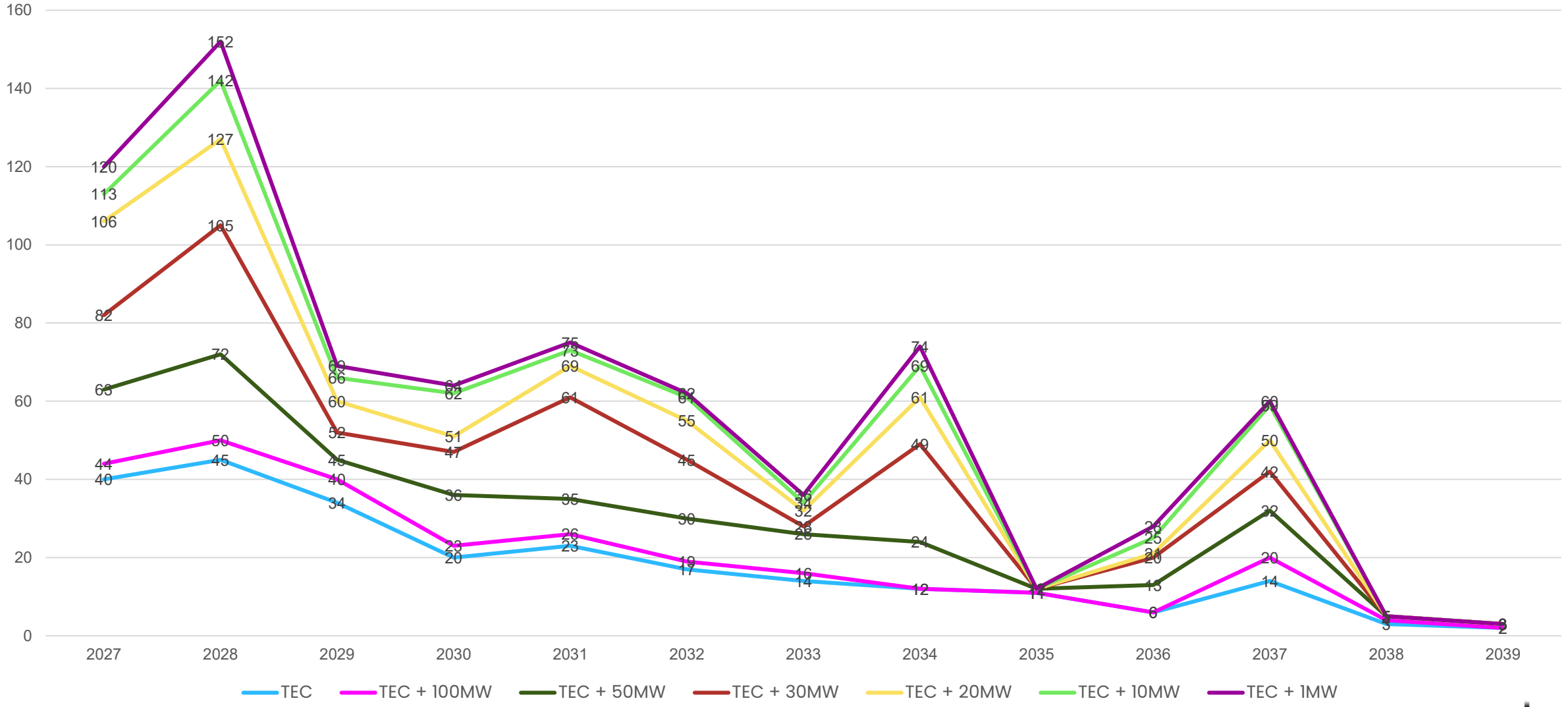
Figure 1.

No. of Connections per year from the TEC Register and Connections Queue



* 1717 New ECR Connections do not have a target energisation date and are not represented on this graph.

* See Slide 1 for limitations.

No. of Connections per year from the TEC Register and Connections Queue

Figure 1 & 3	TEC	TEC + 100MW	TEC + 50MW	TEC + 30MW	TEC + 20MW	TEC + 10MW	TEC + 1MW
2025	47	50	64	97	109	140	234
2026	42	103	275	541	666	780	893
2027	40	44	63	82	106	113	120
2028	45	50	72	105	127	142	152
2029	34	40	45	52	60	66	69
2030	20	23	36	47	51	62	64
2031	23	26	35	61	69	73	75
2032	17	19	30	45	55	61	62
2033	14	16	26	28	32	34	36
2034	12	12	24	49	61	69	74
2035	11	11	12	12	12	12	12
2036	6	6	13	20	21	25	28
2037	14	20	32	42	50	59	60
2038	3	4	5	5	5	5	5
2039	2	2	3	3	3	3	3
Total	0	167	548	992	1188	1313	1717

