27 June 2018

Dear Environment, Climate Change and Land Reform Committee Members,

Climate Change (Emissions Reduction Targets) (Scotland) Bill – 19 June 2018

Thank you for your letter of 26 June requesting further information following the officials’ evidence session. The majority of that information is given in Appendix 1. Appendix 2 is a note on costs associated with the Bill, providing the information that you requested within the context of broader information about global costs of climate action and inaction, and which it is important the figures are understood within. The information relating to costs is provided in this form as we considered it would be the most comprehensive and useful way to answer your questions.

In addition I am attaching a Keeling Schedule of the Bill showing the provisions of the Climate Change (Emissions Reduction Targets) (Scotland) Bill within the Climate Change (Scotland) Act 2009, which I hope will prove useful to you.

Yours sincerely

Sara Grainger
Decarbonisation: Delivery Unit Team Leader
RESPONSES TO REQUESTS FOR FURTHER INFORMATION

Details of all the scientific sources of information which the Scottish Government took into account in considering setting target levels and the extent to which each influenced thinking.

The Scottish Government’s approach to tackling climate change is guided by the best available scientific evidence, in the form of the synthesis reports of the Intergovernmental Panel on Climate Change. These reports review the science of climate change and implications for mitigation at a global level. Advice on how this evidence should be translated into Scottish target levels was sought from the UK Committee on Climate Change (CCC). The CCC was designated by the Scottish Parliament’s 2009 Act as an independent, statutory advisory body to Scottish Government on matters related to climate change. The Committee comprises recognised international experts in a range of fields, including climate science. Given this expertise and its statutory role under current legislation, the CCC is uniquely well placed to provide advice on setting evidence-based target levels.

Copies of the reports you referred to containing analysis of international approaches to setting targets and meeting the ambitions of the Paris Agreement.

The reports referred to were produced by ClimateXChange and can be found on their website at the links below:

- A review of greenhouse gas reduction aspirations and their legislation across selected countries and regions. (July 2017)
  [https://www.climatexchange.org.uk/media/2117/countriesregions_climatechangeaspirations_casesstudies.pdf](https://www.climatexchange.org.uk/media/2117/countriesregions_climatechangeaspirations_casesstudies.pdf)

- A report summarising greenhouse gas emissions target frameworks for countries known to have statutory and / or highly ambitious climate change targets. (November 2017)
  [https://www.climatexchange.org.uk/media/1325/international_climate_change_target_frameworks.pdf](https://www.climatexchange.org.uk/media/1325/international_climate_change_target_frameworks.pdf)

- Quality assurance of comparison of international climate change target frameworks. (May 2018)

Further information on why other aspects of the 2009 Act were not reviewed for consideration in the 2018 Bill, specifically including Public Sector Reporting Duties, Land Use Strategy and Local authority energy efficiency discount schemes.

The Scottish Government’s intention has always been for a strategic Bill that increases ambition and transparency of target reporting. These aims can be achieved through amendment of Parts 1 and 3 of the 2009 Act. Other aspects of the 2009 Act were not reviewed for consideration as they are not directly related to ambition and transparency of target reporting.

The Scottish Government will be reviewing the Public Sector Reporting Duties over the coming year, in collaboration with representatives from the Public Sector and other stakeholders. If the review concludes that changes to the Duties are required, a proposal will be developed, consulted on, and secondary legislation brought forward as appropriate. Primary legislation is not needed to amend the Duties.
Scottish Government does not consider that any changes are currently needed to the provisions in section 57 of the 2009 Act (Duty to produce a land use strategy). The Committee, following consideration of the draft Plan, suggested that the connections between the Strategy and the Climate Change Plan could be made more explicit. This recommendation was acted on with the final Plan including explicit references to other strategies, including the Land Use Strategy.

The Energy Efficient Scotland Route Map provides the overall strategy for energy efficiency schemes, and is currently being consulted on. The consultation paper is available at https://consult.gov.scot/better-homes-division/energy-efficient-scotland/

Which organisations were being referred to in relation to why the Bill was not setting more pressing targets sooner and the technological advances that would be required to do so

The Scottish Government engages regularly with a wide range of organisations in the development and delivery of policy, and works in a co-ordinated way across Directorates to ensure that policy development in one area is consistent with that in other areas. Development of the policy for the current Bill was a good example of this and the Bill Team liaised with officials across multiple directorates, who in turn fed in information from stakeholder organisations that they engage with regularly, and stakeholder groups. Specific examples in relation to the technological advances that more ambitious targets will require include Scottish Carbon Capture and Storage, Scottish Hydrogen Fuel Cell Alliance, the Scottish Energy Advisory Board and the Oil and Gas Industry Leaders Group. We also drew on work that had been previously commissioned in development of the Climate Change Plan and Energy Strategy, which evaluated the impact of climate change mitigation targets on Scottish businesses. This work was conducted by EY and discussed at the National Economic Forum in May 2017, and subsequently fed into the Business and Regulatory Impact Assessment for the Bill proposals. The report produced by EY can be seen at http://www.gov.scot/Topics/Environment/climatechange/meetingemissionstargets/climate-change-plan/transitioning-to-a-low-carbon-economy

The Business and Regulatory Impact Assessment for the Bill is available at http://www.gov.scot/Publications/2018/05/2691

The public consultation relating to Scotland’s Energy Strategy provided a wide range of views from over 250 companies, organisations and individuals which has informed the development of the Scottish Government’s long term policy and target framework. The consultation posed a number of questions which are directly related to technological advances and the feasibility of ambitious targets for decarbonisation of energy supply (especially Questions 3, 4 and 7). A report summarising the findings of an independent analysis of the consultation responses is available here: http://www.gov.scot/Resource/0052/00527583.pdf

The Parliament’s Committees’ reports on the draft Climate Change Plan were also an important source of evidence, bringing together stakeholders’ evidence on the challenges of deliverability in areas such as heat decarbonisation in advance of the UK Government’s decision on the future of the gas network, and highlighting concerns about reliance on new technologies.
Detailed information on the development of the target setting criteria in the passage of the 2009 Act and the creation of the 2018 Bill, including how the specific sectors (such as energy) were included and why others were excluded.

The Scottish Government consulted on what factors should be taken into account when setting the level of budgets (annual targets) prior to bringing forward the Climate Change (Scotland) Bill in 2008. The consultation in 2008 highlighted a number of factors that would need to be considered, including but not limited to:

- likely economic growth;
- likely population growth;
- likely technological progress;
- social impacts, including impact on rural areas;
- environmental impacts;
- impacts on the economy and business competitiveness;
- international circumstances; and
- scientific knowledge about climate change.

