



Paper of

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How and why did Scotland become a leader on climate change?

Introduction

Scotland has gained an enviable reputation as a leader on climate change issues, with global figures such as former UNFCCC Executive Secretary, Christina Figueres, visiting and praising Scotland's progress on climate change as "exemplary"¹.

This document explains why Scotland chose this path and how it is delivering against its targets.

What does Scotland's response to climate change look like? How do the Scots heat their homes, travel to work?

Visitors arriving in Scotland will not, for the most part, notice anything very different that sets it apart on climate issues. The most visible response to climate change is the electricity system, which has seen a rapid shift to one now predominantly powered by renewables (largely wind, hydro). Wind turbines have seen rapid growth in numbers and are more visible now in the landscape. For the eagle-eyed, there are also extensive new forestry plantations across the country as planting rates have risen in recent years with an aim to achieve 10,000+ hectares' new plantation each year.

Other responses have been much less visible: a steady improvement in the energy efficiency of homes and businesses, though most homes remain heated by natural gas; an improvement in waste recycling and reduction of waste to landfill. Perhaps, as importantly, Scotland's response to climate change and its progress against commitments is a normal part of Parliamentary debate and engagement, involving extensive consideration each year. In other areas of life, there are few noticeable differences; people travel to work and holiday in similar ways to other northern European countries; farm the land and take leisure in similar ways.

However, the changes in the electricity system to date have been the "easy" part of the climate change response. Much more profound changes are anticipated over the coming 15 years, in terms of radically improving the energy efficiency of buildings; phasing out the sale of new petrol and diesel cars; and ramping up the ownership of the energy system by local communities; whilst also retaining a secure, resilient energy system.

Why did Scotland become a leader? Why did the Scottish Government consider it important to take steps to tackle climate change?

Three reasons why the Scottish Government considered it important to take steps to tackle climate change included:

- It enabled Scotland to take an international position of leadership in one of the great challenges of the twenty first century
- There is local economic benefit as well as global environmental benefit from action
- Evidence showed that it could be delivered in practice in line with wider Scottish goals

In Scotland, the interest in developing economic benefit – inward investment, jobs - from renewable energy came long before the focus on emission reductions targets. Energy is an important economic sector for Scotland: since the devolution of powers from the Westminster

¹ <http://newsroom.unfccc.int/unfccc-newsroom/scotland-a-climate-action-leader-with-50-renewable-energy/>

government in late 1990s, all Scottish governments have seen the development of renewables as an economic opportunity.

But with success in attracting inward investment for renewable electricity – what were thought to be challenging renewables targets were repeatedly exceeded with ease - came the realization that Scotland could also take a lead in climate action more widely. Scotland was already required to do what was necessary to support the UK's own climate agenda, which was already one of the leading European countries in terms of ambition and practice. Importantly, this experience with renewables meant that taking on climate targets was seen to be economically beneficial in Scotland as well as environmentally sensible: it was not an “*environment or economy*” argument.

After the nationalist SNP government came to power in 2007, it was keen to showcase areas where Scotland potentially could take a lead internationally. Its success at developing renewable electricity, and its desire to put Scotland at the forefront in sustainable development, led to the development of its climate legislation. This followed the UK climate legislation – and drew much of its structure and intent from it – but was extended to set much higher climate targets.

At the time the Climate Change Bill was going through Parliament, there was a big debate about the Scottish 2020 targets: whether they should be the same as the UK targets (32% below 1990 levels) or higher (34-42%). Just before the final Parliamentary vote, the then CEO (Ian Marchant) of the biggest listed Scottish company, SSE plc, wrote a joint letter with the head of Stop Climate Chaos – a wide coalition of faith groups, non-governmental organisations, trade unions and civil groups - to members of the Scottish parliament saying: “Go for the biggest target!”. To have big business and environmental and union lobby groups signing a joint letter gave the politicians huge support to take the decision to vote for the larger 42% target.

The analysis in 2009 suggested that this target was hugely challenging with the regulatory powers in place, but that Scotland could get somewhere close to the target by 2020 if all went well. In other words, political vision and leadership in putting forward a challenging target, and corraling the resources and narrative around delivering that target, was as important for setting the framework for tackling climate change as robust evidence that it was achievable.

How is Scotland adapting to a changing climate?