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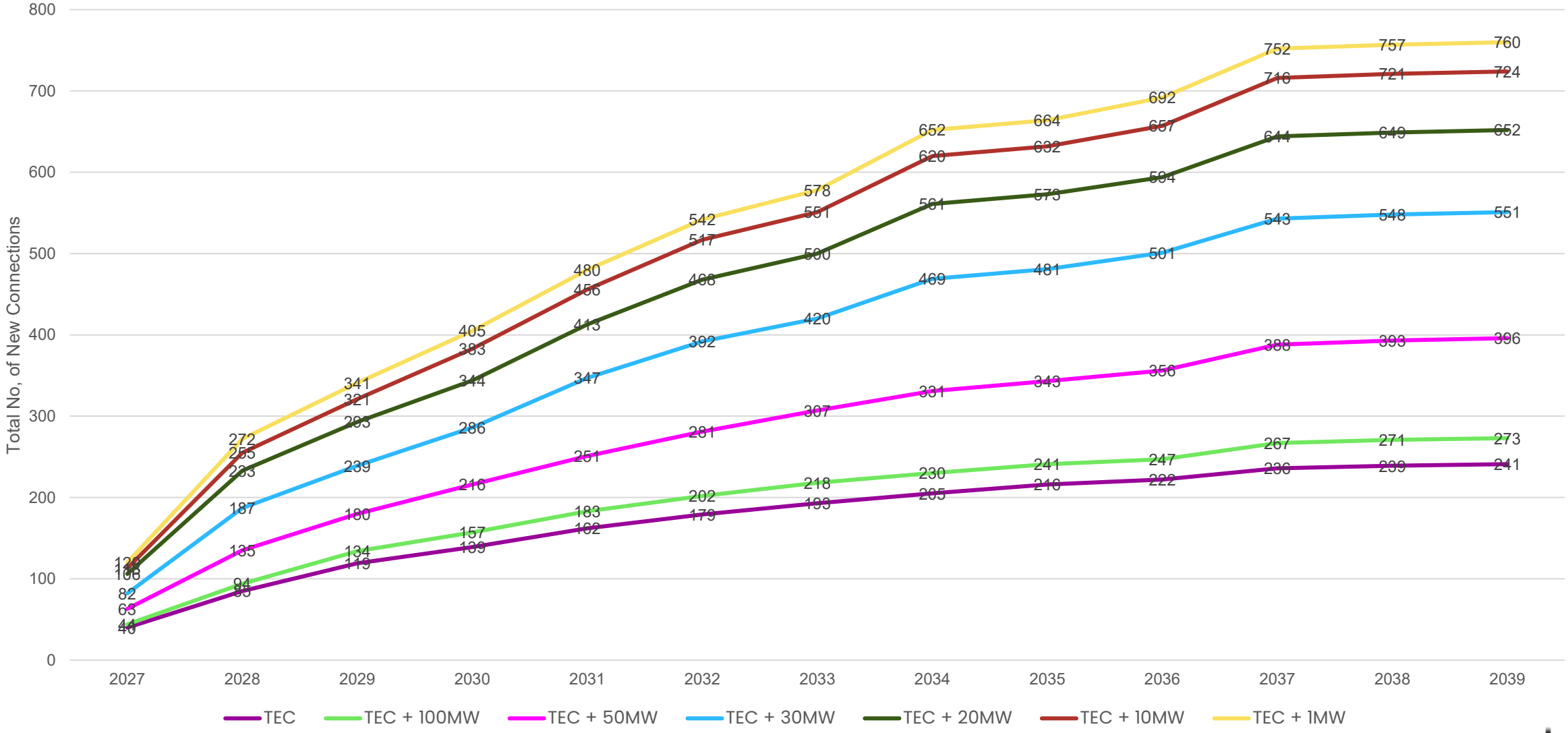
Figure 2. Cumulative No. of Connections over time from the TEC Register and Connections Queue



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Cumulative No. of Connections per year from the TEC Register and Connections Queue

Figure 2.

	TEC	TEC + 100MW	TEC + 50MW	TEC + 30MW	TEC + 20MW	TEC + 10MW	TEC + 1MW
2027	40	44	63	82	106	113	120
2028	85	94	135	187	233	255	272
2029	119	134	180	239	293	321	341
2030	139	157	216	286	344	383	405
2031	162	183	251	347	413	456	480
2032	179	202	281	392	468	517	542
2033	193	218	307	420	500	551	578
2034	205	230	331	469	561	620	652
2035	216	241	343	481	573	632	664
2036	222	247	356	501	594	657	692
2037	236	267	388	543	644	716	752
2038	239	271	393	548	649	721	757
2039	241	273	396	551	652	724	760

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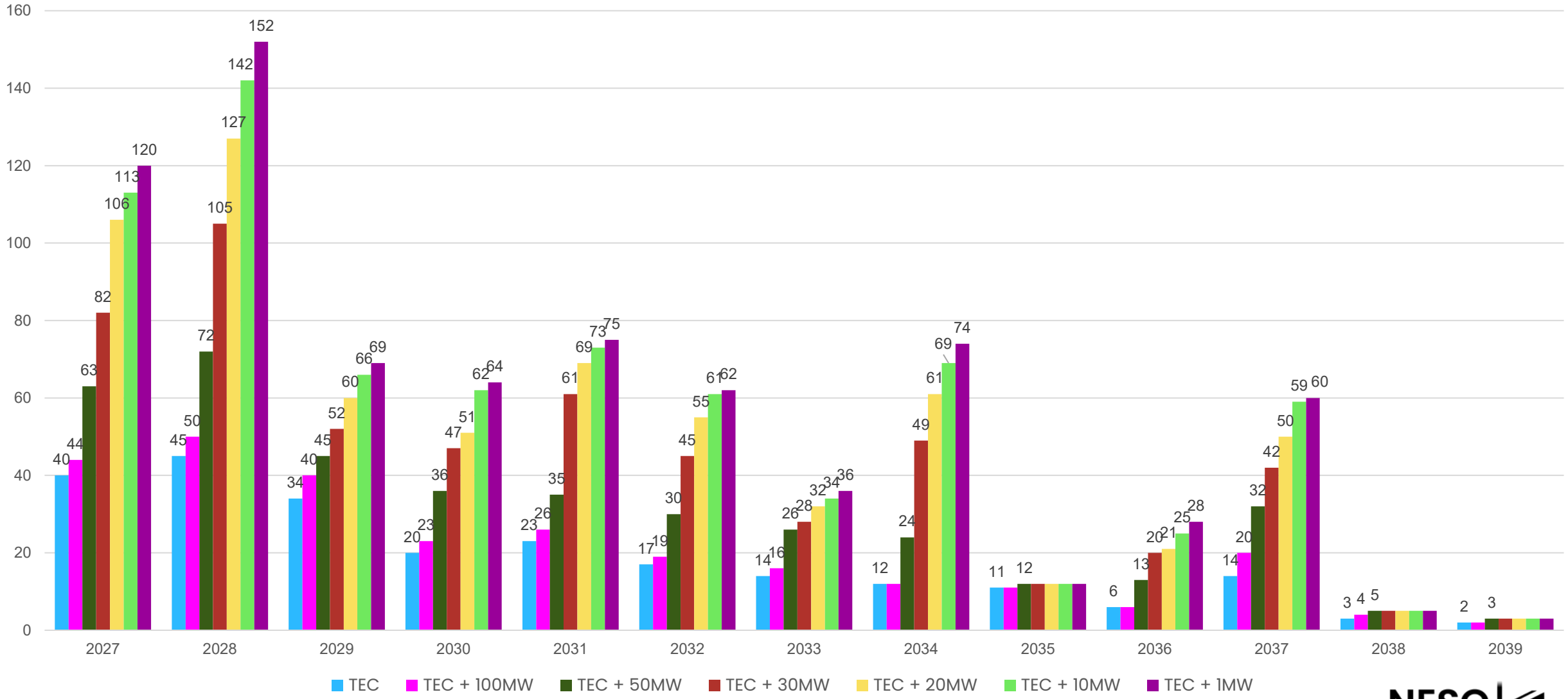
Figure 3.