In light of the consultation responses received in 2008, the following set of criteria were developed and introduced in the Bill:

(a) scientific knowledge about climate change;
(b) technology relevant to climate change;
(c) economic circumstances, in particular the likely impact of the target on—
   (i) the Scottish economy;
   (ii) the competitiveness of particular sectors of the Scottish economy;
   (iii) small and medium-sized enterprises;
(d) fiscal circumstances, in particular the likely impact of the target on taxation, public spending and public borrowing;
(e) social circumstances, in particular the likely impact of the target on those living in poverty;
(f) the likely impact of the target on those living in remote and rural communities;
(g) energy policy, in particular the likely impact of the target on energy supplies, the renewable energy sector and the carbon and energy intensity of the Scottish economy;
(h) European and international law and policy relating to climate change.

Opposition amendments were made at Stages 2 and 3 and, as a result, the criteria in the 2009 Act are:

(a) the objective of not exceeding the fair and safe Scottish emissions budget;
(b) scientific knowledge about climate change;
(c) technology relevant to climate change;
(d) economic circumstances, in particular the likely impact of the target on—
   (i) the Scottish economy;
   (ii) the competitiveness of particular sectors of the Scottish economy;
(iii) small and medium-sized enterprises;
(iv) jobs and employment opportunities;
(e) fiscal circumstances, in particular the likely impact of the target on taxation, public spending and public borrowing;
(f) social circumstances, in particular the likely impact of the target on those living in poorer or deprived communities;
(g) the likely impact of the target on those living in remote rural communities and island communities;
(h) energy policy, in particular the likely impact of the target on energy supplies, the renewable energy sector and the carbon and energy intensity of the Scottish economy;
(i) environmental considerations and, in particular, the likely impact of the targets on biodiversity;
(j) European and international law and policy relating to climate change.

The consultation on the current Bill sought views on the most important criteria to be considered by the CCC when providing advice and by Ministers when setting or updating emission reduction targets.

A wide range of views were put forward, including suggestions that further, more specific criteria should be added, and suggestions that the number of criteria should be reduced, or prioritised. The Scottish Government took the view that there was not a clear case for fundamentally amending the criteria in the 2009 Act.

This issue was discussed with stakeholders as part of the Technical Discussion Group meetings (a group of stakeholders established to discuss technical elements of the Bill proposals in detail). Members of that group considered that the criterion “European and international law and policy relating to climate change” should be altered to make it clearer that it includes the United Nations Framework Convention on Climate Change and protocols to that Convention, and that a criterion of “current international carbon reporting practice” should be added to ensure the advice from the Committee on Climate Change advice explicitly refers to the current inventory.

The Bill makes these changes, but otherwise leaves the target-setting criteria as set out in the 2009 Act.

The Bill also retains the existing requirements under the 2009 Act that a request from the Scottish Ministers for advice from the Committee on Climate Change must request their views on the respective contributions towards meeting each relevant target that should be made by sectors of the Scottish economy (section 2C(3)(d) of the 2009 Act, as inserted by section 6 of the Bill). The advice request must also seek views on the respective contributions that should be made by energy efficiency, energy generation, land use and transport (section 2C(3)(e) of the 2009 Act, as inserted by section 6 of the Bill).

It is our view that these headings allow the Committee on Climate Change to provide advice across all sectors with flexibility for the advice to adapt as the respective importance of sectors changes over time.

The Bill also retains the power in the 2009 Act for the Scottish Ministers to modify the target-setting criteria through affirmative procedure regulations in the event that they need to be updated in the future.
RESPONSES TO REQUESTS FOR FURTHER INFORMATION ON COSTS

Global Literature: Stern Review Summary

The Stern Review (2006)\(^1\), which is considered an authoritative study on the economic impact of global climate change, estimated the potential cost of climate change damages from continuing on a business-as-usual path, to be equivalent to at least 5% of global Gross Domestic Product (GDP), now and forever. Stern noted that this estimate would be much higher, potentially around 20% of global GDP now and forever, if a range of further impacts were taken into account, such as impacts on human health and the disproportionate burden of climate change on poor regions of the world.

Stern estimated the global cost of climate change mitigation (stabilisation at around 550ppm CO\(_{2}\)e) to be around 1% of global GDP by 2050, with a range from -1% to +3.5% of GDP. Costs could be lower than the 1% if there are major gains in efficiency or strong co-benefits e.g. from reduced air pollution. Stern noted that costs could be higher than the 1% if innovation in low-carbon technologies is slower than expected.

Global Literature: ClimateXChange Rapid Evidence Review

ClimateXChange (CXC), on behalf of the Scottish Government, commissioned a Rapid Evidence Assessment (REA) and synthesis of key global assessments of the costs and benefits of climate change action to give context to work on the new Climate Change Bill. The study focuses on literature that has emerged since the Stern Review of the Economics of Climate Change, and are largely focused on global estimates.


A key message arising from this review is that estimates of climate impacts are inherently uncertain, so climate policy needs to be assessed in terms of risk management, rather than straight-forward cost-benefit analysis.

The balance of evidence suggests that although the mid-point estimates of abatement cost\(^3\) may be higher than the mid-point damage estimates, it is reasonable to conclude that there is a considerable risk of much higher-than-expected damages, which would justify the cost of ambitious abatement action. This is in line with the conclusion arising from climate risk literature, suggesting that reducing the risk of exceeding tipping points\(^4\) is a key reason to aim for strong abatement targets globally. Tipping points become much more likely at higher levels of warming but cannot be ruled out at low-to-moderate warming levels.

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\(^1\) [http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf](http://mudancasclimaticas.cptec.inpe.br/~rmclima/pdfs/destaques/sternreview_report_complete.pdf)

\(^2\) 550 parts per millions carbon dioxide equivalent (ppm CO\(_{2}\)e) is equivalent to global temperature rise of 2°C.

\(^3\) Abatement costs relate to the cost incurred by reducing Greenhouse Gas Emissions

\(^4\) TEEB (2009) ([http://www.teebweb.org/media/2009/09/TEEB-Climate-Issues-Update.pdf](http://www.teebweb.org/media/2009/09/TEEB-Climate-Issues-Update.pdf)) notes that a tipping point is a threshold of irreversibility, beyond which the ecosystem ceases to function. They note that we have reached this point with coral reefs, whereby gradual reduction in future greenhouse gas emissions will not stop their imminent loss. At the tipping point, decisions should no longer be based around marginal costs and benefits, but should capture the ethical and other consequences of losing the ecosystem.
CXC drew heavily from the Intergovernmental Panel on Climate Change (IPCC) fifth assessment report (AR5), which contains the results of 19 separate studies.

