Review of Electricity Markets Arrangements: **A Vision for Scotland** – Summary Document

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Introduction

With the UK aiming to reach net zero by 2050, a crucial part of the energy journey is to transition to an electricity system that comes from 100% renewable energy sources.

2020 marked the first year in the UK's history where electricity came predominantly from renewable energy, with 43% of the country's power coming from a mix of wind, solar, bioenergy and hydro-electric sources.

In May 2023, the UK produced its trillionth kilowatt hour (kWh) of electricity generated from renewable sources. Whilst it took 50 years to reach this milestone, based on current projections it will take just over five years to reach the next trillionth kWh.

However, meeting the UK government's commitment to deliver a fully decarbonised power sector by 2035 will require an even faster scale-up of low carbon technologies and the increasing volume of variable renewables, such as wind and solar power to meet that demand, will pose greater challenges for managing the electricity system. Scotland will have a key role in helping deliver the 2035 target.

Given these challenges the UK Government for Energy Security & Net Zero launched a review of the electricity market during 2022 – the Review of Electricity Market Arrangements (REMA) and issued a consultation document on the options in summer 2022. They have reviewed the responses to this and it is expected that UK Government will issue a further consultation in late 2023 or early 2024 with a narrower number of options to consider.

Given the importance of market arrangements that support the massive investment required in renewables in Scotland, as well as looking at options to protect consumers, infrastructure specialists the Scottish Futures Trust commissioned Dr Simon Gill of The Energy Landscape, to write a report entitled, **'Review of Electricity Markets Arrangements – A vision for Scotland'.**

Photo credit:
Offshore Wind farm © **Nicholas Doherty**

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A vision for the future Scottish electricity system

Renewable power is the foundation of our net zero transition. It delivers benefits to energy consumers and citizens, supports a strong economy and delivers positive outcomes across society. Electricity markets need to ensure a fast transition to a net zero electricity system powered largely by renewables and delivers affordable energy and stable prices. Market frameworks must support the electrification of heat and transport.

Flexibility will ensure the effective use of Scotland's renewable fleet and play a critical role in ensuring Scotland benefits from hosting renewables. Markets will support the development of pumped storage, batteries and other energy storage technologies as well as helping develop hydrogen electrolysis, add significant flexible consumption to the electricity system and forming a key component of Scotland's thriving hydrogen economy.

Consumers will benefit from affordable and stable prices, reflected in the low-cost of net-zero technologies, particularly renewable generation, whilst retaining a secure supply. Electricity markets will support a Just Transition by recognising and encouraging the creation of a broad range of social benefits including jobs, strong local economies, and a contribution to the wealth of communities.

Market reform is delivered in coordination with wider energy system reforms including the development of more strategic ways to plan and deliver electricity networks and critical reforms to retail markets. The result is a market framework and a wider system that helps ensure both Scotland and GB benefit from successfully decarbonising our electricity system.

Photo credit:
Onshore Wind farm © **Andrew Dawes**

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Three Principles

The vision is underpinned by the following thee principles

Coordination - between and within Scottish and UK government and institutions.

The right decisions on market reform will be critical to delivering Scotland's ambitions to decarbonise its energy system, deliver net zero by 2045 and ensure a strong and thriving renewable industry. Delivering these ambitions are also critical to meeting UK government's ambitions for a fully decarbonised electricity system and deliver the UK's sixth carbon budget.

Without well-designed electricity markets Scotland can not succeed; without Scotland delivering, the UK will not succeed.

Commitment - to deliver for people, businesses, communities and society across Scotland

Reform of electricity markets can deliver a wide range of outcomes that are valued by consumers including low costs, stable costs, and fairness. It also supports the wider interests of people, businesses and society as a whole through providing jobs, economic growth and community value.

Future market arrangements should ensure everyone can benefit and reflect the collective endeavour that goes into delivering energy infrastructure. It reflects the role of communities and local economies as well as developers and operators.

Confidence - for renewable and flexibility investors and consumers in Scotland

Confident investors are critical because of the scale and pace of investment needed in all technologies and because ensuring a fast transition is the best way to deliver for consumers and for society.