No. of Connections per year from the TEC Register and Connections Queue



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2028	45	50	72	105	127	142	152
2029	34	40	45	52	60	66	69
2030	20	23	36	47	51	62	64
2031	23	26	35	61	69	73	75
2032	17	19	30	45	55	61	62
2033	14	16	26	28	32	34	36
2034	12	12	24	49	61	69	74
2035	11	11	12	12	12	12	12
2036	6	6	13	20	21	25	28
2037	14	20	32	42	50	59	60
2038	3	4	5	5	5	5	5
2039	2	2	3	3	3	3	3
Total	0	167	548	992	1188	1313	1717

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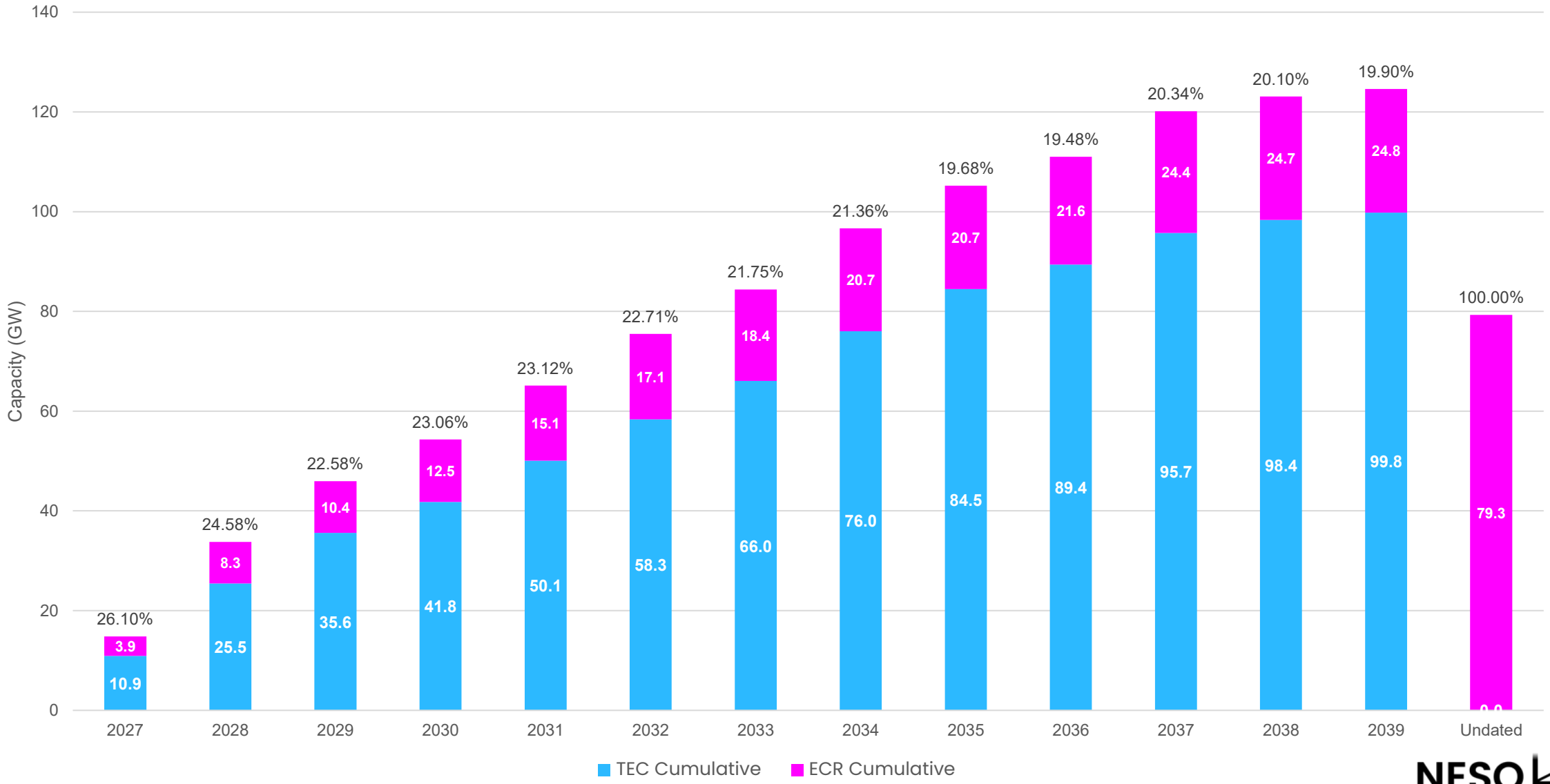
Figure 4.

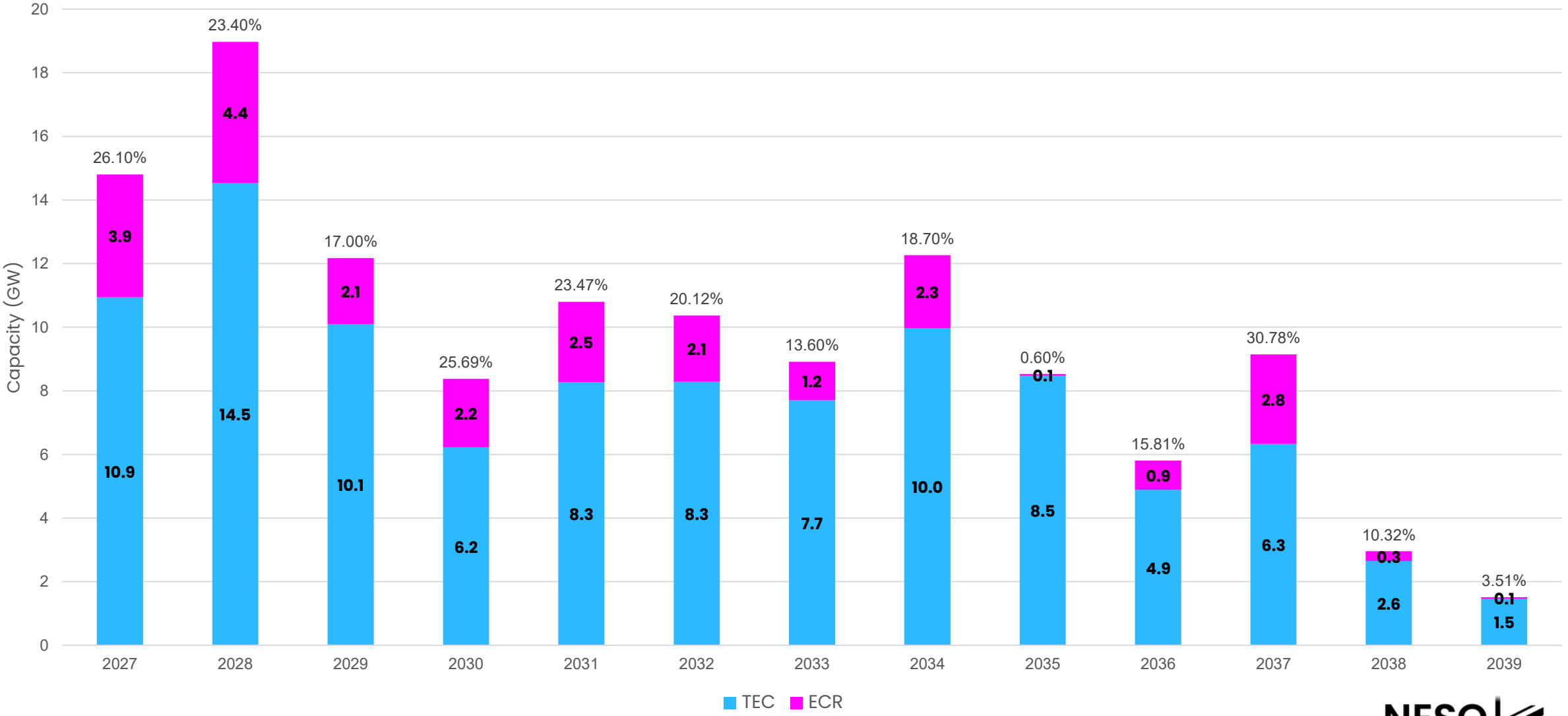
Cumulative Capacity added per year from ECR and TEC



