Public

Ref: FOI/24/0069

National Energy System Operator
Faraday House
Gallows Hill
Warwick
CV34 6DA

InformationRights@nationalenergyso.com

nationalenergyso.com

29 April 2025

Dear requester

Request for Information

Thank you for your request for information which we have considered under the Freedom of Information Act 2000 (FOIA) and the Environmental Information Regulations 2004 (EIR).

Request

Your request for information was as follows:

I am writing to request information under the Freedom of Information Act and the Environmental Information Regulations.

On 17 January 2025, NESO published a response to a request for information on correspondence between NESO and the Department for Energy Security and Net Zero relating to the Clean Power 2030 advice. This response can be found here: https://www.neso.energy/document/352516/download

You refused the initial request for all correspondence on the grounds that it would exceed the appropriate cost limit, after which the requester asked NESO to limit their search to correspondence with six named DESNZ staff.

I would now like to request copies of all correspondence between NESO staff and DESNZ officials between 23 August 2024 and 5 November 2024 where the assumptions of carbon prices and natural gas prices within the Clean Power 2030 report were discussed. This should include emails, records of telephone calls and records of video call meetings.

Our response

As a new public corporation, NESO became subject to the Freedom of Information Act 2000 (FOIA) on 1 October and NESO is also subject to the Environmental Information Regulations 2004 (EIR). We have first considered whether your request falls within the definition of environmental information as set out in Regulation 2(1) the EIR and should therefore be considered under the EIR. There is an exemption at Section 36 of the FOIA for environmental information which has the effect of routing all requests for environmental information via the EIR. In our opinion, the information that you have requested falls within the definition of environmental information, and we have therefore considered your request under the EIR.

We confirm that we hold information in scope of your request.

We have attached copies of the correspondence that falls within the scope of your request with the exception of some information that we judge to fall within one of the EIR exceptions.

We hold some information which comprise draft and incomplete data and analysis which we have withheld. The EIR exception at Regulation 12(4)(d) allows us to refuse to disclose information to the extent that "the request relates to material which is still in the course of completion, to unfinished documents or to incomplete data".

This EIR exception is subject to a public interest test:

- NESO is mindful that the EIR requires us to apply a presumption in favour of disclosure when considering the public interest test. There is a public interest in NESO, as a public corporation, being accountable for its advice. There is a general public interest in transparency in terms of the activities of public sector organisations and public corporations. NESO acknowledges that information about our assumptions behind the Clean Power 2030 advice could help to inform public debate around clean power, energy security, and energy costs which affect private and business consumers. There is a public interest in furthering public understanding of the costs and assumptions used in the development of public energy policy, planning and investment. NESO recognises that there is a public interest in UK and global adoption of renewable energy sources and decarbonisation plans which impact on the environment.
- NESO does not believe, however, that there is a public interest in releasing draft and unfinished data which may lead to confusion of versions and public misinformation, particularly where third parties may use the information as the basis for commercial or policy decision-making. In many cases, the withheld information is information that was superseded or not used in the final analysis and advice, so it would be misleading to publish this information which had no impact on the final analysis. NESO has published the final version of its Clean Power 2030 report with the complete analyses and advice and provided further data and analysis which informed the report. This published information

includes our assumptions log. This suite of documents provides a complete and accurate set of data, analysis and advice which is easily accessible and available to everyone.
- Having weighed up the public interest arguments, we believe that the public interest lies in maintaining the exception and withholding the information.

There is a very small amount of information that is commercially sensitive information which we received from DESNZ.

The exception at Regulation 12(5)(e) allows public authorities and public corporations to withhold information where disclosure would adversely affect "the confidentiality of commercial or industrial information where such confidentiality is provided by law to protect a legitimate economic interest".

We understand that the information in question is derived from third parties that DESNZ are currently in commercial negotiations with and that the disclosure of the information in question could adversely affect the outcome of those negotiations. Whilst contractual terms are being negotiated and finalised disclosure would be likely to impact on the negotiating positions and commercial interests of DESNZ and the other parties.