Individuals, organisations and businesses in Scotland are responding increasingly well to current and future climate risks. They are assessing risks and building the business case for action, developing effective adaptation plans and actions, and forming city and regional partnerships. Adaptation is beginning to be embedded as part of investment in buildings and infrastructure.

Scotland was one of the pioneering countries in developing an adaptation monitoring and evaluation framework through the first Scottish Climate Change Adaptation Programme, with annual reporting to parliament and a five year programme cycle. Progress is assessed by an independent body – the UK Adaptation Sub Committee - every two years. This makes Scotland one of only a handful of countries that has a fully operationalised system for adaptation planning, action and evaluation. This policy framework offers opportunities to deliver climate change adaptation and social resilience in ways that support wider Scottish Government objectives.

Scotland has a community of adaptation experts across the public sector. A range of organisations, including SEPA, Scottish Natural Heritage, Historic Environment Scotland, the Climate Ready Clyde Initiative and Edinburgh Adapts are taking action that is world-leading in scope and methodology. At its heart is a partnership approach to adapting to climate change: adaptation cannot be achieved by organisations working alone.

Scotland's research strengths are also significant. The National Coastal Change Assessment, flooding and natural environment research and Scotland's Centre of Expertise on Climate Change (ClimateXChange) series of 100 Adaptation Indicators are key examples. Building on this work, Scotland is near to having an operational framework for developing government policy to adapt to climate change.

The approach being developed now is less to do with focusing on individual climate risks – for example, how likely is it to flood? – and more on the opportunities for Scotland from 'climate proofing'. These opportunities arise when looking across wider objectives (health and wellbeing, social justice, economic growth etc.) and identifying where climate change adaptation can contribute to their achievement or where vulnerability to climate change impacts might jeopardise their achievement.

What has Scotland done to reduce GHGs and to tackle climate change? What structural changes/ legislative steps/ policy decisions did Scotland make to take a leadership position?

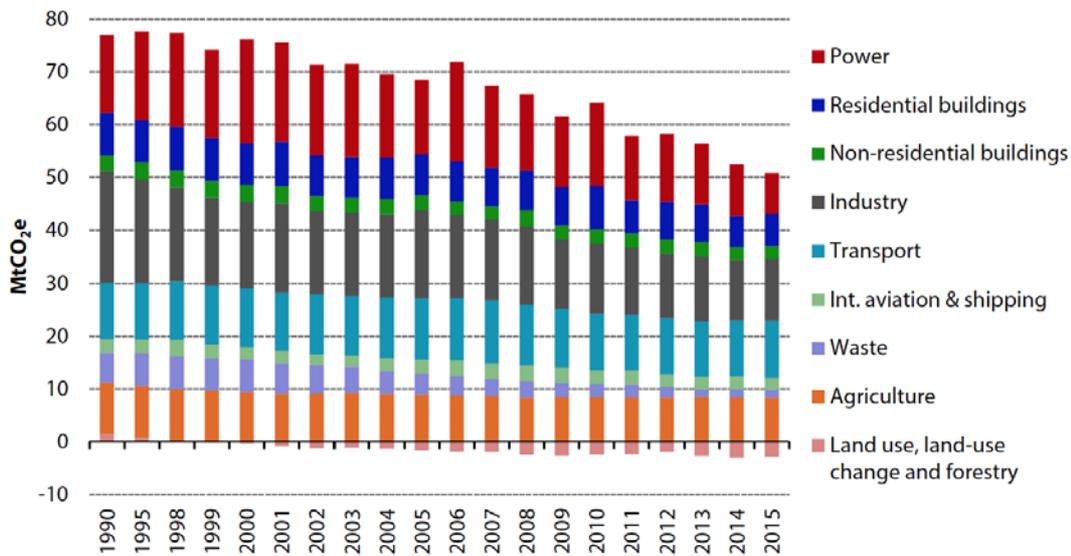
In 2008-09, the Scottish Government developed its first Climate Change Delivery Plan, which for the first time brought together the evidence and analysis about the possible options for Scotland to deliver substantial emission reductions. This was the document that underpinned the discussions as Scotland's legislation on climate change – the Climate Change Bill - was taken through the Scottish Parliament in 2009.