* See Slide 1 for limitations.

Figure 5.

Capacity added per year from ECR and TEC



* 79.3GW of ECR Capacity Is undated.

* See Slide 1 for limitations.

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Cumulative capacity added per year from ECR and TEC

Figure 4.

	ECR Cumulative	TEC Cumulative
2027	3.9	10.9
2028	8.3	25.5
2029	10.4	35.6
2030	12.5	41.8
2031	15.1	50.1
2032	17.1	58.3
2033	18.4	66.0
2034	20.7	76.0
2035	20.7	84.5
2036	21.6	89.4
2037	24.4	95.7
2038	24.7	98.4
2039	24.8	99.8
Undated	79.3	0

Capacity added per year from ECR and TEC

Figure 5.

	ECR per year	TEC per year
2027	10.9	1.3
2028	14.5	1.2
2029	10.1	0.4
2030	6.2	0.2
2031	8.3	0.1
2032	8.3	0.3
2033	7.7	0.5
2034	9.9	0.1
2035	8.5	0
2036	4.9	0.3
2037	6.3	1.1
2038	2.6	0.1
2039	1.5	0.1
Undated	0	0.0

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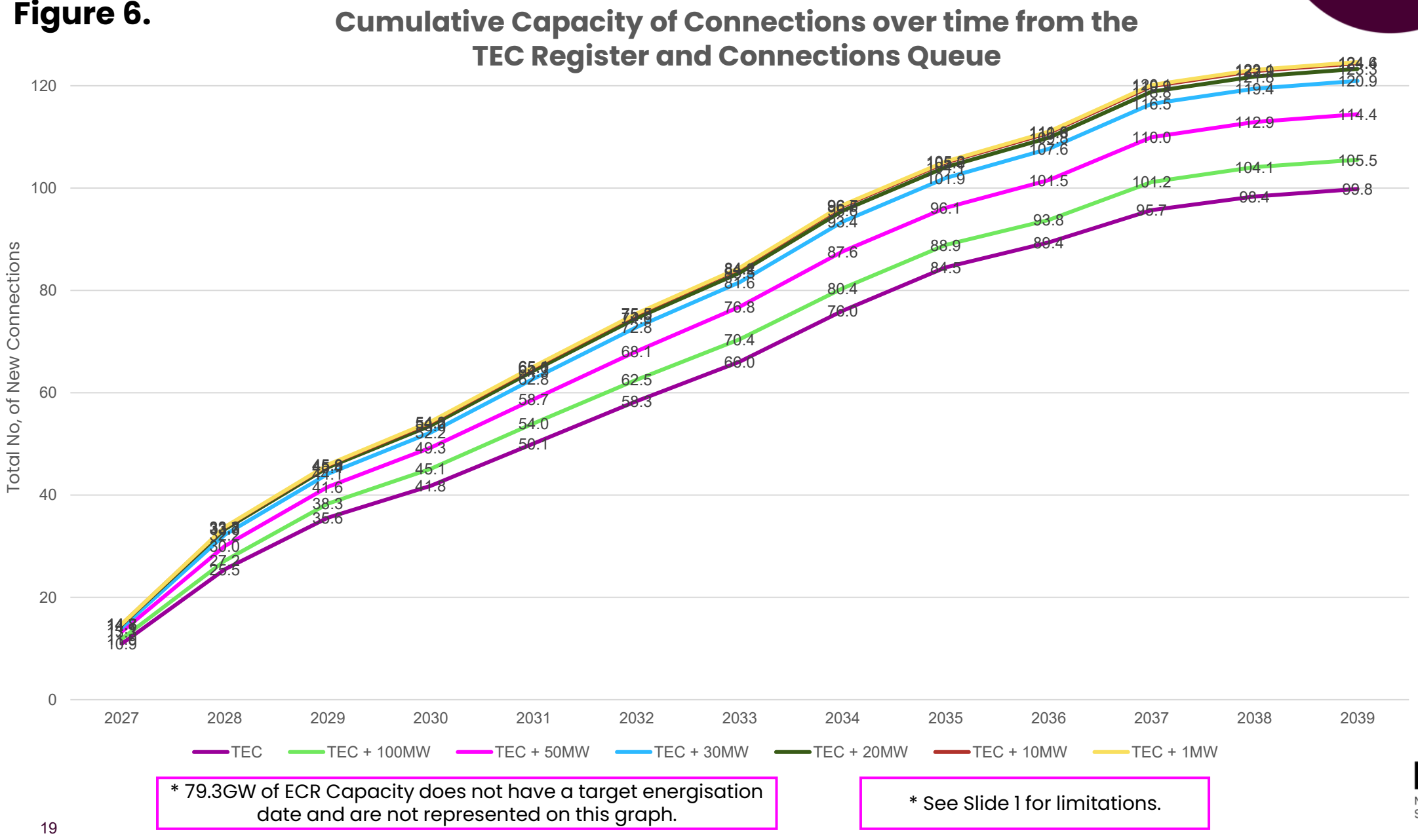
Figure 6.