Non-disclosure agreements (NDAs) are in place to protect the detailed and market sensitive information and these NDAs prohibit the release of data and information derived from those data outside of a very narrow list of parties.

This EIR exception is subject to a public interest test:

- As we have stated above, NESO is mindful that the EIR requires us to apply a presumption in favour of disclosure when considering the public interest test. We are also conscious that there is a public interest in NESO, as a public corporation, being accountable for its advice to the Government and that there is a general public interest in transparency in terms of the activities of public sector organisations and public corporations.
- Information about Great Britain's energy supply, security and costs is very much a subject of public interest and debate at the current time, as is the approach to clean power and there is a public interest in furthering public understanding of issues and decisions which impact on members of the public.
- There is, however, a public interest in the Government being able to ensure value for money and negotiate robust contractual terms with providers who operate within a competitive energy market within Great Britain.
- The ability to negotiate effectively with companies involved in the energy market and related supporting services also influences the security of energy supply for GB and there is a clear public interest in ensuring the reliability of electricity transmission and preventing the disruption of supply to households, businesses, industry, transport infrastructure and vulnerable individuals.

- Where the disclosure of commercial costings could impact on pricing and value for money this has the potential to adversely affect costs to consumers which would not be in the public interest.
- The Information Commissioner has acknowledged that there is some inherent public interest in maintaining commercial confidences and that third parties would be discouraged from confiding in public authorities if they did not have some assurances that confidences would be respected.

Having weighed up the public interest arguments, we have concluded that the balance of the public interest lies in maintaining the exception and withholding the confidential and market sensitive information protected by the NDAs.

Finally, we have redacted the names, job titles, and individual contact details of NESO and DESNZ employees. Our approach to the disclosure or redaction of employee names and contact details is based on the seniority of the individuals concerned and the reasonable expectations of the individuals in terms of the publication of their personal data. Regulation 13 of the EIR provides an exception to the right of access where the information in question is personal data.

This concludes our response to your request.

Advice and assistance

Our CP30 information, including workbooks and assumption log is available on our website: Clean Power 2030 | National Energy System Operator.

The Department for Energy Security and Net Zero (DESNZ) have published information about their Clean Power 2030 Action Plan on their website: Department for Energy Security and Net Zero - GOV.UK

Our website provides information about the EIR and the Freedom of Information Act. Please see: www.neso.energy/corporate-information/freedom-information-and-environmental-information-regulations. Should you wish to make further requests for information, please contact informationrights@nationalenergyso.com.

The ICO website provides a range of information for members of the public and provides a general enquiries telephone line and a live chat service which you may find helpful: https://ico.org.uk/global/contact-us/contact-us-public/.

Next steps

You can ask us to review our response. If you want us to carry out a review, please let us know within 40 working days and quote the reference number at the top of this letter.

If you are still dissatisfied after our internal review, you can complain to the Information Commissioner's Office (ICO). You should make complaints to the ICO within six weeks of receiving the outcome of an internal review. The easiest way to lodge a complaint is through their website: www.ico.org.uk/foicomplaints. Alternatively, they can be contacted at: Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

Thank you for your interest in the work of the National Energy System Operator (NESO).

Regards,

The Information Rights Team

National Energy System Operator (NESO)

From: [redacted] (NESO)
To: [redacted] (Energy Security); [redacted] (Energy Security)
Cc: [redacted] (NESO); [redacted] (NESO); [redacted] (NESO)
Subject: RE: [EXTERNAL] ESO cost assumptions follow up
Date: 09 October 2024 15:25:00
Attachments: Baringa Technology_cost_assumptions_DESNZ_vF2.XLS
image001.png
image002.png
20241003_CP30 Economic Impact - DESNZ- Ofgem.pdf

Hi [redacted]

Thank you so much for your email.