To draw out damage costs as a percentage of GDP, the IPCC results were restricted to 14 studies that assumed a similar degree of warming, in the range 2.5-3°C. Many of these do not specify a timeframe; CXC assumed these warming levels and the resulting damages relate to end-of-century timeframes. These studies show reasonably close agreement on GDP impacts, with a mean of 2.2%, median 1.5% and 10th to 90th percentile range of 0.0% to 9.5%. Excluding a single study with outlying results from the sample further narrows the range across 13 studies to a mean of 1.5%, median 1.5% and 10th to 90th percentile range of 0.0% to 3.5%.

The IPCC study, however, assumes that GDP will continue to grow unabated over the course of the century. This assumption means that climate damages, while large in absolute terms, appear modest in comparison with GDP. Emerging literature is beginning to challenge this by assessing whether climate change can reduce GDP growth rates, rather than just incurring instantaneous damages. Because growth rates accumulate exponentially over time, this leads to the strikingly higher damage costs found by Burke, Hsiang and Miguel (2015), who assessed damages associated with median temperature rise of 4.5°C by 2100 and found a median cost of about 9% of GDP in 2050.

Damage costs are contrasted with the global cost of abatement: For studies included in IPCC (2014), consistent with about a 50% chance of limiting warming to below 2°C, median global abatement costs were 3.4% of Gross Domestic Product (GDP) by 2050, with an upper (90th percentile) estimate of 6.2% of GDP by 2050. Rogelj et al. (2015) found abatement costs in a similar range to achieve the more ambitious target of limiting warming to 1.5°C.

As noted above, however, while the median global abatement cost from the IPCC study does exceed the median damage cost of climate change, the risk of much higher-than-expected damages justifies the cost of climate action. The Rapid Evidence Review notes that these higher-than-expected damages or thresholds beyond which abrupt changes can be triggered, are much more likely at higher levels of warming.

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8 http://adsabs.harvard.edu/abs/2015NatCC...5..519R  
9 Kriegler et al. (2009) (http://www.pnas.org/content/106/13/5041) studied the possibility of tipping points including:  
   - Ice sheets on Greenland and West Antarctica  
   - Atlantic Meridional Overturning Circulation (The Atlantic Meridional Overturning Circulation is a system of ocean currents driven by differences in temperature and salt content. As warm water flows north, it cools and some evaporation occurs, increasing salt content. Lower temperature and higher salt content makes the denser water sink and spread south. This will eventually get pulled back to the surface and warm. This process makes heat and energy are distributed around the earth. The process is expected to slow as the surface of the ocean becomes warmer and increased rainfall and ice melt also mean it becomes fresher. These changes will make the ocean lighter and reduce the sinking effect (https://www.metoffice.gov.uk/learning/ocean/amoc))  
   - Dieback of Amazon rainforest  
   - El Niño/Southern oscillation (The warming of the sea surface temperature in the central-east equatorial Pacific. La Niña is the opposite, where there are cooler-than-normal sea surface temperatures. These alternate in a cycle called the El Niño Southern Oscillation. This has weather impacts across the world (https://www.metoffice.gov.uk/learning/ocean/el-nino). Increasing levels of CO2 could contribute to increasing frequency of extreme El Niño events (http://www.nature.com/articles/nclimate3351))
The Scottish TIMES Model

The Scottish TIMES model is a high-level strategic model, covering the Scottish energy system (which includes Residential and Non-Domestic Buildings, Industrial Processes, Electricity Generation and Transport), as well as non-energy sectors, including Agriculture, Land Use, Land Use Change and Forestry, and Waste.

At its simplest, it is a diagnostic tool to help understand the key inter-relationships across the energy system. TIMES identifies the least-cost pathway (energy mix) of meeting a set of final energy demands, factoring in the impact of technical, practical and policy constraints, including the Scottish Government’s climate change targets.

TIMES is accepted as an international standard for long term energy system analysis, and has been widely used in the context of climate change. There are a number of advantages of the TIMES modelling framework. Analysis within TIMES can be highly detailed, as it belongs to a family of “bottom-up” technology rich energy models which contain thousands of technologies to derive system insights.

TIMES provides a system-wide view, considering decarbonisation options across the whole energy system to devise an optimal pathway. It therefore provides a structured way to consider the system wide impacts of energy system change, capturing the complex interactions that take place within that system. The TIMES methodology is well documented and publicly available online, with a large community of users spanning academia, government, and international organisations. As a result, the model is continually refined and improved upon.

However, TIMES cannot be used to prescribe the specific policies or proposals that feature in Climate Change Plans, nor the costs associated with them. Policies and Proposals are instead developed drawing on the insights from TIMES, but with a focus on sector specific modelling and analysis.

TIMES and Uncertainty

As with any model with a long term horizon up to 2050, considerable uncertainty surrounds any TIMES run, in particular as we move further away from the present.

Each TIMES run relies on current information about the expected future cost evolution of current and developing technology. The longer the modelling time horizon, the less likely that current estimates of future technologies will be realised in the real world. The pace of technological advances in engineering and information technology will have a huge bearing on the energy system and cannot be accurately predicted. This is evidenced by the recent changes in the cost of renewable technologies, such as solar, that have fallen to a degree that energy system models would not have anticipated 20 years ago. Likewise, the costs of anticipated future technologies which are currently not deployed at scale could turn out to be higher than currently anticipated. For example, the cost of building new nuclear power stations in Europe has been characterised by budget overruns in recent years. Significant uncertainty surrounds the estimation of cost trends over time, with cost reviews finding evidence of cost reductions as
deployment rises, but with a number of variables (such as fuel prices or supply chain issues) able to delay and even reverse this process\textsuperscript{10}.

Recognising this uncertainty in long-term energy analysis, and responding to feedback on this subject from stakeholders, the Scottish Government produced two different energy system scenarios out to 2050 for the Scottish Energy Strategy, published in December 2017. One of these had a system with a high degree of electrification, whereas the alternative relied on low carbon hydrogen replacing fossil fuels. The below figure presents the energy flows within the system in 2050 in each of these.

These scenarios did not intend to provide any specific prediction regarding the future, but were instead designed to generate discussion about how the future could look, the high degree of uncertainty and variability of the future path of the energy system, and the range of infrastructure and behaviours that might be required under different scenarios.

These scenarios serve to highlight how different the energy system may look in 2050, with the likelihood that it will share some characteristics of both. This uncertainty about future costs, demand and technological progress means that the TIMES framework can only be used to provide a broad indication of cost, and is most helpful for framing what the magnitude of cost could be.