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Cumulative Capacity of TEC and Connections Queue assets between 2027-2039

Figure 6.

	Cumulative Totals						
Year	**TEC (GW)**	**TEC + 100MW (GW)**	**TEC + 50MW (GW)**	**TEC + 30MW (GW)**	**TEC + 20MW (GW)**	**TEC + 10MW (GW)**	**TEC + 1MW (GW)**
2027	10.9	11.9	13.3	14.1	14.7	14.8	14.8
2028	25.5	27.2	30.0	32.2	33.3	33.7	33.8
2029	35.6	38.3	41.6	44.1	45.4	45.8	45.9
2030	41.8	45.1	49.3	52.2	53.6	54.2	54.3
2031	50.1	54.0	58.7	62.8	64.3	64.9	65.1
2032	58.3	62.5	68.1	72.8	74.6	75.3	75.5
2033	66.0	70.4	76.8	81.6	83.5	84.2	84.4
2034	76.0	80.4	87.6	93.4	95.6	96.5	96.7
2035	84.5	88.9	96.1	101.9	104.1	105.0	105.2
2036	89.4	93.8	101.5	107.6	109.8	110.8	111.0
2037	95.7	101.2	109.9	116.5	118.8	119.9	120.1
2038	98.4	104.1	112.9	119.4	121.8	122.9	123.1
2039	99.8	105.5	114.4	120.9	123.3	124.4	124.6
Data not available	0	26.1	52.7	71.3	75.8	77.5	79.3

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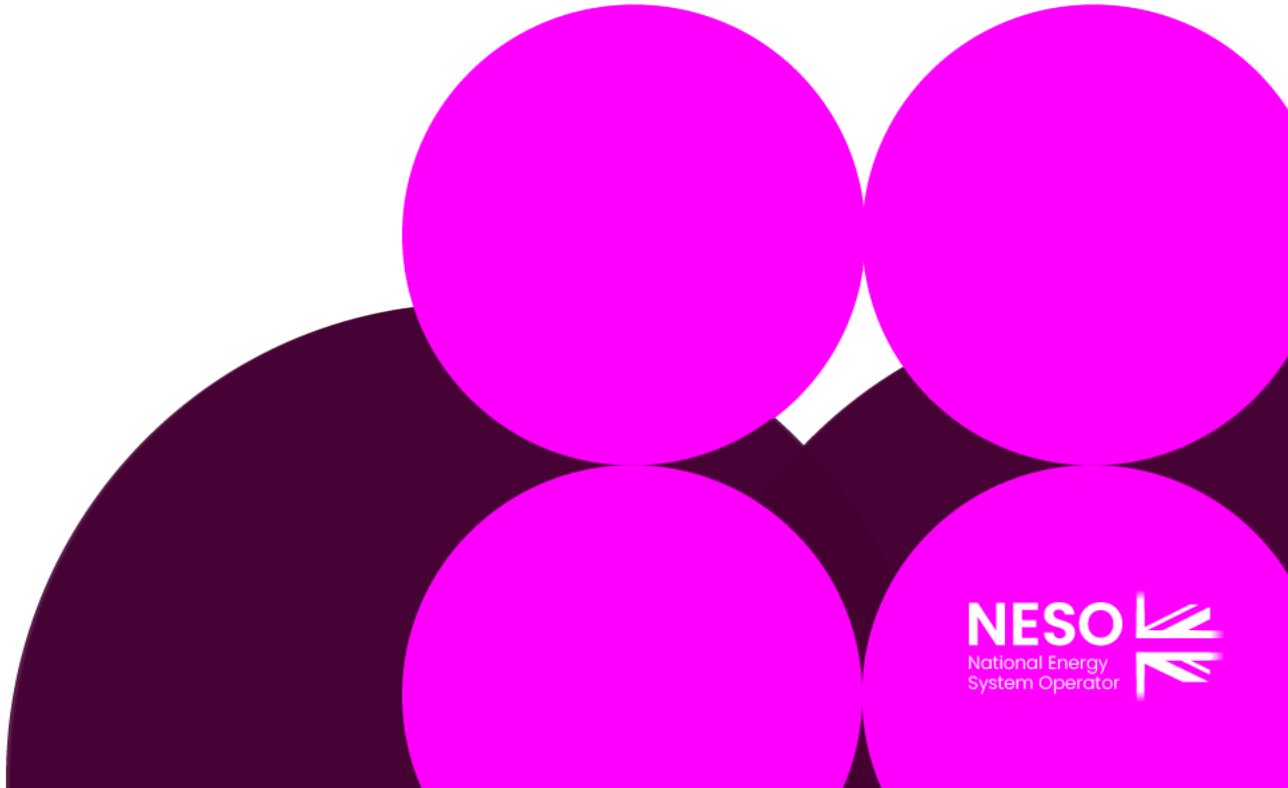
CBA Approach

Antony Johnson – NESO SME



Summary of Presentation

- Recap of Ofgem's Send back
- Scope of CBA and approach
- Code Administrator Consultation CBA Comments
- Spread sheet
- Consequential Code Modifications

Ofgem Send Back (1)

Require the GCRP to facilitate further engagement with relevant stakeholders to undertake an updated and comprehensive reassessment of the CBA. A more detailed cost and sensitivity analysis within the CBA should be included, reconsidering current or future BM exemptions including ANM schemes and Technical Limits, across the previously agreed work packages:

- *An updated and forecast BM price stack*
- *An updated and forward-looking constraint analysis*
- *A re-analysis of demand forecasting*

Ofgem Send Back (2)

The timing of implementation and interaction with other industry developments requires further consideration as we have concerns with the OP's impact and possible duplication. With respect to the interactivity with recent industry developments, we require the GCRP to assess the OP's interactivity and revise the implementation date to be included in the revised FMR:

- *Connection Reform considerations for the connections process*
- *Delivery of CP2030 key objectives*
- *Potential interactivity with REMA proposals*
- *DSO functions focusing on primacy and potential duplication between DSO and NESO operations*

CBA Approach

Repeat the CBA conducted in 2023 with new numbers (i.e. an assessment of the BM Price Stack, Constraint Analysis and Demand Forecasting)

- Actual data available to the end of March 2025
- Published CP 2030 Figures
- Clean Power 2030 Action
- This approach is essential so there is a direct comparison between the CBA run in 2023 and the future CBA to be run

The CBA will then contain an addendum to look at specific sensitivities e.g.

