

The need for onshore wind

National development

We are in a climate emergency, cost of living crisis and also seeking to enhance the security of our energy supply. Onshore wind can address all of these. This is recognised by the Scottish Government's National Planning Framework 4 (NPF4)¹ which was published in February 2023. NPF4 is Scotland's long term spatial planning strategy and categorises onshore wind projects with a generating capacity in excess of 50MW as National Development. In principle it supports all forms of renewable energy generation including onshore wind.

Net zero carbon targets

A 'climate emergency' was declared by the UK Government and the Scottish Government in 2019. The UK Government has set a legally binding target for reducing greenhouse gas emissions to 'net zero' by 2050 and the Scottish Government has a net zero target of 2045.¹ Renewables, and specifically onshore wind, will play an important role in helping achieve these targets.

Scotland currently has almost 9GW of operational onshore wind capacity. The Scottish Government has a target of achieving 20GW of installed onshore wind capacity across Scotland by 2030² in order to help meet their legally binding 2045 net zero target. This is a substantial increase and will require the significant deployment of new onshore wind projects in order to meet this demand for green, low-carbon electricity.

Energy security

Wind energy is a free and inexhaustible resource that has an important role to play as part of a balanced energy mix. It increases energy security by reducing our reliance on imports and builds our resilience to sudden price fluctuations and the uncertainty of global markets.

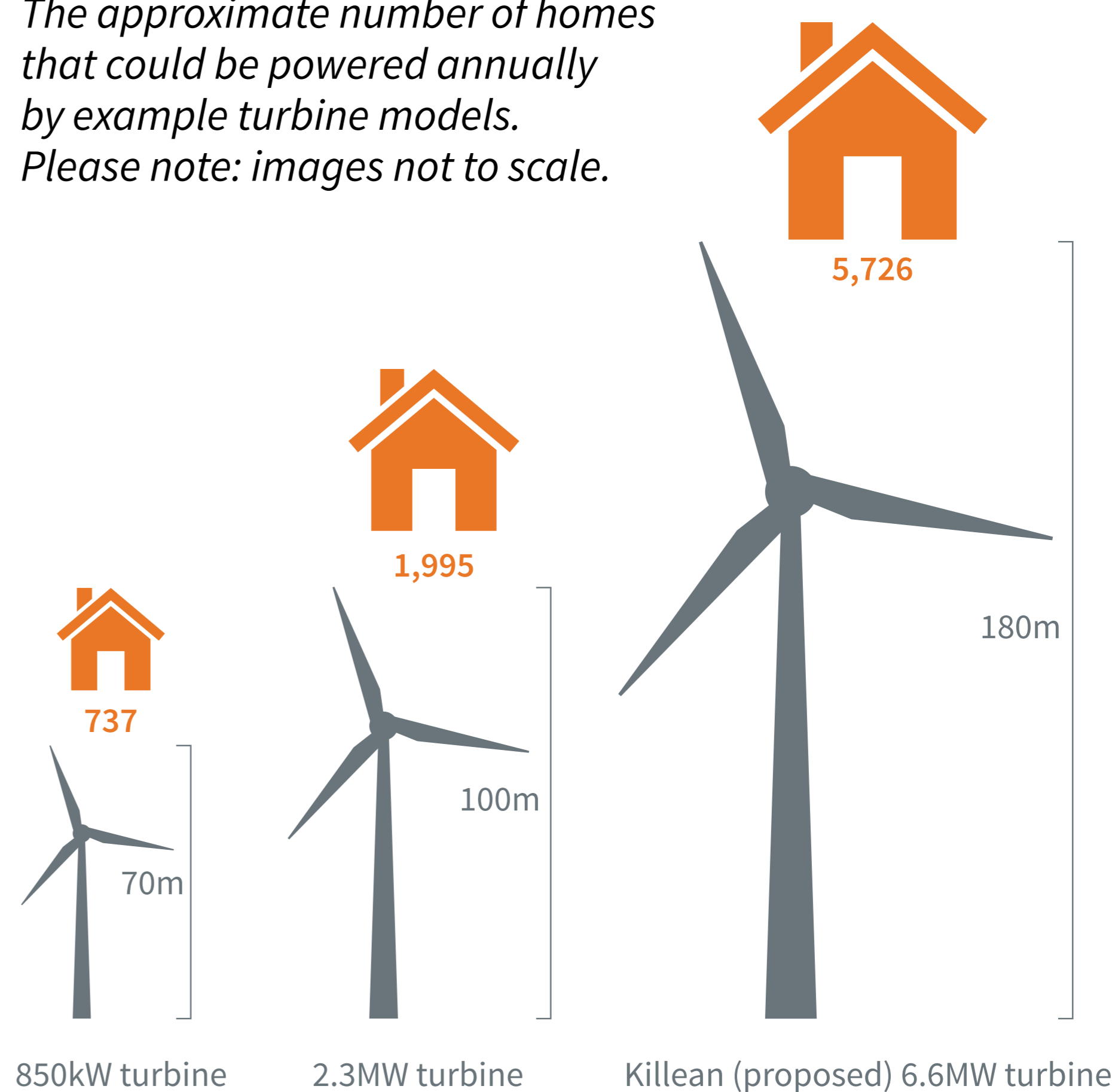
Improved performance and output

Turbine technology has advanced considerably in recent years, meaning that turbines are now more efficient, which enables them to generate a significantly greater amount of renewable electricity per turbine. Modern taller turbines provide more electricity, which helps address the climate emergency, cost of living crisis, and security of energy supply. The 180m turbines proposed at Killean would allow for far greater benefits in terms of renewable electricity generation per turbine than smaller turbines would.

Low-cost electricity

Onshore wind alongside other renewable energy technologies, can generate the cheapest form of new electricity generation. It can be deployed quickly and delivered at lower costs than some other renewable technologies (such as offshore wind, hydro and nuclear). If consented, Killean Wind Farm would be capable of generating enough clean, low-cost renewable

The approximate number of homes that could be powered annually by example turbine models. Please note: images not to scale.



electricity to power approximately 57,000 homes each year³ based on the current design presented at this exhibition. With the rising cost of living and climate change emergency, it is imperative that we deliver electricity efficiently and at lowest cost to the consumer.

Tackling climate change

Whilst temperature and weather patterns have naturally fluctuated throughout history, scientists now agree that there is 'unequivocal evidence that Earth is warming at an unprecedented rate' not seen in the past 10,000 years and that 'human activity is the principal cause'.⁴

Rapidly melting ice sheets, accelerated rises in sea levels and ocean warming, longer droughts, more frequent floods, wildfires and tropical storms are just some of the devastating effects of climate change seen across the globe that are impacting humans and other species.

With the ever-growing threat of climate change and the catastrophic impacts that it could have, it is critical that we transition to a zero-carbon future.

¹ Scottish Government (www.gov.scot/publications/national-planning-framework-4)

² Onshore Wind – policy statement refresh 2021, Scottish Government, October 2021

³ The indicative homes equivalent figures for the site (a conservative estimate of 57,000 homes) and for the three different turbine models shown have been calculated by taking the predicted annual electricity generation based on the site's installed capacity of 66MW (or each turbine's capacity) together with the Department for Energy Security and Net Zero (DESNZ) long-term average load factor for [onshore and offshore] wind of 32.08%, and then dividing this by the annual average electricity figures from DESNZ showing that the annual GB average domestic household consumption is 3,239 kWh (January 2024). The final wind farm capacity and the turbine models used for Killean will vary depending on the outcome of any planning permission and the turbine procurement process.

⁴ NASA (climate.nasa.gov/evidence)