

Public

Forecasting Stakeholder Focus Group

23 October 2024

Rich Sykes, Product Manager
John Walsh, Energy Forecasting Manager

Welcome & Agenda

Time	Title	Details
15:00 – 15:15	Welcome & setting the scene	<ul style="list-style-type: none">• Role of the Group• Previous discussions
15:15 – 15:25	Latest Energy Forecasting Improvements	<ul style="list-style-type: none">• New wind power generation model• New available data sets
15:25 – 15:35	Platform for Energy Forecasting (PEF)	<ul style="list-style-type: none">• Release Plan walk-through
15:35 – 16:15	Product Development Beyond 2025	<ul style="list-style-type: none">• Interactive mural board session to explore forecasting product development themes beyond 2025
16:15 – 16:25	Q&A	<ul style="list-style-type: none">• Interactive Q&A session
16:25 – 16:30	Next steps	<ul style="list-style-type: none">• Future engagement opportunities
16:30	Close	

Structure of the Session



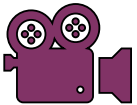
Please post any questions you have for us in the Teams chat or raise your hand – when asking a question, please introduce yourself, and your organisation, this will enable us to follow up with you after the event if necessary



Out of scope questions will be forwarded on to the appropriate NESO team or expert for a direct response. We may ask you to contact us by email to ensure we have the correct contact details for the response



If you have any further questions after the webinar, please do not hesitate to get in contact with us at box.balancingprogramme@nationalenergyso.com



Please note this session will be recorded and published on the NESO website

Role of the Forecasting Stakeholder Focus Group

Rich Sykes, Product Manager

Role of the Focus Group



Purpose

The purpose of this forum is to establish a working group focused on improving the accuracy of energy forecasts, and exploring innovative methods of forecasting through the use of new data and modelling techniques.

The group will collaborate with industry stakeholders to align ESO's forecasting enhancements with their expectations, and continuously engage with them to develop plans that are ambitious and feasible



Objectives

- Improve the accuracy of Energy forecasts (Demand & Generation)
- Explore innovative methods of forecasting using new data and modelling techniques
- Collaborate with stakeholders to align forecasting enhancements with expectations

Deliverables

- Actionable recommendations to improve the overall accuracy of demand forecasts
- Exploration and evaluation of innovative methods and data-driven modelling techniques for forecasting
- Incorporating industry suggestions in our future roadmap planning
- Regular progress reports on the working group's achievements and milestones

Stakeholder Collaboration & Engagement Process



- Learn from stakeholders' experiences and understand their current pain points in forecasting
- Plan and implement improvements for the future of forecasting in line with the balancing programmes forecasting roadmap and the evolve initiative
- Engage with stakeholders bi-monthly* on an ongoing basis, both remotely and in person.
- Encourage stakeholder input to ensure plans are ambitious, achievable, and in alignment with industry priorities

Focus Group Discussions to Date



- How we forecast



- Forecasting problem – National Demand
 - Embedded generation
 - Time of use tariffs and demand flexibility



- Forecasting Roadmap updates



- Forecasting improvements we are making
 - Solar, wind, and national demand
 - Steps towards modelling non-renewable embedded generation