Scotland's Climate Change Act - agreed unanimously in 2009 by Parliament - laid out targets of 42% emission reduction by 2020 from 1990 levels and 80% by 2050, which were world leading at the time. It also set annual targets with a requirement that Ministers had to report on these to Parliament each year; and it uses an independent body (the UK Committee on Climate Change) to audit its efforts. This has forced the issue of delivering climate targets to remain on the Parliamentary agenda each year, making Ministers deeply uncomfortable if their climate pledges are not being delivered.

It is difficult to understate the radical transformation in energy systems and land use that is required to deliver these long-term targets. People in Scotland will not be driving diesel or gasoline vehicles in 2040 if Scotland is to meet these greenhouse gas emissions target; they cannot be using natural gas to heat their homes and still hit this emissions target.

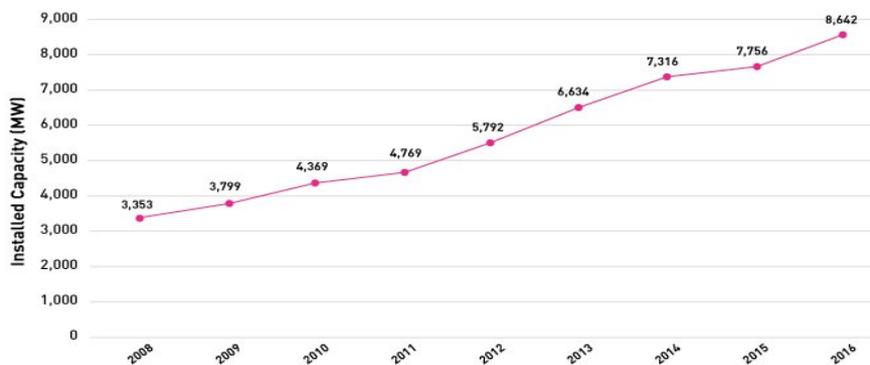
At the same time as setting climate targets, Scotland was also ramping up its pledges on renewable electricity, aiming to deliver 100% of its electricity consumption from renewable sources by 2020. It reshaped planning policy to encourage inward investment in renewable energy developments.

In terms of progress, Scotland has hit its 2020 emission target five years early and has gone from delivering 10% to 60% of its electricity consumption from renewables over the past 15 years. It is on track to get near its 100% target in the early 2020s.

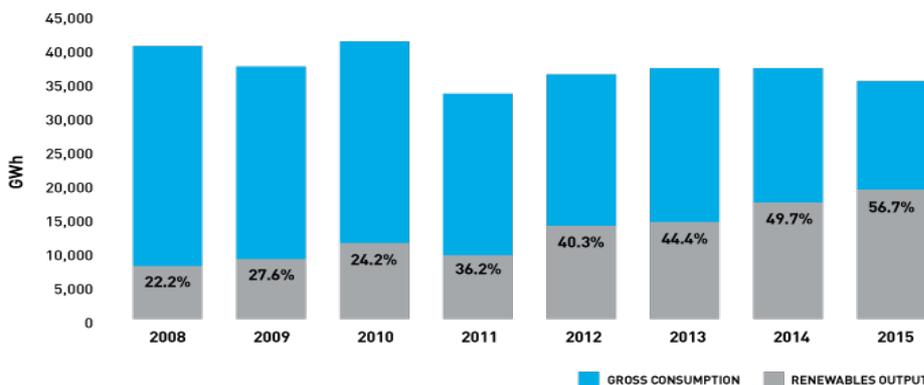


Source: UK Committee on Climate Change: Scotland's Progress Report 2017

TOTAL INSTALLED CAPACITY OF RENEWABLES ELECTRICITY IN SCOTLAND 2008-2016



GROSS ELECTRICITY CONSUMPTION AND % RENEWABLES OUTPUT



Source: Scottish Renewables, from UK Gov (BEIS), 2017

Whilst this has shown impressive progress, the Government has recognized that it will become increasingly hard to deliver radical emission reductions without more structural changes in the way in which Scotland heats its homes and its means of transporting people and goods. It has developed an energy strategy – on which it is currently consulting – which lays out the more radical plans for improving the quality of buildings across Scotland (to reduce heat demand) and for phasing out new petrol and diesel cars and vans by 2032.