\textbf{Costs in TIMES}

TIMES models use linear programming (LP) to identify the least-cost pathway for meeting our climate change demands over a specific time horizon. There are over two thousand technologies and processes in the Scottish TIMES model, both existing and future. Each of these has a series of costs associated with it, including fixed operating and maintenance costs, investment and activity costs. There are also flow costs.

\textsuperscript{10} \url{http://www.ukerc.ac.uk/publications/presenting-the-future-electricity-generation-cost-estimation-methodologies.html}
in the model, associated with the import, export and extraction of energy sources. The model deploys a series of technologies and fuels, so that the cost of meeting the Scottish energy demands, across all years and sectors, is the lowest possible, subject to a number of constraints imposed. For example, the model constraints electricity generation from renewable sources to the latest available statistics on installed capacity.

The Scottish TIMES model was built by an international consortium of experts from E4SMA, KANORS, SYSTRA and University College London (UCL). The initial structure of the model and technical parameters (including costs) were inherited from the UK TIMES model operated by the Department of Business, Energy and Industrial Strategy (BEIS).

The model was then modified to incorporate Scottish data and characteristics, to better reflect the structure of the Scottish energy system. The model has also been periodically updated as new data and analysis becomes available. For example, in the residential sector, cost data was originally based on UK TIMES but, subsequently, the investment costs of conservation measures were updated to be consistent with Scottish National Housing Model outputs, based on data from the Scottish House Condition Survey. Details of this process has been submitted as evidence to the Committee 11 and in a technical annex to the final Plan 12.

TIMES specifies the most cost effective energy mix, and the associated cost, for achieving a given climate change target. It does not consider the policy options for achieving this energy mix or where the costs of doing so should ultimately fall (e.g. government, local authority, businesses or consumers).

Who the costs fall to will be determined by the future design of policies and proposals that will deliver emissions reductions to achieve these stretching targets. There are many ways in which costs can be distributed. For example, currently the cost of supporting renewable technologies in the electricity system is not entirely borne by the consumers in the geographical area in which a generating station is located, but are instead paid for by domestic and non-domestic electricity consumers across the integrated GB wholesale market. Alternatively, the Renewable Heat Incentive, a scheme for promoting the uptake of alternative heating technologies such as Biomass Boilers and Heat Pumps, is paid for through general taxation.

The future distribution of costs will depend on a number of factors outside Scotland’s influence. As international efforts to decarbonise intensify, global bioenergy demand could increase resulting in higher costs and lower availability of Scottish imports of bioenergy inputs. Furthermore, international and European action will also substantially influence the development of technology costs and how are they borne, via global investments and the potential development of global carbon markets.

As discussed, TIMES aims to minimise the total cost of the energy system. This system cost figure in TIMES can be disaggregated into a number of cost categories:

- Variable costs – These consist of activity and flow costs. Activity costs are variable operating and maintenance (O&M) costs associated with some technologies that are dependent on their activity. Flow costs are variable costs of a technology associated with its production or consumption of energy. They include import and resource production costs, costs associated with distribution networks, as well as export revenues

11 http://www.parliament.scot/S5_ENVIRONMENT/Inquiries/20170208_TIMES_Model_Constraints_(1).pdf
• Fixed O&M costs – These are fixed operating and maintenance costs per unit of capacity of a specific technology installed, according to the installation year

• Investment costs: These are capital costs that arise if the model chooses to deploy new capacity of a technology (such as a new boiler), and if the model chooses to dismantle a technology. They are spread over the economic lifetime of said technology

Increasing Climate Ambition in TIMES

To provide an indicative assessment of the relative cost of increasing the targets, we assessed the total cost of two TIMES runs; one with a 90% target in 2050 and the other with an 80% target. The result showed that achieving a 90% target would result in an estimated cumulative additional cost of around £13 billion (2017 prices, discounted using the social discount rate) between 2030 and 2050. Presenting cost information in this manner is best practice when considering costs and benefits which incur in the future, and is the approach adopted in prominent international studies and consistent with HMT Green Book guidance on appraising long term costs. Unadjusted for inflation, the cost of moving to a 90% target is estimated to be approximately £25bn. Discounting is a technique used to compare costs and benefits occurring over different periods of time on a consistent basis, providing an estimate in present value terms. It reflects two components, firstly “time preference”, the concept that people prefer value goods and services in the current time period over future time periods, and secondly “the wealth effect”, where income grows over time, and future consumption will increase, so the value of each individual pound will be lower than it is today. Removing the impact of discounting is not best practice, and contrary to the approach taken in many international studies, particularly given the modelling approach makes decisions based on the concept, nevertheless, adjusting for inflation and removing the impact of discounting, the estimated cost of moving to a 90% target is approximately £59bn.

The table below allocates the additional cost according to the cost categories above, with additional information about what these costs may represent, subject to the uncertainties described earlier.

Finally, as highlighted above, there is a very large degree of uncertainty when assessing the energy system that will be in place by 2050. The below costs are indicative only. They represent one pathway for the evolution of the energy sector, while relying on the best information on current and future technologies and fuels we have today.

The increase in our climate ambitions results in an increase in costs of £13 billion largely due to the higher levels of electrification of the energy system, with a greater degree of bioenergy also consumed than would be required with an 80% target.

However, as discussed in the Energy Strategy, that is only one of the potential outcomes that can take place. Should hydrogen become the dominant fuel input, particularly for the supply of heat, then the distribution of costs could look different in 2050. In such a scenario, investment in electricity generating assets and consumer technologies that utilise electricity would be replaced by investments in technologies that manufacture hydrogen at scale and consumer technologies that utilise this fuel source. However, given the on-going research into the potential role for hydrogen at scale, the assessment of hydrogen costs is an area still under development.
**Additional Cost of 90% Target in 2050 Relative to 80% (Broken down by Cost Category):**