- current or future BM exemptions including ANM schemes and Technical Limits, across the previously agreed work packages
- CBA Comments raised as part of the original GC0117 Code Administrator Consultation
- Restoration
- Regional Demand Forecast error
- Other sensitivities as requested by Workgroup Members through a spreadsheet

The CBA at a Glance

Main CBA

Case 1 – Data to March 2025

- *BM Data*
- *Constraint Analysis*
- *Demand Forecasting*

Case 2 – CP2030 Data

- *BM Data*
- *Constraint Analysis*
- *Demand Forecasting*

Addendum to CBA

- Current or future BM exemptions including ANM schemes and Technical Limits
- CAC CBA Comments
- Restoration
- Regional Demand Forecast Error
- Workgroup Members comments submitted via spread sheet

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CBA Spreadsheet

- The purpose of the spread sheet is a method by which Workgroup Members can request additional sensitivities can be run in the CBA as an addendum.
- CBA's are very resource intensive and we need to be sensible about the requests
- It is proposed to invite Workgroup Members to request what sensitivities can reasonably be undertaken, for the NESO to review these requests on what can reasonably be achieved, for the workgroup and Ofgem to agree these sensitivities ahead of the CBA.
- Once the workgroup have agreed the scope of the CBA as outlined above and the CBA has started it cannot or will not be changed.

CBA Comments from the Code Administrator Consultation

Northern Powergrid Code Administrator Consultation Response

- GC0117 Final Modification Report and Annexes

Consequential Code Changes

Grid Code

- Clarifications to Compliance Process – An approach similar to that used for GC0171 could be adopted as a starting Point – would be required after GC0117 decision but ahead of the GC0117 obligations coming in
- Changes to data flows and IT Systems necessary to facilitate GC0117 – post decision but before implementation – even if retrospectivity were to covered the earliest would be 3 years after GC0117 decision
- Potential retrospectivity

SQSS

- Change definition of Large Power Station

CUSC

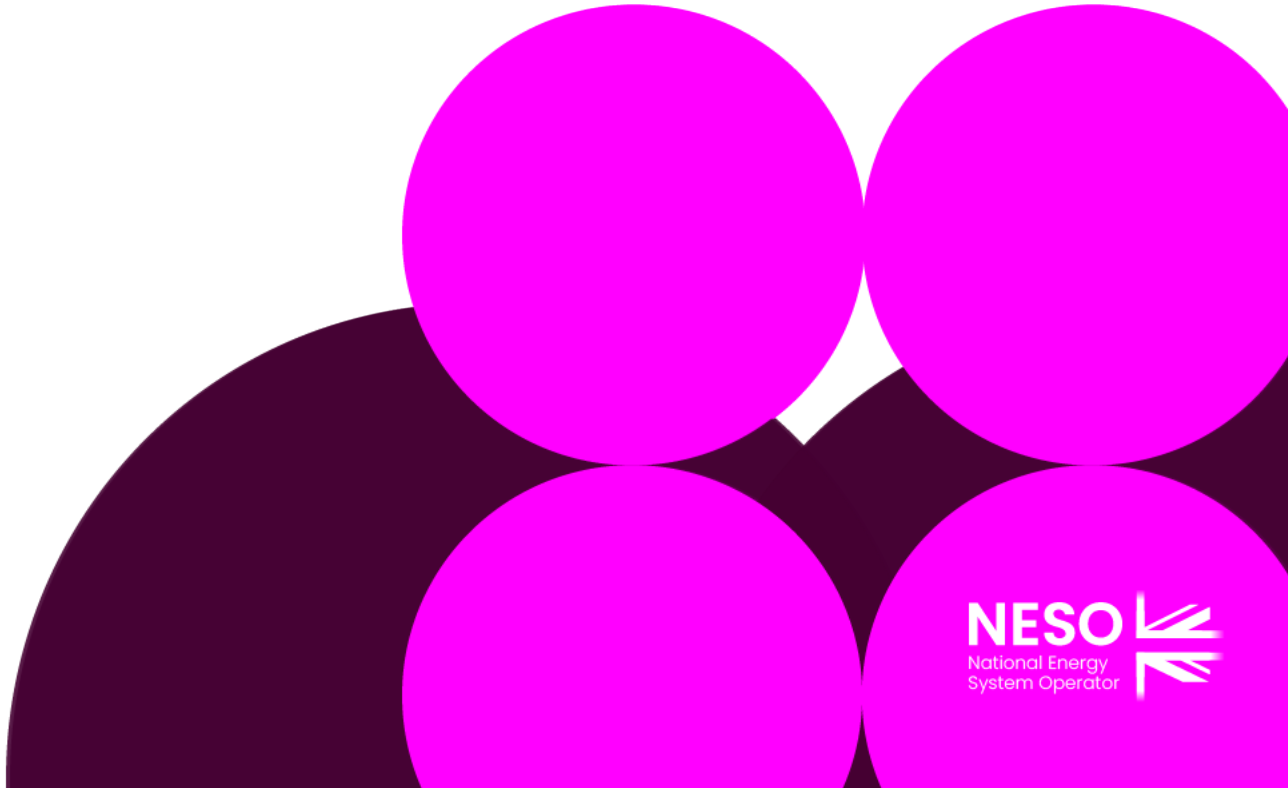
- Change definition of Large Power Station

General

- Code changes would need to be consistent with developments for Reformed National Pricing (RNP – formerly REMA) and TIDE.