- Cost Assumptions: You can find the cost assumptions for the different technologies in the "InputsForModel" tab of the attached Excel file. We have incorporated your comments and applied CPI inflation as well as an uplift on the renewable technology costs based on the AR6 ASP technology inputs from DESNZ - see “DESNZ AR6 ASP Inputs” tab.
- Sensitivities: We have conducted two sets of sensitivities. However, we have not mixed and matched the sensitivities. It would be interesting to explore this further, and we can certainly investigate it once we finish the basic analysis and the report. Please let us know if this would be beneficial to see match and mix sensitivities. The 2 set of sensitivities we have done can be seen below:
  - [redacted]
  - Gas sensitivity based on a high value and a low value. For high gas sensitivity we used 2022 gas price to demonstrate the clean power system would provide more power price stability if exposed to such historic high gas again and low gas price sensitivity was done using DESNZ central projection.
- Gas Prices: In our analysis, we have assumed gas prices leaning towards the higher end of DESNZ's gas price projections. This assumption is consistent with the Holistic Transition FES2024. The reason for this assumption is that recent geopolitical events have impacted the gas supply and demand landscape, leading to price increases. We have reflected this by assuming higher prices in our modelling. You can refer to slide 15 of the attached pack for a visual representation of the gas price differences.
- Hydrogen Fuel Costs: For hydrogen fuel costs, we have assumed a value of 1.2 times the gas prices for all scenarios.

We welcome any feedback or thoughts you or your team might have on these assumptions and analysis. Thank you again for your email.

Kind regards
[redacted]

From: [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>
Sent: Tuesday, October 8, 2024 2:29 PM
To: [redacted] (NESO) [redacted]@nationalgrideso.com>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>
Cc: [redacted] (NESO) [redacted]@nationalgrideso.com>; [redacted] (NESO) [redacted]@nationalgrideso.com>; [redacted] (NESO) [redacted]@nationalgrideso.com>
Subject: RE: [EXTERNAL] ESO cost assumptions follow up

Hi [redacted]

The presentation yesterday was interesting. I had a few questions that are more detailed on input assumptions than for the wider chain! I have copied [redacted] in also.

Firstly, do you have a final spreadsheet you can share on cost assumptions? I assume most are as per the earlier version, but wasn't sure what you decided on renewables post our discussion on this?

With your capex sensitivities, am I right that you vary everything to high..... and then everything to low..... did you run any others, for example renewables high and gas-fuelled low?

Also, it looked like your gas price assumptions are higher than the DESNZ ones? I maybe missed an earlier discussion, but was interested to know the background to that?

What do you assume for hydrogen fuel costs, or do you model the hydrogen system separately? I note your mention of the infrastructure being small due to low assumed take-up.

Thanks,
[redacted]

[redacted]@energysecurity.gov.uk

From: [redacted] (ESO) <[redacted]@nationalgrideso.com>
Sent: 25 September 2024 15:00

From: [redacted] (NESO)
To: [redacted] (Energy Security)
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics
Date: 30 October 2024 10:38:00
Attachments: image001.png
image002.png

Hi [redacted]

My apologies I logged off earlier yesterday. Without the uplift the values are from the FES24 HT pathway: 0.145Euro/kg and with the uplift: 0.174 Euro/kg.

Kind regards
[redacted]

From: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Sent: Tuesday, October 29, 2024 4:23 PM
To: [redacted] (NESO) <[redacted]@nationalenergyso.com>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

OFFICIAL

Thanks [redacted]

Final question (hopefully!) – can you share the carbon price (UK ETS, CPS, + £25 uplift) figure you use for 2030?

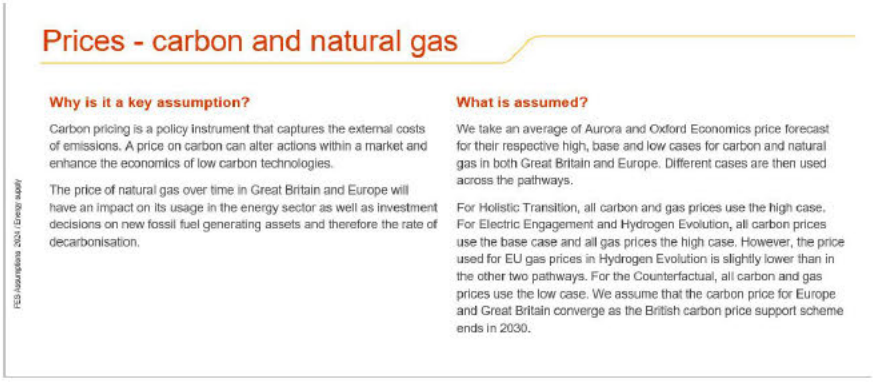
OFFICIAL

From: [redacted] (NESO) <[redacted]@nationalenergyso.com>
Sent: 29 October 2024 16:10
To: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