<table>
<thead>
<tr>
<th>Type of cost:</th>
<th>Additional cost (£bn 2017 prices, discounted) 2030-2050:</th>
<th>Impact:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable costs</td>
<td>-0.6</td>
<td>The net impact on variable costs in a 90% run compared to an 80% run is a marginal reduction. Increased targets result in a greater degree of decarbonisation, with increased variable expenditure on renewable electricity generation and low carbon resources and technologies. In particular, there is an increase in expenditure in imports and domestic production of biomass and bioenergy. Expenditure on electricity imports also increases, though Scotland remains a net overall exporter, due to the greater demand for electricity in a 90% scenario. These increases in costs are however offset by a fall in variable expenditure to source fossil fuel inputs, as a result of lower volumes of gas used by the system.</td>
</tr>
<tr>
<td>Fixed operating and maintenance costs</td>
<td>3.9</td>
<td>The increase in these costs is the result of: Greater expenditure in renewable electricity generation (wind, geothermal and hydro); bioenergy upgrading and manufacturing, which results in higher levels of electricity; and bioenergy use. There is also a slight increase in expenditure on hydrogen manufacturing. The increase in cost also results from the replacement of technologies using gas in the residential sector and services and towards electric heat pumps, electric cooking, and biomass and hydrogen boilers. Finally, the electrification of road transport (and greater expenditure in hydrogen hybrids for trucks) also results in higher levels of fixed O&amp;M costs.</td>
</tr>
<tr>
<td>Investment costs</td>
<td>10.0</td>
<td>The increase in investment costs by 2050 is the result of greater investment in renewable energy for electricity generation and in the upgrading and processing of the additional volumes of bioenergy that are either imported or domestically produced. Higher investment costs are also the result of the further electrification of the residential, services and transport sector, with expenditure in the transport sector also increasing due to expenditure on hydrogen technologies.</td>
</tr>
</tbody>
</table>
Cost of the Climate Change Plan TIMES Run – equivalent to around 1% of cumulative GDP to 2050.

The Climate Change Plan covers the period between 2018 and 2032, and as a result policies and proposals for each sector are only devised to cover this period. The Plan is a strategic document providing the framework for policies and proposals, with the detail of policies being set out when those policies are developed and implemented. The TIMES model used to support the development of the Climate Change Plan was run to 2050 as is standard practice, to ensure continuity in efforts beyond 2032 consistent with our overall climate change ambition of, at the time, an 80% target.

The TIMES model cannot be used to directly set policies and proposals, or critically, assess their cost. Its outputs (in particular the sector envelopes and energy system mix) were instead used to support the development the policies and proposals necessary to reduce emissions in each sector.

The cost of the TIMES run that supported the Climate Change Plan is estimated to amount to £33 billion over the period 2018 to 2050, in 2017 prices and discounted. This is equivalent to around 1% of cumulative GDP out to 2050. This should be seen in the context of the estimated cost of taking no action, which as discussed above has been estimated to potentially cost around 2.2% of global GDP according to the IPCC.

As discussed in the Climate Change Plan, to estimate this figure the system cost of a TIMES run with no targets (out to 2050) was subtracted from the cost of the model run that underpinned the Plan.

The table below provides a breakdown of the additional cost of the run that supported the Climate Change Plan over the TIMES model run with no targets. As discussed above, these figures represent the additional system cost to 2050, which includes investment and fuel costs derived using current estimates of costs and potential of existing and future technologies.

They therefore do not provide an indication of who the costs will fall to, as that would be determined by current and future policies and proposals designed to deliver the emission reductions associated with the targets.

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13 This is the IPCC’s mean value, the median cost value has been estimated to be 1.5% of global GDP.
## Additional Cost of Climate Change Plan Relative to TIMES Run with No Climate Change Targets (Broken down by Cost Category):

<table>
<thead>
<tr>
<th>Type of cost</th>
<th>Additional cost (£bn 2017 prices, discounted) 2018-2050</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable costs</td>
<td>7.7</td>
<td>The increase in variable cost in the energy system is the result of decarbonisation. There is an increase in expenditure on imported electricity, given the greater degree of electrification, while there is a fall in revenues due to lower volumes of fossil fuel exports. Variable costs also increase due to larger volumes of bioenergy resources being demanded by the energy system.</td>
</tr>
<tr>
<td>Fixed operating and maintenance costs</td>
<td>5.5</td>
<td>The net increase in fixed O&amp;M results from the higher levels of expenditure on renewable electricity and natural gas plants fitted with CCS. Another significant component of the additional fixed O&amp;M costs is the result of increased expenditure on hydrogen manufacturing and distribution. In the building sector, costs also increase due to expenditure on distribution networks and electric heating technologies, including heat pumps.</td>
</tr>
<tr>
<td>Investment costs</td>
<td>19.5</td>
<td>Investment costs represent the most significant component of the overall increase in expenditure. In line with the above fixed costs, they are the result of increased investment in renewable electricity and natural gas plants with CCS, bioenergy processing and upgrading plants, as well as hydrogen manufacturing. Within the building sectors, higher investment on electricity distribution networks, and electric heat (including heat pumps) also leads to the overall net increase. Finally, within the transport sector the transition away from fossil fuels and towards hybrids and electric vehicles also results in an overall increase in the levels of investment.</td>
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</table>
Keeling Schedule

This document has been prepared as a ‘Keeling schedule’ to set out the amendments to be made to the relevant parts of the **Climate Change (Scotland) Act 2009** (Parts 1, 2, 3 and 6 of the 2009 Act) by the **Climate Change (Emissions Reduction Targets) (Scotland) Bill**.

It is provided to assist in the Stage 1 scrutiny of the Climate Change (Emissions Reduction Targets) (Scotland) Bill and in the preparation of amendments for Stage 2. Although every effort has been made to ensure the accuracy of the information, it is for illustrative purposes only. It will not reflect any amendments agreed to by the Environment, Climate Change and Land Reform Committee at Stage 2 or by the Parliament at Stage 3.

Sections, subsections and text which are to be repealed or replaced by the Bill are included and shown in strike-through in red. All insertions made by the Bill to the 2009 Act are marked in red and underlined. All changes are indicated by sideling in the right margin.

**CLIMATE CHANGE (SCOTLAND) ACT 2009**

[AS PROSPECTIVELY AMENDED BY THE CLIMATE CHANGE (EMISSIONS REDUCTION TARGETS) (SCOTLAND) BILL]

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PART 1

The net-zero emissions target

A1 The net-zero emissions target

(1) The Scottish Ministers must ensure that the net Scottish emissions account for the net-zero emissions target year is at least 100% lower than the baseline (the target is known as the “net-zero emissions target”).

(2) The Scottish Ministers may by regulations specify a year which is to be the year in which the net-zero emissions target is to be met (the year specified in the regulations is known as the “net-zero emissions target year”).

(3) As soon as reasonably practicable after laying for approval a draft of such regulations, the Scottish Ministers must publish a statement setting out—

(a) their reasons for proposing to specify the net-zero emissions target year,

(b) the extent to which the proposed net-zero emissions target year takes account of the target-setting criteria, and

(c) whether the proposed net-zero emissions target year is consistent with the most up-to-date advice they have received from the relevant body and, if it is not, the reasons why.