Action Review

Claire Goult – NESO Code Administrator



GC0117 Actions Review

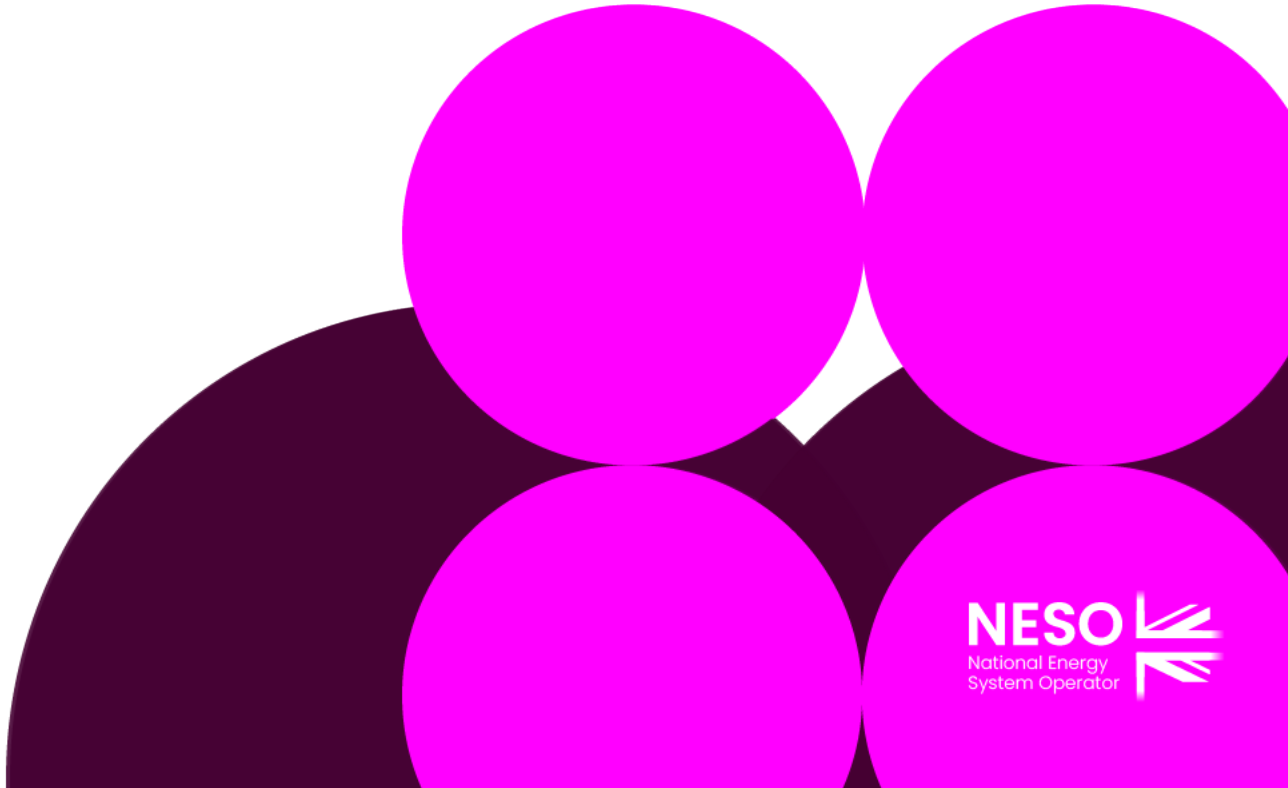
Action Number	Workgroup Raised	Owner	Action	Due by	Status	Latest
1	WG1 (24)	CG/JR	Send out updated slides and remaining invites	WG2 (25)	Closed	
2	WG1 (24)	CG	Raise concerns regarding voting expressed by members internally	WG2 (25)	Closed	Concerns could be raised in 'Any other comments' section of 2nd CAC
3	WG1 (24)	TJ	Engage with CBA team to ensure any of the CAC responses are reflected in the CBA (raised by AC)	TBC	Closed	
4	WG1 (24)	TJ	Regarding consequential changes to other codes, provide further information and timelines	TBC	Closed	
5	WG1 (24)	TJ	Research BELLA versus BEGA numbers	TBC	Ongoing	Reached out to internal teams in connections.
6	WG1 (24)	PD	Ofgem to confirm if the new CBA is only to be done on the 'Original Proposal (OP)' solution (ie 10MW) or OP and Alternative	WG2 (25)	Closed	Confirmed CBA will be done on both
7	WG1 (24)	TJ	CBA Representative to attend the Workgroup meeting to explain the process clearly	TBC	Closed	
8	WG1 (24)	MS (TIDE project)	Presentation on TIDE to discuss the relationship with GC0117	WG2 (25)	Closed	
9	WG1 (24)	CG	Adding in to the report a simple table showing the total level of embedded generation in 2019, 2025 and forecast to be in 2030 (Suggested by GG)	TBC	Ongoing	Will be added into Second CAC

GC0117 Actions Review

Action Number	Workgroup Raised	Owner	Action	Due by	Status	Latest
10	WG1 (24)	PD	Confirm whether all the additional items mentioned in the Ofgem letter need to be explicitly added to the ToR, or if they are implicitly covered	WG2 (25)	Closed	Confirmed no new ToR to be added
11	WG2 (25)	TJ	Investigate if there are any comments made on the original CBA in CAC Responses	WG3 (26)	Propose to close	NPG response highlighted
12	WG2 (25)	CG/SK	Circulate previous CBA documents (Annex sent be email) – any previous CBA slides available	WG3 (26)	Propose to close	Sent with papers for WG3
13	WG2 (25)	MT	Forecast Embedded Generation Levels data – Could figure 6 be provided as a table. Produce tables on the GC0117 data 10MW and 100MW	WG3 (26)	Propose to close	Slides provided in WG3
14	WG2 (25)	PY/IN	Investigate whether a market facilitator should be present in these discussions.	TBC	Ongoing	CG sent email to follow up action
15	WG2 (25)	JB/CG	To email concerns regarding connections to the Chair to circulate with connection colleagues	WG3 (26)	Propose to close	Connections team responded to the query.
16	WG2 (25)	TJ	Set out a table breaking down Ofgem send back letter and how these will be addressed – clear direction (BS request)	WG3 (26)	Propose to close	Slides presented at WG3
17	WG3 (26)	All	Populate the spreadsheet	09/01/26? TBC	Open	
18						