How have Scottish people reacted to the steps taken to tackle climate change? How well understood is climate change and what drives it amongst the general population?

In Scotland, there has long been cross-sector groups – from business, environmental NGOs and civil society - seeking to support, encourage and badger the government into continued action on climate change.

Unlike many other countries, there has not been a major corporate backlash against the plans: several of the biggest companies (for example, Scottish Power – a subsidiary of Iberdrola; SSE plc) have been at the forefront of developing renewables sources of power; others, like the Scottish Whisky Association, have worked with their members on developing long-term sustainability plans to support the clean, green brand that Scotland’s climate plans have helped create.

Amongst the general population, support for renewables and for tackling climate change has remained strong over many years. Surveys of popular attitudes finds support from typically more than 75% of the population. These surveys have picked up both support for environmental action at the global level – like climate change – and for action on very local issues – like enforcing penalties on those who allow dogs to foul urban pavements/parks. However, there remains a distinct gap between attitudes and behaviours – many people say they would like to do more to help meet climate targets, but don’t do so in practice.

There are small but vocal groups that object to the development of renewable electricity – particularly wind turbines. However, as the numbers of planned renewable developments grew, the government increasingly explored ways of delivering local benefits to communities affected. This began in the form of suggested payments by developers to local communities (for example, of £5,000/MW installed capacity), but has increasingly become a more sophisticated aim to enable communities to own (for example through an equity share) parts of the local energy system. The government set a target for 500MW of locally owned energy generation facilities across Scotland by 2020, but has already exceeded this. It is resetting this target at 1,000MW (1GW) of installed capacity. There is clear evidence in Scotland that supporting local communities to get involved in – and benefit from – the local energy system enables a range of related social and economic co-benefits. More funding is recycled locally, helping local business; social benefits include giving communities control over income streams where they decide how best to invest this money. Where communities have been involved, wind farm developments are less likely to be objected to, and less likely to fail through the planning process. Citizen juries and other engagement tools have been used to support these processes.

Why is change to meet the challenges of climate change acceptable in Scotland? Was there resistance to any of the steps taken (e.g. wind farms)?

Three issues are important:

Firstly, people in Scotland have not had to change their social practices much, if at all, for Scotland to meet the climate targets to date. In other words, they have not been too inconvenienced by the drive to meet climate targets. Much of the change to date has involved changes to the structure of the electricity system, or to changes in building materials (for example, most new homes are now timber framed and increasingly are better insulated), which are not always immediately visible.

Scotland has also been a country where resource extraction and primary industries has been a norm for many generations; redirecting resource extraction from one form of energy (or land) to renewable energy (and more forestry) is not a large step.

Finally, much of the discussion is framed around economic benefits that come from the changes, such as creating new industries to support economic activity (for example, offshore marine energy, education services; data/digital innovation). As technology costs for renewable energy have come down (to be directly cost-competitive with fossil fuel alternatives), and global markets increasingly encourage low carbon solutions, social benefits are also becoming important. Low cost renewable energy can help reduce fuel poverty, while the emergence of electric or hydrogen fuel cell vehicles will help solve air pollution problems – all at a financial cost that is acceptable to the country; increasingly, solving the climate change problem also solves other social challenges.

How have communities been involved in the transition? Are there/ or were there immediate positive outcomes/ impacts for Scottish people when decisions were taken?

The explicit aim of involving local communities in many of the changes to the energy system is long standing. This approach has brought many local social and economic benefits, for example, through increasing local ownership and engagement in both urban and rural communities. The Government has supported community engagement through long term funding of communities through, for example, the Climate Challenge Fund – seeking to get communities together to solve local problems – and the CARES scheme, which has provided grants and loans to support communities to build their own energy generation. More recent funding includes the Local Energy Challenge Fund, which challenges local groups to develop innovative local energy systems.

Supporting local energy systems is one of the three pillars of the draft Energy Strategy along with a whole energy system view: the introduction of electric vehicles will blur the boundary between electricity system and transport systems. System flexibility, local engagement and a principle-based approach to regulation is critical in making space for energy system innovation. This involves city-scale and local energy service companies managed by or through local authorities or communities.

The activities around energy reflect a wider desire to rebuild an entrepreneurial mind-set in communities and organisations across Scotland, in ways which deliver social and economic, as well as environmental, goals.

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