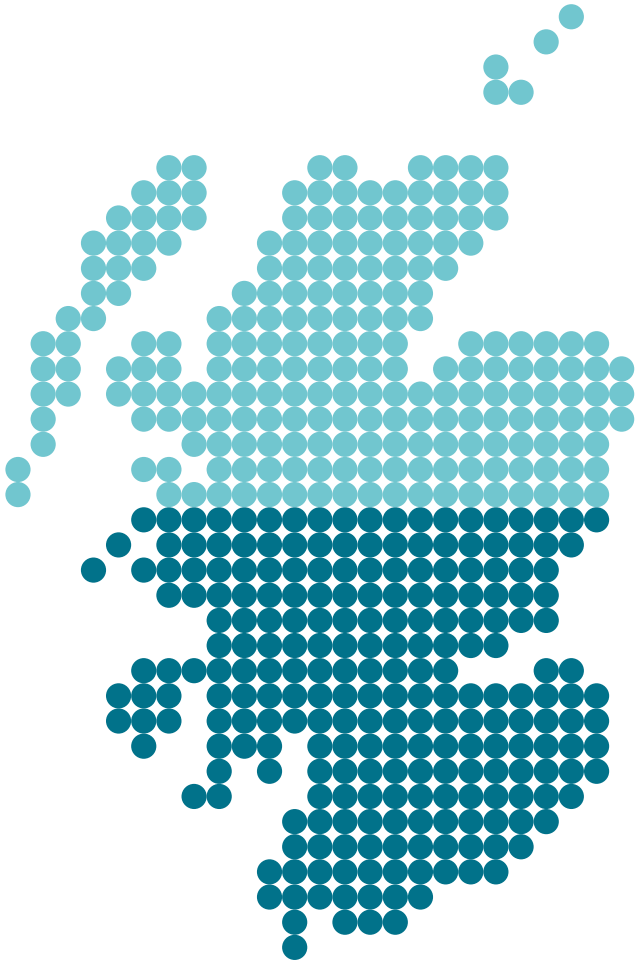
Confidence is particularly important for renewables because, although they have the lowest levelised cost of energy of any type of generation, their costs are much more weighted towards upfront investment. A lack of confidence could lead to an investment hiatus and / or increased cost of capital.

Providing confidence to consumers, including industrial and commercial end-users, means giving certainty that costs are both affordable and stable.

Proposals:

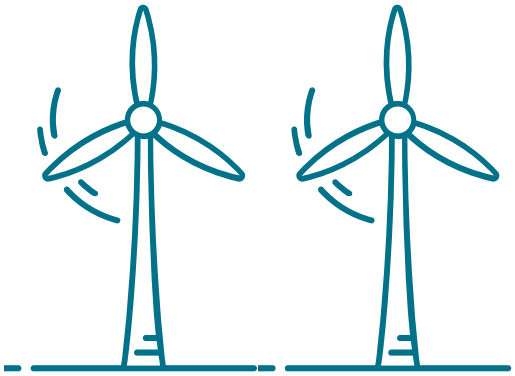
1. A shared vision and plan should be agreed for Great Britain's electricity system with a clear, strategic role for Scotland within it.
2. A substantial acceleration of investment in network infrastructure should be delivered to support this plan.
3. Retain a Great Britain-wide wholesale market with a single national price, that supports Scotland's ambition of becoming the engine room of the UK's renewable energy generation.
4. Clearer communication of how consumers benefit from the renewable transition, today and in the future, should be prioritised.
5. Investment signals should be improved to encourage new industry (e.g. data centres and green hydrogen producers,) to locate in Scotland.
6. Improve the way Great Britain's electricity system is operated, ensuring Scottish consumers benefit from the availability of low-cost renewable generation.

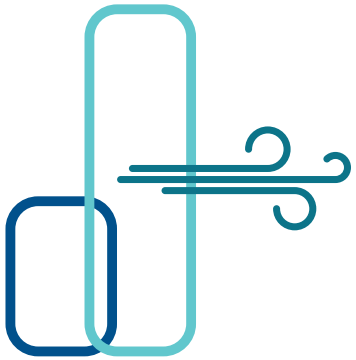
Facts about Scotland's renewable energy



Scotland already has **13.4 GW** of renewable electricity generation capacity. It is Scotland's ambition to deliver at least an additional **20 GW** low-cost renewable electricity capacity by 2030, which could generate the equivalent of about 50% of Scotland's current total energy demand.

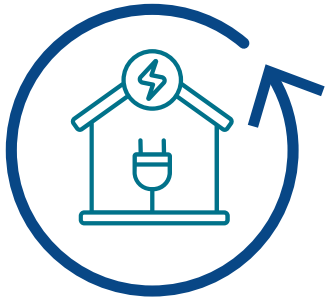
Scotland's offshore wind ambition is to increase it from **1.9 GW**, as of June 2022, to **8-11 GW** by 2030.





Scotland's onshore wind ambition is to increase it from **8.78 GW** as of June 2022, to over **20 GW** by 2030, more than doubling our existing capacity.

It is estimated the renewable energy industry supports over **£5.6 billion** of output and over **£2.5 billion** of GVA across the Scottish economy.



The number of low carbon jobs in Scotland's energy production sector is estimated to rise from **19,000** in 2019 to **77,000** by 2050.