OFFICIAL

Hi [redacted]

For carbon prices we are using an average of Aurora and Oxford Economics as seen below:



Prices - carbon and natural gas

Why is it a key assumption?

Carbon pricing is a policy instrument that captures the external costs of emissions. A price on carbon can alter actions within a market and enhance the economics of low carbon technologies.

The price of natural gas over time in Great Britain and Europe will have an impact on its usage in the energy sector as well as investment decisions on new fossil fuel generating assets and therefore the rate of decarbonisation.

What is assumed?

We take an average of Aurora and Oxford Economics price forecast for their respective high, base and low cases for carbon and natural gas in both Great Britain and Europe. Different cases are then used across the pathways.

For Holistic Transition, all carbon and gas prices use the high case. For Electric Engagement and Hydrogen Evolution, all carbon prices use the base case and all gas prices the high case. However, the price used for EU gas prices in Hydrogen Evolution is slightly lower than in the other two pathways. For the Counterfactual, all carbon and gas prices use the low case. We assume that the carbon price for Europe and Great Britain converge as the British carbon price support scheme ends in 2030.

FES Assumptions 2024 | Energy supply

We have asked the question to aurora if they are including societal cost of carbon in their carbon prices and this was their response (didn't hear back from oxford economics just yet):

"Our carbon price forecast does not explicitly account for societal impact. Aurora's fundamental model forecasts the UK ETS price based on announced policies concerning the evolution of the scheme's parameters and the expected trajectory of economy-wide emissions. In the near to medium term, the supply of allowances is taken from the announced UK ETS cap of 936 million allowances in Phase 1 (2021-2030), which targets a 68% reduction in emissions relative to 1990 levels. The longer-term supply of allowances is based on the expected reductions in future carbon budgets. Demand for allowances (i.e., emissions covered by the UK ETS scheme) is determined for the power sector based on the generation forecast in Aurora's power market scenarios, while industry emissions are forecasted based on available abatement options.

The price is modelled in two steps:

1. **Industry model**: Industrial abatement is covered by a bespoke industrial abatement model, where the yearly abatement potential is a function of:
    - Available low-carbon abatement options (technology readiness)
    - Emissions reduction efficacy
    - Annual reinvestment needs
    - Abatement cost
2. **Power model**: Abatement is determined by Aurora's bottom-up market-level dispatch model.

The level of realised abatement and the marginal abatement cost determine the UK ETS price each year.

You can find more information on Aurora's carbon price forecast in our strategic insight report here."

Kind regards
[redacted]

OFFICIAL

From: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Sent: Tuesday, October 29, 2024 4:06 PM
To: [redacted] (NESO) <[redacted]@nationalenergyso.com>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

OFFICIAL

Hi [redacted]

Thanks for the quick reply. To check my understanding:

- Are you using the Government's published carbon prices (link here), then adding an additional 25GBP/tonne?
- Do you also include the societal cost of carbon for other emissions (e.g. emissions that are not due to constraints)

Good luck with the publication! Thanks,
[redacted]

OFFICIAL

From: [redacted] (NESO) <[redacted]@nationalenergyso.com>
Sent: 29 October 2024 15:00
To: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

OFFICIAL

Hi [redacted]

Sorry for the delay, we are working on the final bits of CP2030, as it is going for publication now.

1. High carbon price (European carbon price plus a price offset of 25GBP/tonne) for the economic impact analysis for all the pathways, including the Counterfactual.
2. For the constraint cost we have included the societal cost of carbon.

If you need more clarifications please let me know.