(4) The duty in subsection (1) applies after the first regulations under subsection (2) come into force.

(5) If the Scottish Ministers make second or subsequent regulations under subsection (2), those regulations—

(a) must revoke the previous regulations made under that subsection, and

(b) may not specify a later year to replace the year applying under the revoked regulations, unless that later year is consistent with the most up-to-date advice that the Scottish Ministers have received from the relevant body.

The 2050 target

The 2050 and interim targets

1 The 2050 target

(1) The Scottish Ministers must ensure that the net Scottish emissions account for the year 2050 is at least 80% lower than the baseline.

(2) In this Act, the target set out in subsection (1) is known as the “2050 target”.

2 The interim targets
(1) The Scottish Ministers must ensure that the net Scottish emissions account for the year—

(a) 2020 is at least 56% lower than the baseline,

(b) 2030 is at least 66% lower than the baseline, and

(c) 2040 is at least 78% lower than the baseline.

(2) In this Act, each target set out in subsection (1) is known as an “interim target”.

2 The interim target

(1) The Scottish Ministers must ensure that the net Scottish emissions account for the year 2020 is at least 42% lower than the baseline.

(2) In this Act, the target set out in subsection (1) is known as the “interim target”.

(3) The Scottish Ministers may, by order, modify the percentage figure mentioned in subsection (1) so as to substitute—

(a) a figure provided by the relevant body by virtue of subsection (4)(b); or

(b) a higher figure,

for the one for the time being mentioned there.

(4) The Scottish Ministers must, as soon as reasonably practicable after the Bill for this Act receives Royal Assent, request advice from the relevant body as to (having regard to the criteria set out in subsection (5))—

(a) whether the percentage figure for the time being mentioned in subsection (1) is the highest achievable interim target; and

(b) if not, what the highest achievable interim target is.

(5) The criteria referred to in subsection (4) are—

(a) scientific knowledge about climate change;

(b) technology relevant to climate change;

(c) economic circumstances, in particular the likely impact of the target on—

(i) the Scottish economy;

(ii) the competitiveness of particular sectors of the Scottish economy;

(iii) small and medium-sized enterprises;

(iv) jobs and employment opportunities;

(d) fiscal circumstances, in particular the likely impact of the target on taxation, public spending and public borrowing;

(e) social circumstances, in particular the likely impact of the target on those living in poorer or deprived communities;

(f) the likely impact of the target on those living in remote rural communities and island communities;

(g) energy policy, in particular the likely impact of the target on energy supplies, the renewable energy sector and the carbon and energy intensity of the Scottish economy;
(h) environmental considerations and, in particular, the likely impact of the targets on biodiversity;

(i) European and international law and policy relating to climate change.

(6) The Scottish Ministers must publish the advice requested under subsection (4) no later than 31 December 2009 (or, if the advice is not published by that date, as soon as reasonably practicable afterwards).

(7) Where the relevant body has provided advice of the kind mentioned in subsection (4)(b), the Scottish Ministers must, as soon as reasonably practicable after that advice is published under subsection (6), comply with either of the duties set out in subsection (8).

(8) The duties are—

(a) to lay before the Scottish Parliament a draft of a statutory instrument containing an order under subsection (3) substituting for the percentage figure for the time being mentioned in subsection (1) the figure provided by the relevant body by virtue of subsection (4)(b); or

(b) to make a statement to the Scottish Parliament setting out the reasons why no such order has been laid.

(9) If an appropriate EU instrument comes into force, the Scottish Ministers must, before the expiry of the appropriate period, lay a draft of a statutory instrument containing an appropriate order before the Scottish Parliament.

(10) An “appropriate order” means an order under subsection (3) modifying the percentage figure mentioned in subsection (1) so as to substitute a figure of at least 42%.

(11) An “appropriate EU instrument” means an EU instrument—

(a) which contains a commitment to reduce greenhouse gas emissions by at least 30% compared to 1990 levels by 2020; and

(b) which amends Decision 406/2009/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community’s greenhouse gas emission reduction commitments up to 2020 in the manner envisaged in Article 8(2) of the Decision.

(12) The “appropriate period” means the period of 3 months beginning with the day on which the appropriate EU instrument comes into force.

(13) If a draft of an appropriate order is not laid before the expiry of the appropriate period, the Scottish Ministers must lay the draft as soon as reasonably practicable afterwards.

(14) Subsections (9) to (13) cease to apply if a figure higher than 42% is, by virtue of a draft of a statutory instrument of the kind mentioned in subsection (8)(a) having been approved by the Scottish Parliament, the percentage figure for the time being mentioned in subsection.

2A Modification of the 2050 and interim targets

(1) The Scottish Ministers may by regulations modify one or more of the percentage figures applying for the purposes of—

(a) the 2050 target, or

(b) any of the interim targets.
so as to substitute a higher or lower figure for the one for the time being mentioned in section 1(1) or, as the case may be, section 2(1)(a), (b) or (c).

(2) But regulations under subsection (1) may not substitute a lower percentage figure for the 2050 target or for an interim target if that figure is—

(a) inconsistent with the most up-to-date advice the Scottish Ministers have received from the relevant body,

(b) lower than any percentage figure applying, immediately after the regulations come into force, for an interim target for an earlier year, or

(c) lower than 100% for a year which is the same as, or later than, the net-zero emissions target year.

(3) In preparing a draft of regulations to be made under subsection (1), the Scottish Ministers must have regard to—

(a) the target-setting criteria, and

(b) the most up-to-date advice they have received from the relevant body.

(4) Subsection (5) applies if—

(a) the Scottish Ministers lay before the Scottish Parliament for approval a draft of regulations under section A1(2) which specify a net-zero emissions target year of 2050 or earlier, and

(b) any percentage figure applying for the purposes of—

(i) the 2050 target, or

(ii) any interim target for a year which is the same as or later than the proposed net-zero emissions target year,

is lower than 100%.

(5) The Scottish Ministers must, at the same time or as soon as reasonably practicable after laying the regulations mentioned in subsection (4)(a), lay before the Scottish Parliament for approval a draft of regulations under subsection (1) which modify to 100% a percentage figure mentioned in subsection (4)(b).

(6) As soon as reasonably practicable after laying for approval a draft of regulations to be made under subsection (1), the Scottish Ministers must publish a statement setting out in respect of each proposed modification of a percentage figure by the regulations—

(a) their reasons for proposing to modify the percentage figure,

(b) the extent to which the proposed modification takes account of the target-setting criteria, and

(c) whether the proposed modification is consistent with the most up-to-date advice they have received from the relevant body.