Latest Energy Forecasting Improvements

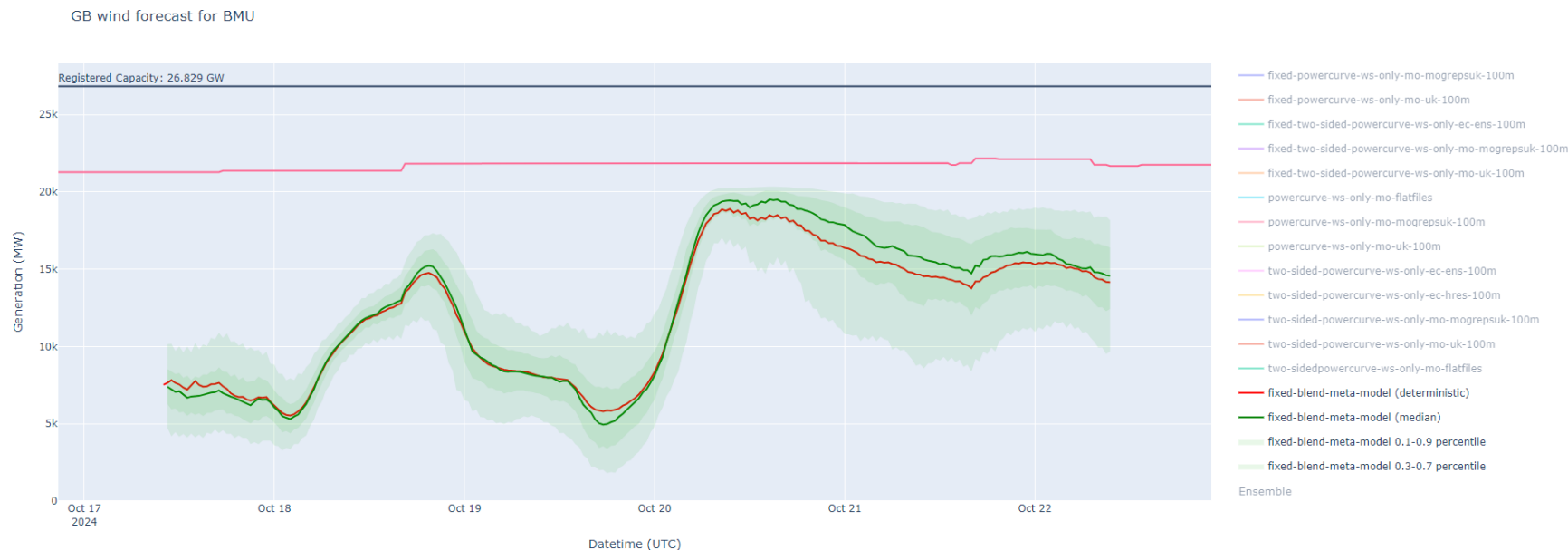
John Walsh, Energy Forecasting Manager

New Wind Power Generation Model

PEF-Azure is our new flexible and scalable platform, to enable the development of new forecasting products, following modern data science and software development best practice.

The model in the initial release will benefit from some initial improvements:

- Use of richer weather forecast (NWP) data.
- 24 frequent forecasts per day (from 8 per day)
- Ensemble forecasting, where a range of equally-likely weather scenarios are used to support risk-based decision making (e.g., constraints, margins, reserve).
- Automated adjustments for *notified* (REMIT/eGAMA) windfarm outages (inc partial reductions).
- Improved IC Metric performance.



New Available Data Sets

At the previous Forecasting Stakeholder Focus Group, additional datasets were requested covering a wide range of data entities and NESO business functions.

Energy Forecasting have published three new data sources, comprising:

- The complete set of Wind BMU forecasts, covering ~245 units. Note: BMRS only captures ~95% of NESO-registered windfarms.
- The selected *Profile Day* used by NESO to create it's National Demand forecasts.
- The GB *public-school holiday* factors used by NESO, to adjust it's National Demand forecasts during periods of school holidays.

The image displays three screenshots of the NESO data portal interface, each showing a different dataset with its description and a table view.

14 Day Ahead Operational Metered Wind Forecast
 This resource contains the national 0-14 day ahead wind forecasts for all the windfarms which provide real-time operational metering (SCADA telemetry) to the ESO.
 Total rows: 649

Demand Profile Dates
 This resource contains the historic and forecast profile dates used to convert our Cardinal Point forecasts into half hourly demand forecasts between the start of 2018 up to 14 days ahead.
 The profile dates are the ESO's estimate of the historic date which will most closely match the forecast date in terms of weather, embedded generation, time of year, recurring calendar activities and special events. These dates can change as we get closer to real time as our weather forecasts are updated and certainty improves.
 Total rows: 2,495

School Holiday Percentages 2024/25
 This resource contains the population weighted percentage of Public schools on holiday across GB and for each Local Authority as well as the population multipliers given to each Local Authority.
 This resource is constructed using the data which is available from the various local authorities websites on the school holiday periods. As private schools manage their holidays separately, they have been excluded from the dataset for now, but we are looking whether these can be included.
 The City of London local authority does not coordinate school holidays as most of the schools there are private. It has been excluded for now but may be included in future if private schools are included.
 This data is used as an input into our demand models.
 Total rows: 71,829

Local_Authority	Multiplier	Date	School_holiday
Aberdeen	0.00305763	2024-06-27	0
Aberdeen	0.00305763	2024-06-28	0
Aberdeen	0.00305763	2024-06-29	0
Aberdeen	0.00305763	2024-06-30	0

Platform for Energy Forecasting (PEF) Release Plan

Rich Sykes, Product Manager

Platform for Energy Forecasting (PEF) Release Plan

**Q3 FY 24/25
(Oct 24–Dec 24)**

Key Capabilities:

- Visualisations and validation tools for the Energy Forecasting team

Q1 FY 25/26 (Apr 25–Jun 25)

Key Capabilities:

- Reporting and situational awareness tools for the control room

Key Enablers

- Integration with Network Access Planning tools for improved studies

**Q3 FY 25/26
(Oct 25–Dec 25)**

Key Capabilities:

- Continuous visualisations and validation tool improvements

Continuous model improvement

Q2 FY 24/25 (Jul 24–Sep 24)

Key Capabilities:

- New Strategic Azure Platform deployed
- New Wind Power Generation Model

Key Enablers

- API's to enable OBP integration

Q4 FY 24/25 (Jan 25–Mar 25)

Key Capabilities:

- Models migrated from Legacy tools to Strategic Azure Platform

Key Enablers

- Forecast output changes for Quick and Slow Reserve

Q2 FY 25/26 (Jul 25–Sep 25)

Key Capabilities:

