

Cabinet Secretary for Wellbeing Economy, Fair Work and Energy
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Dhaoine, Obair Chothromach is Cumhachd
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Convener
Net Zero, Energy and Transport Committee
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21 September 2023

Dear Edward,

Update on Scotland's renewables and wind power potential

The Scottish Government committed to revise a previously used statistic - that Scotland has 25% of Europe's offshore wind and tidal potential. I write to update the Committee on the work that has been undertaken by the Scottish Government on this matter, and provide the Committee with revised metrics in relation to renewables and wind power potential in Scotland.

The annex to this letter provides additional detail on current and future potential wind generation in Scotland, comparisons with wider geographies, economic impacts, and real-life examples of what wind generation in Scotland could power.

I hope that you find this update useful, and I thank the Committee for your continued support in delivering the transition to Net Zero.

NEIL GRAY

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Summary Note – New Metrics on Renewables and Wind Power in Scotland

Summary

1. Scotland is at the forefront of renewable power, with vast and growing renewable electricity generation resources, underpinned by onshore wind, offshore wind and a range of other technologies.
2. The enormous potential to capitalise on these resources will underpin the Just Transition to Net Zero in Scotland, powering homes and businesses with zero carbon electricity, while providing jobs and supporting economic growth.

Current Renewables and Wind Power in Scotland

3. Scotland has more than doubled its renewable electricity generation over the last decade. In 2022, almost 14GW of renewable electricity generation capacity produced 35 TWh of zero carbon electricity. This is 26% of all renewable capacity and generation in the UK, and represents approximately 2% and 0.4% of all renewable capacity in Europe and the World respectively.
4. Renewable wind capacity alone in Scotland is over 11GW. This is 39% of the UK capacity, and approximately 5% of European and 1% of world total installed wind capacity.
5. In 2022, almost 28 TWh of zero carbon electricity was generated by renewable wind in Scotland, representing 35% of all wind generation in the UK. This could power the equivalent of approximately:
 - a. 10 million households - over a third of the total households in the UK.
 - b. 85% of total Scottish annual electricity demand.
6. The renewable energy sector in Scotland supported over 17,000 jobs and £1.9bn in Gross Value Added (GVA) in 2020. Over 10,000 of these jobs and £1.2bn GVA was supported by onshore and offshore wind¹.
7. For offshore wind specifically, capacity in Scotland is over 2GW. This is 16% of UK installed offshore wind capacity, and approximately 7% of European and 3% of world total installed offshore wind capacity.

Future Renewables and Wind Power in Scotland

8. Realising Scotland's potential to grow capacity in onshore wind and offshore wind (to 20GW and up to 11GW respectively²) by 2030 would result in substantial increases in renewable generation, supporting decarbonisation in Scotland, the UK and beyond.

¹ <https://fraserofallander.org/publications/the-economic-impact-of-scotlands-renewable-energy-sector-2022-update/>

² As outlined in the draft Energy Strategy and Just Transition Plan (ESJTP) Scottish Ministers, special advisers and the Permanent Secretary are covered by the terms of the Lobbying (Scotland) Act 2016. See www.lobbying.scot

9. 11GW of offshore wind in Scotland would represent 22% of the UK ambition for 50GW of offshore wind by 2030, and approximately 10% of the EU ambition for 111GW offshore renewables by 2030³.

10. 11GW offshore wind plus 20GW onshore wind could generate over 85 TWh of renewable electricity. This could power the equivalent of approximately:
 - a. 31 million households – more than every household in the UK.
 - b. 18 million heat pumps – covering over two thirds of households in the UK.

11. Expanding onshore and offshore wind in Scotland could also have substantial economic benefits. Recent analysis⁴ estimates that renewable electricity production could support over 33,000 direct and indirect jobs by 2030 and generate £4.2bn GVA. Over 28,000 of these jobs and £3.6bn in GVA are from onshore and offshore wind.

Conclusion

12. Scotland has enormous strengths and huge potential in renewable electricity generation, and in particular wind power. With the right support in place, renewables and wind power will drive decarbonisation and sustainable, low carbon economic growth in support of Scotland's transition to Net Zero.

³ [Member States agree new ambition for expanding offshore renewable energy \(europa.eu\)](#) – noting that the 111 GW ambition includes all offshore renewables, not only offshore wind.

⁴ [Energy System and Just Transition: Independent Analysis \(www.gov.scot\)](#) – 2030 economic analysis based on a central scenario which includes 8GW offshore wind and 16GW onshore wind.

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