The target-setting criteria

2B The target-setting criteria

(1) In this Act, the “target-setting criteria” are—

(a) the objective of not exceeding the fair and safe Scottish emissions budget,
(b) European and international law and policy relating to climate change (including the United Nations Framework Convention on Climate Change and protocols to that Convention).

(c) scientific knowledge about climate change.

(d) technology relevant to climate change.

(e) economic circumstances, in particular the likely impact of the target on—
   
   (i) the Scottish economy,
   
   (ii) the competitiveness of particular sectors of the Scottish economy,
   
   (iii) small and medium-sized enterprises,
   
   (iv) jobs and employment opportunities.

(f) fiscal circumstances, in particular the likely impact of the target on taxation, public spending and public borrowing.

(g) social circumstances, in particular the likely impact of the target on those living in poorer or deprived communities.

(h) the likely impact of the target on those living in remote rural communities and island communities.

(i) energy policy, in particular the likely impact of the target on energy supplies, the renewable energy sector and the carbon and energy intensity of the Scottish economy.

(j) environmental considerations and, in particular, the likely impact of the targets on biodiversity.

(k) current international carbon reporting practice.

(2) In subsection (1), the “fair and safe Scottish emissions budget” is the aggregate amount of net Scottish emissions for the period 2010 to 2050 as recommended by the relevant body as being consistent with Scotland contributing appropriately to stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

(3) The Scottish Ministers may by regulations modify subsection (1) and (2) so as to add, remove or vary the description of a target-setting criterion.

Advice about targets

2C Duty to seek advice from the relevant body

(1) The Scottish Ministers must request advice from the relevant body at least once before the expiry of each relevant 5 year period.

(2) A “relevant 5 year period” means a period of 5 years which begins with—

   (a) in the case of the first period, the date on which this section comes into force, and
   
   (b) in the case of a subsequent period, the date on which the previous request for advice was, or is treated as having been, made under subsection (1).

(3) A request for advice under subsection (1) must request the relevant body’s views as to—

   (a) whether the net-zero emissions target is achievable and, if so, what is the earliest achievable net-zero emissions target year (with views on both matters taking account of the target-setting criteria).
(b) whether the percentage figure applying for the purposes of—
   (i) the 2050 target, and
   (ii) each interim target not yet reported on under section 33,
   is appropriate by reference to the target-setting criteria (and if not, advice as to any alternative percentage figure that would be appropriate),

(c) the extent to which each relevant target should be met by—
   (i) taking action to reduce net Scottish emissions, and
   (ii) the crediting of carbon units to the net Scottish emissions account in accordance with regulations under section 13(5),

(d) the respective contributions towards meeting each relevant target that should be made by—
   (i) the sectors of the Scottish economy which are covered by trading schemes within the meaning of section 44 of the 2008 Act, and
   (ii) the other sectors of the Scottish economy,

(e) the respective contributions towards meeting each relevant target that should be made by—
   (i) energy efficiency,
   (ii) energy generation,
   (iii) land use, and
   (iv) transport.

(4) A “relevant target” is—
   (a) an annual target for a year within the period of 15 years beginning with the year immediately following the year in which a request is made under subsection (1),
   (b) an interim target for a year within that 15 year period,
   (c) the 2050 target, if the year 2050 is within that 15 year period, and
   (d) the net-zero emissions target, if the net-zero emissions target year is within that 15 year period.

(5) A request for advice under subsection (1) may request the relevant body’s views as to any other matter which the Scottish Ministers consider relevant for the purposes of this Part.

2D Power to seek additional advice

(1) The Scottish Ministers may request advice from the relevant body at any time on—
   (a) a matter mentioned in section 2C(3),
   (b) any other matter which they consider relevant for the purposes of this Part.

(2) But any request for advice under subsection (1) on all of the matters mentioned in section 2C(3) is to be treated as having been made under section 2C(1).

2E Ministerial duties following request for advice
(1) The Scottish Ministers must publish any advice received in response to a request under section 2C(1) or 2D(1) as soon as reasonably practicable after they receive it.

(2) Subsection (3) applies if—
   
   (a) the relevant body’s advice states that a particular year is the earliest achievable year for the net-zero emissions target,
   
   (b) that year is not already the net-zero emissions target year, and
   
   (c) the Scottish Ministers do not, within 12 months of receiving that advice, lay for approval a draft of regulations under section A1(2) to specify that year as the net-zero emissions target year.

(3) The Scottish Ministers must make a statement to the Scottish Parliament setting out the reasons for not laying for approval a draft of regulations under section A1(2) to specify the advised year as the net-zero emissions target year.

(4) Subsection (5) applies if—
   
   (a) the relevant body’s advice states that a percentage figure for the 2050 target or an interim target applying when the request is made is not appropriate and that another figure would be appropriate, and
   
   (b) the Scottish Ministers do not, within 12 months of receiving that advice, lay for approval a draft of regulations under section 2A(1) to make the advised modification to that percentage figure.

(5) The Scottish Ministers must make a statement to the Scottish Parliament setting out the reasons for not laying for approval a draft of regulations under section 2A(1) making the advised modification to that percentage figure.

Annual targets

3 Annual targets: 2021 to 2049

(1) The Scottish Ministers must ensure that the net Scottish emissions account is at least the relevant target figure lower than the baseline for each year in the period—
   
   (a) beginning with 2021 and ending with 2029 (the “2021-2029 period”),
   
   (b) beginning with 2031 and ending with 2039 (the “2031-2039 period”), and
   
   (c) beginning with 2041 and ending with 2049 (the “2041-2049 period”).

(2) The relevant target figure for each year in the 2021-2029 period is a percentage figure calculated by—
   
   (a) taking the difference between the percentage figures applying for the purposes of the interim targets for 2020 and 2030, and
   
   (b) apportioning that difference in a way which results in there being an equal percentage point change between the percentage figure for each consecutive year in the period beginning with 2020 and ending with 2030.

(3) The relevant target figure for each year in the 2031-2039 period is a percentage figure calculated by—
   
   (a) taking the difference between the percentage figures applying for the purposes of the interim targets for 2030 and 2040, and
(b) apportioning that difference in a way which results in there being an equal percentage point change between the percentage figure for each consecutive year in the period beginning with 2030 and ending with 2040.

(4) The relevant target figure for each year in the 2041-2049 period is a percentage figure calculated by—

(a) taking the difference between the percentage figures applying for the purposes of the interim target for 2040 and the 2050 target, and

(b) apportioning that difference in a way which results in there being an equal percentage point change between the percentage figure for each consecutive year in the period beginning with 2040 and ending with 2050.