Kind regards
[redacted]

OFFICIAL

From: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Sent: Tuesday, October 29, 2024 11:15 AM
To: [redacted] (NESO) <[redacted]@uk.nationalenergyso.com>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

OFFICIAL

Hi [redacted]

Thanks for the answers to these questions! We're still going through your latest slide pack, but a couple of

quick questions that have come up:

- What carbon prices do you assume (both ETS and CPS)?
- Do you include unpriced carbon costs in your system cost analysis? – i.e. the social cost of carbon.

Sorry for the urgency, but if possible can you get back to me today?

Happy to chat is easier. Thanks,
[redacted]

OFFICIAL

From: [redacted] (NESO) <[redacted]@nationalgrideso.com>
Sent: 24 October 2024 23:34
To: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (NESO) [redacted]@nationalenergyso.com>
Cc: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Subject: RE: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

Dear [redacted]

I hope you are doing well.

Please find our answers to your questions in blue below and also the presentation slides from yesterday. If you have any more questions, please do not hesitate to reach out. Thank you.

Kind regards
[redacted]

From: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>
Sent: Wednesday, October 9, 2024 2:04 PM
To: [redacted] (NESO) <[redacted]@nationalgrideso.com>; [redacted] (NESO) <[redacted]@nationalgrideso.com>
Cc: [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted](Energy Security) <[redacted]@energysecurity.gov.uk>
Subject: [EXTERNAL] RE: NESO/DESNZ/Ofgem Analysis session - Economics

Hi [redacted]

Thanks for sharing the slides, and well done again for how much you've achieved in such a short time!

We've reviewed the slides, comments and questions below. We're still at an early stage of our internal costs and bills analysis, so we'll likely follow-up with further questions in a week or so once we can compare against our internal results. Hopefully these comments are helpful, and happy to have a follow-up call to talk them through.

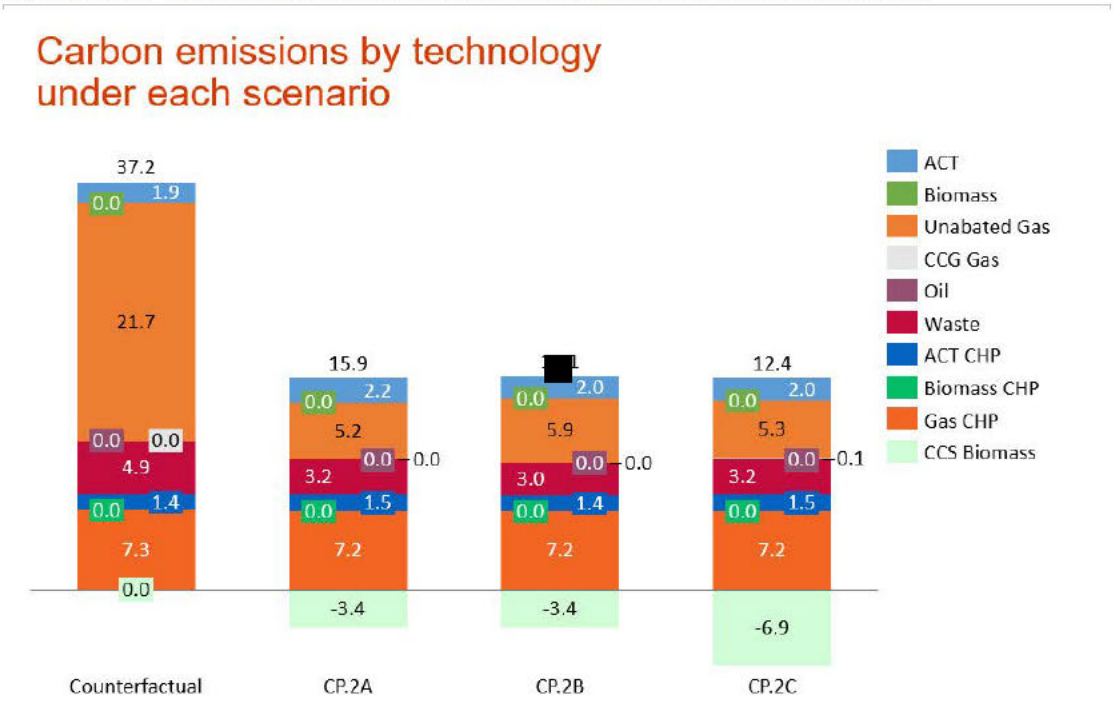
Thanks,
[redacted]