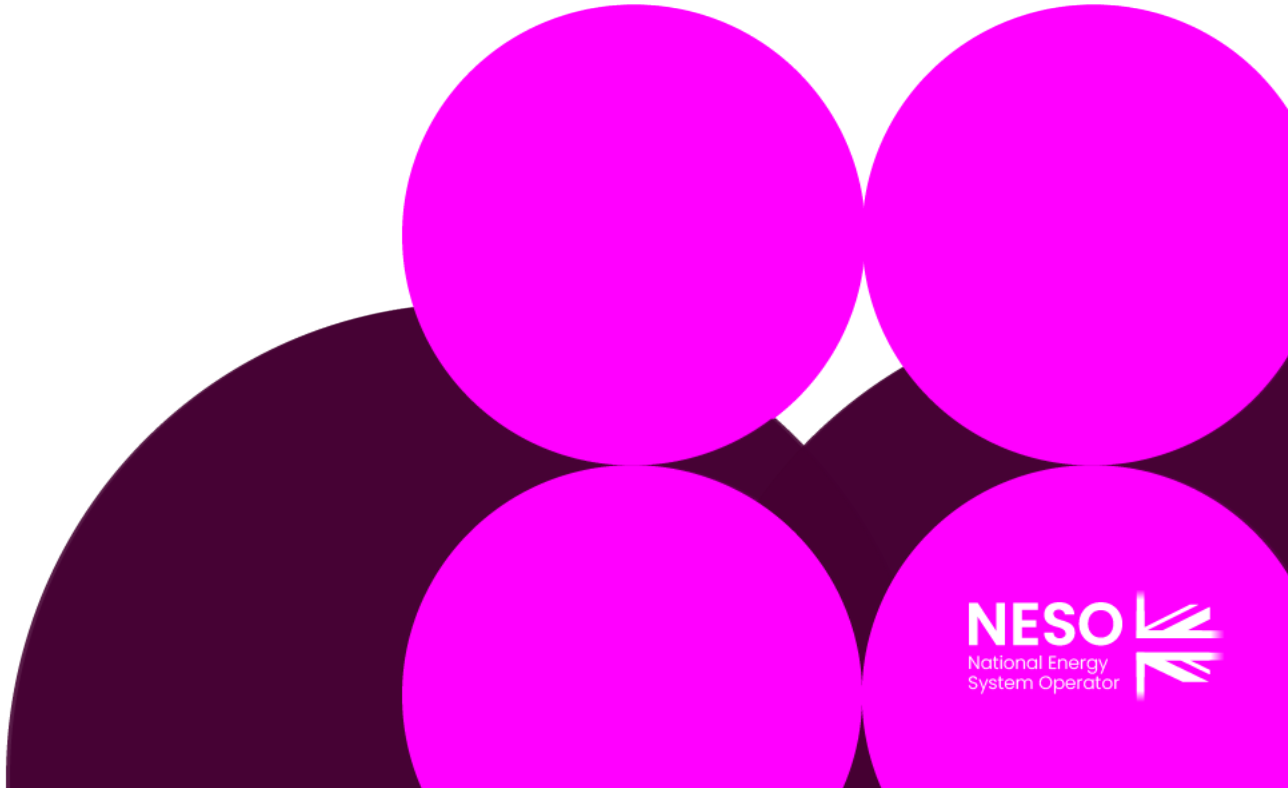
Any Other Business

Claire Goult – NESO Code Administrator

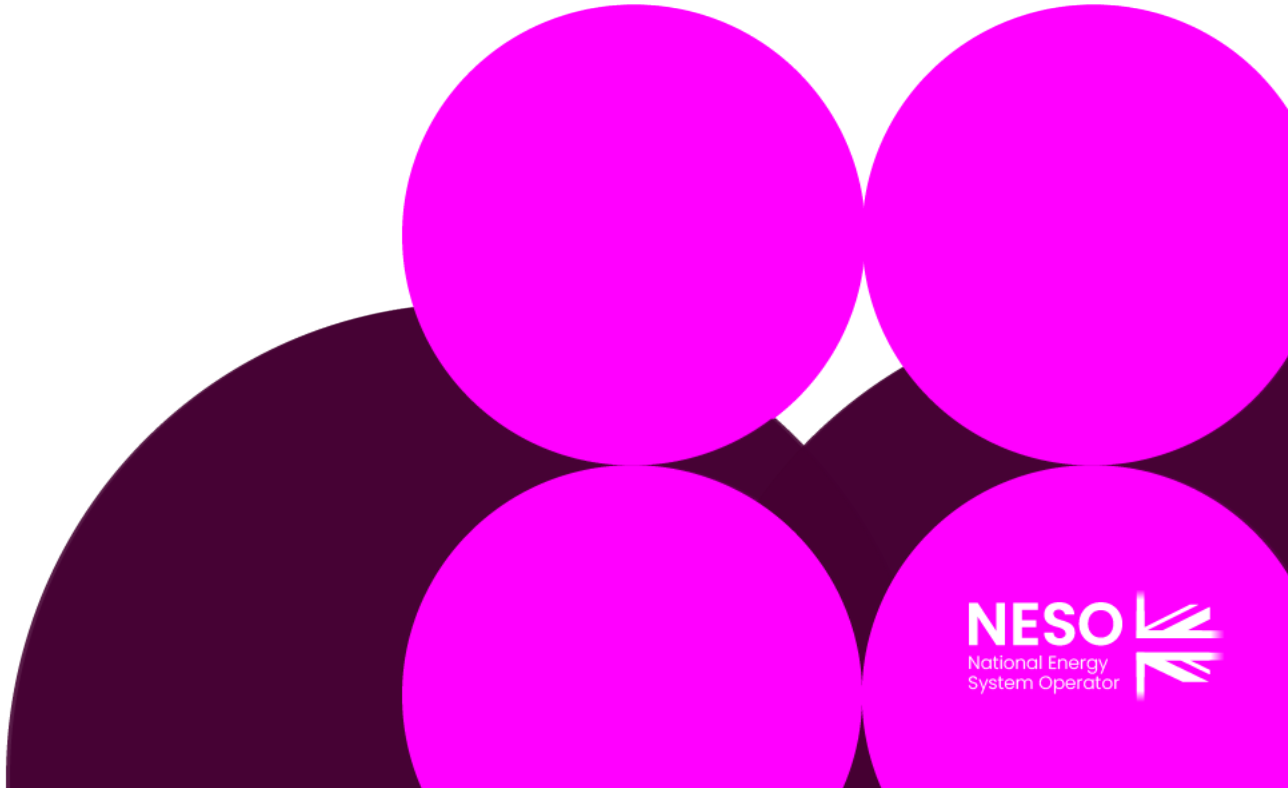


Next Steps

Claire Goult – NESO Code Administrator



Appendix



Terms of Reference

Workgroup Term of Reference
a) Implementation and costs;
b) Review draft legal text should it have been provided. If legal text is not submitted within the Grid Code Modification Proposal the Workgroup should be instructed to assist in the developing of the legal text;
c) Consider whether any further Industry experts or stakeholders should be invited to participate within the Workgroup to ensure that all potentially affected stakeholders have the opportunity to be represented in the Workgroup. Demonstrate what has been done to cover this clearly in the report
d) Consider EBR implications
e) The current transmission and generation characteristics in Scotland compared to those in England and Wales and whether the rationale for the thresholds being set at the current levels still applies given the current and projected generation composition and transmission infrastructure;
f) Cross code impacts (BSC, CUSC and DCode) and impact on EBR;

Terms of Reference

Workgroup Term of Reference
g) Consider any emerging thinking from the Open Network project;
h) Any interaction with generator licencing thresholds or requirements;
I)The impacts for stakeholders including NGESO, iDNOs, TOs, DNOs and generators;
j) Implications for new connectees in relation to data exchange, planning, market engagement and any other areas of change;
k) The implications associated with implementing any changes retrospectively so that they apply to existing connectees rather than just for new connectees; and
l) The implementation options together with the associated costs and benefits.