- Continuous reporting and situational awareness tool improvements

Key Enablers

- Forecast grouping to support restoration regional reporting

Q4 FY 25/26 (Jan 26–March 26)

Key Capabilities:

- Advanced Analytics data integration

Key Enablers

- Legacy Energy Forecasting System retirement strategy

Forecasting Product Development Beyond 2025

Rich Sykes, Product Manager

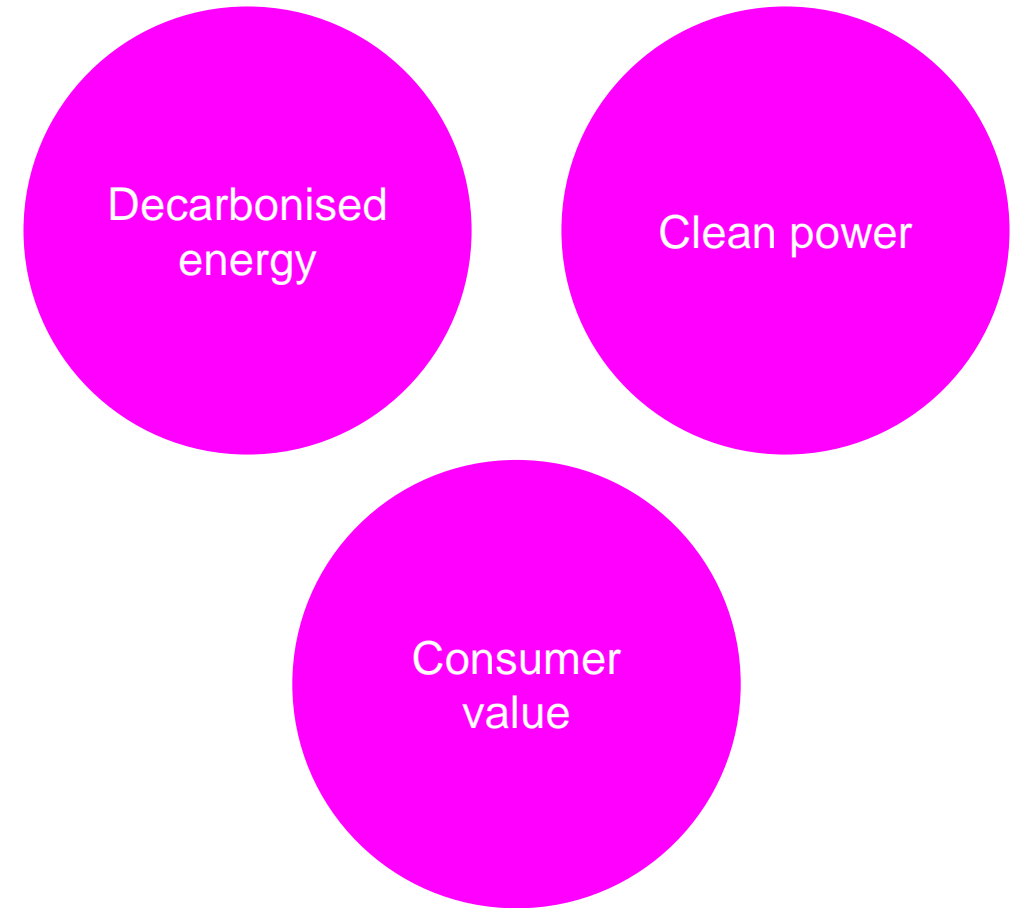
Product Development Beyond 2025

At the June 2024 Balancing Programme event we hosted 3 breakout sessions which looked at **product development beyond 2025** in the forecasting space.

- Participants could:
 - Suggest their own ideas for new capabilities
 - Were requested to give a date for when each new capability was needed
 - Given 3 votes to prioritise capabilities

Topics identified at the event we want to dive further into:

- Interconnector forecasts
- Inertia forecasts
- Constraint forecasts
- Demand side flexibility availability forecasts
- Publish our forecast methodology
- Elexon boundary level forecasts
- Learnings from other industries; data, AI etc



Q&A

Rich Sykes, Product Manager

John Walsh, Energy Forecasting Manager

Engagement Opportunities ...



NESO newsletters with Balancing Programme content issued regularly, providing updates between online & in-person events



Offer of 1-1 relationship managers within the Balancing Programme

You can sign-up to our London November Balancing Programme Event by clicking [here](#)

Next Steps . . .



Slides from today's session will be published on our website, along with the webinar recording



Subscribe to our new NESO newsletter [here](#); please select **Future of Balancing Services inc. Balancing Programme** to keep up to date.



We welcome your feedback & questions – please get in contact with us at box.balancingprogramme@nationalenergyso.com.



Sign-up to our other Stakeholder Focus Groups for Optimisation & Forecasting – [Balancing Programme Stakeholder Focus Groups](#).



If you are interested in a regular meeting with a representative from the Programme and would like more information, please get in contact using the email address above.

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