High priority comments (we'd like to understand these before you publish)

[redacted]

Emissions

Emissions: NESO emissions are 20MTCO2 in 2030. We think about 15MTCO2 is needed to meet UK power sector effort share for the 2030 NDC. Does the scenario meet the 2030 NDC power effort share, and can you provide a technology breakdown of the c20MTCO2? In the numbers we have presented we are including emissions from waste generation and CHP, so if these were removed as per CCC methodology the emissions from the power sector would be in the single digits. We have revised figures in latest drafts to align to the CCC sector definitions, so only the 'Unabated gas' block in the following chart is counted for the power sector.



Gas Prices

Gas prices: NESO central assumption is c100p/therm compared to published DESNZ FFP central scenario of 70p/therm, while NESO have used DESNZ central assumptions as you low scenario. This could be confusing, so need a clear explanation of what assumptions have been used and why.
Noted, we'll look to make this clear in our technical annexes and write-up – using 100p/therm means we can make direct comparisons versus today. Gas prices are consistent across the counterfactual and clean power scenarios, using the 2023 value (100p / therm) which lies between the DESNZ central and high gas price cases. We have also performed sensitivity of the gas prices for low and high cases: for high gas sensitivity 2022 gas prices were used, and low gas price sensitivity was done using the Department of Energy Security and Net Zero central projection.

[redacted]

From: [redacted] (NESO) <[redacted]@nationalgrideso.com>
Sent: 07 October 2024 18:38
To: [redacted] (NESO) <[redacted]@nationalgrideso.com>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted]@raeng.org.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted]@ofgem.gov.uk>; [redacted]@ofgem.gov.uk>; [redacted]@ofgem.gov.uk>; [redacted]ofgem.gov.uk>; [redacted] (Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) <[redacted]u@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>
Cc: [redacted] Energy Security) <[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>; [redacted] (NESO) <[redacted]@nationalenergyso.com>; [redacted] (Energy Security)

[redacted]@energysecurity.gov.uk>; [redacted] (Energy Security) [redacted]@energysecurity.gov.uk>
Subject: RE: NESO/DESNZ/Ofgem Analysis session - Economics

Hello everyone

Thank you for your time today and for your valuable feedback and insights.

I have attached the slides from today's presentation, including some additional slides based on our discussion. Please take a look and feel free to share any comments or suggestions you may have.

I kindly request that you treat the PowerPoint and the information provided as confidential and an early draft. Please refrain from sharing it with others outside of our team. Thank you.

Have a nice evening!

Kind regards
[redacted]

-----Original Appointment-----
From: [redacted] (NESO) [redacted]@nationalgrideso.com>
Sent: Wednesday, October 2, 2024 3:02 PM
To: [redacted] (NESO); [redacted] (Energy Security); [redacted] (Energy Security); [redacted] (Energy Security); [redacted] (Energy Security); [redacted] (Energy Security); [redacted] Energy Security); [redacted] Energy Security); [redacted] (Energy Security); [redacted] Energy Security); [redacted] (NESO); [redacted] [redacted]@energysecurity.gov.uk; [redacted]@energysecurity.gov.uk; [redacted] (Energy Security)
Cc: [redacted] (Energy Security); [redacted] (Energy Security); [redacted] Energy Security); [redacted] (Energy Security); [redacted] (NESO); [redacted] (Energy Security); [redacted] (Energy Security)
Subject: NESO/DESNZ/Ofgem Analysis session - Economics
When: 07 October 2024 14:30-15:15 (UTC+00:00) Dublin, Edinburgh, Lisbon, London.
Where: Microsoft Teams Meeting

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