WIND NUMBERS JANUARY 2023

1 CAPACITY AND SUPPLY

ONSHORE

The recent Scottish Government's Onshore Wind Policy Statement (OWPS) 2022 states an ambition for 20GW of onshore wind by 2030, and that Scotland at present has

8.7GW of existing **onshore** wind energy, with

1.2 GW under construction,

4.5GW consented and waiting for construction, and

5.3 GW in planning[1].

That's **8.7 GW installed and working,** with **11.3GW** in the pipeline.

The current operational and pipeline projects, therefore precisely match the Government's 20GW ambition (8.7+11.3=20).

OFFSHORE

Official market reports [2] show that Scotland has
1.8GW of existing **offshore** wind energy, with
1.6GW under construction,

2.3GW consented,

4.2GW undergoing consenting and

28GW recently committed under the recent Scotwind seabed leasing auction.

That's a total of **1.8 MW** installed and working, with **36.1GW** in the pipeline.

TOTALS

This gives 10.5GW (8.7 + 1.8) of operational wind energy capacity overall and a further 47.4GW (11.3 + 36.1)in various stages of development, giving 57.9GW in total.

In practice therefore, the OWPS's policy ambition is clearly easily within sight and can be comfortably achieved without undue sacrifices of the environment and communities' interests. This legitimately raises the question of what we actually need.

2 DEMAND

This figure contrasts with Scottish electricity consumption. The UK Electricity System Operator data [3] shows Scotland has a current peak electricity demand of **4.4GW**. The difference is 57.9 - 4.4 = **53.5GW**.

While this might rise, Scotland's peak electricity demand is expected to be only 5.3GW in 2030, 8.5GW in 2040 and 9.4GW in 2050.

CONCLUSION ON THE NUMBERS

Scotland's existing and future wind energy capacity therefore far exceeds Scottish electricity demand, by orders of magnitude.

3 TRANSMISSION

Surplus electricity generated in Scotland is destined to be shipped south to the (much larger) English market. However, the existing transmission connections southward ("the interconnectors") provide only 6.1GW of capacity[4]. So that is to say, there is no more room for power to be transmitted southwards.

4 THE RESULT

The result of these high levels of renewable energy generation in Scotland, combined with modest Scottish electricity consumption and limited transmission capacity southward means that significant amounts of renewable energy produced in Scotland cannot be used. Both the final versions of OWPS and the new NPF4 have limited, if not altogether dropped, Scotland's electricity exporter role.

Due to the uncontrolled growth of Scottish wind energy and energy costs generally, the cost of constraining Scottish onshore windfarms has risen in the last twelve months. It now stands at £1.25bn since 2013. The annual total has increased four-fold in one year.

Scottish wind energy now accounts for 92% of all UK constraint costs, with 17% of Scottish annual wind farm output being constrained or turned off. A great deal of money spent for providing nothing.

11 January 2023.

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1 OWPS 2022 para 1.1.5.

2 Scottish Enterprise. 2022-Scottish offshore wind market

3 Electricity System Operator. Future energy scenarios 2022, regional breakdown, peak demand. https://www.futureenergyscenarios.com/2022-FES/electricity-maps.html.

4 Electricity System Operator. Electricity ten-year statement, 2021. B6 Boundary, p27.