(5) In calculating or recalculating a relevant percentage figure by virtue of this section or sections 3A or 3B, the figure must be rounded to one decimal place, with numbers at the midpoint or greater being rounded up and other numbers being rounded down.

(6) In this Act, each target set by virtue of this section (or recalculated in accordance with section 3A or 3B) is known as an “annual target”.

3A Annual targets: recalculation if net-zero emissions target year is in certain periods

(1) This section applies where regulations made under section A1(2) specify a net-zero emissions target year which is in either—

(a) the 2021-2029 period,

(b) the 2031-2039 period, or

(c) the 2041-2049 period.

(2) The relevant target figure applying by virtue of section 3 for a year which is—

(a) in the same period as the net-zero emissions target year but before the net-zero emissions target year, is modified in accordance with subsection (3),

(b) the same as, or after, the net-zero emissions target year, is modified to become 100%.

(3) Where this subsection applies to a relevant target figure, that figure is modified to become a percentage figure calculated by—

(a) taking the difference between—

(i) the target figure applying for the interim target which immediately precedes the net-zero emissions target year, and

(ii) 100%, and

(b) apportioning that difference in a way which results in there being an equal percentage change between the percentage figure for each consecutive year in the period beginning with the year of the interim target which immediately precedes the net-zero emissions target year and ending with the net-zero emissions target year.

(4) Any modification under this section does not apply to a year which is the same as, or earlier than, the year in which the regulations under section A1(2) come into force.

3B Annual targets: further rules on recalculation
(1) This section applies where the Scottish Ministers make regulations under either of the following—

(a) section A1(2), where the regulations are the second or subsequent regulations made under that section,

(b) section 2A(1) modifying one or more of the percentage figures applying for the purposes of the 2050 target or for any interim target.

(2) An annual target in relation to a year which is subsequent to the year in which the regulations mentioned in subsection (1) come into force is to be recalculated under section 3 and, where applicable, modified under section 3A in accordance with the figures applying immediately after those regulations come into force.

(3) But an annual target in relation to a year which is the same as, or earlier than, the year in which the regulations mentioned in subsection (1) come into force is not to be recalculated or modified, except where subsection (4) applies.

(4) This subsection applies where, at the same time or as soon as reasonably practicable after laying for approval a draft of regulations mentioned in subsection (1), the Scottish Ministers publish a statement that the regulations are in response to, and consistent with, the most up-to-date advice they have received from the relevant body advising that targets should be modified for the sole reason of a change in international carbon reporting practice.

(5) Where subsection (4) applies, an annual target in respect of a year for which the Scottish Ministers have not yet reported on under section 33 is also to be recalculated in accordance with subsection (2) for the purposes of assessing and reporting in accordance with section 33.

Information about targets

3C Publication of targets

(1) The Scottish Ministers must keep and maintain a list of the following—

(a) the net-zero emissions target year, if it has been specified by regulations made under section A1(2),

(b) the percentage figure for the 2050 target,

(c) the percentage figure for each interim target,

(d) the percentage figure for each annual target (including any such figure recalculated and, where applicable, modified under this Part),

(e) the percentage figure for each of the years 2017, 2018 and 2019, as set out in section 10 of the Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.

(2) The Scottish Ministers may remove from the list any entry in respect of a year in relation to which the Scottish Ministers have reported on under section 33.

(3) The Scottish Ministers must lay a copy of the list before the Scottish Parliament—

(a) in the case of the first list, as soon as reasonably practicable after it has been compiled, and

(b) in any other case, as soon as reasonably practicable after the net-zero emissions target year or a percentage figure mentioned in subsection (1) is first specified or has been modified.
The Scottish Ministers must publish, in such manner as they consider appropriate, the information contained in the list mentioned in subsection (1).

### Annual targets

1. The Scottish Ministers must—
   - for each year in the period 2010–2050, set a target for the maximum amount of the net Scottish emissions account;
   - ensure that the net Scottish emissions account for each year in that period does not exceed the target set for that year.

2. The target—
   - for 2010, must be set at an amount that is less than the estimated net Scottish emissions account for 2009;
   - for each year in the period 2011–2019, must be set at an amount that is consistent with a reduction over that period of net Scottish emissions accounts which would allow the interim target and the 2050 target to be met;
   - for each year in the period 2020–2050, must be set at an amount that is—
     - consistent with a reduction over that period of net Scottish emissions accounts which would allow the 2050 target to be met; and
     - at least 3% less than the target for the preceding year.

3. In this Act—
   - an “annual target” for any year means the target for the maximum amount of the net Scottish emissions account set for that year in accordance with this section and section;
   - references to an annual target being met are references to the net Scottish emissions account for a year not exceeding the annual target for that year (and cognate expressions are to be construed accordingly).

### Setting annual targets

1. The Scottish Ministers must, by order, set the annual targets for each year in the periods mentioned in paragraphs (a) to (g) of subsection (2).

2. The Scottish Ministers must set the annual targets for each year—
   - in the period 2010–2022, no later than 1 June 2010;
   - in the period 2023–2027, no later than 31 October 2011;
   - in the period 2028–2032, no later than 31 October 2016;
   - in the period 2033–2037, no later than 31 October 2021;
   - in the period 2038–2042, no later than 31 October 2026;
   - in the period 2043–2047, no later than 31 October 2031;
   - in the period 2048–2050, no later than 31 October 2036.
The Scottish Ministers must, when setting annual targets, have regard to any advice they receive from the relevant body as to the cumulative amount of net Scottish emissions for the period 2010–2050 that is consistent with a reduction over that period of net Scottish emissions accounts which would allow the 2050 target to be met.

The Scottish Ministers must, when setting annual targets, also have regard to the following matters (the "target-setting criteria")—

(a) the objective of not exceeding the fair and safe Scottish emissions budget;
(b) scientific knowledge about climate change;
(c) technology relevant to climate change;
(d) economic circumstances, in particular the likely impact of the target on—
   (i) the Scottish economy;
   (ii) the competitiveness of particular sectors of the Scottish economy;
   (iii) small and medium-sized enterprises;
   (iv) jobs and employment opportunities;
(e) fiscal circumstances, in particular the likely impact of the target on taxation, public spending and public borrowing;
(f) social circumstances, in particular the likely impact of the target on those living in poorer or deprived communities;
(g) the likely impact of the target on those living in remote rural communities and island communities;
(h) energy policy, in particular the likely impact of the target on energy supplies, the renewable energy sector and the carbon and energy intensity of the Scottish economy;
(i) environmental considerations and, in particular, the likely impact of the targets on biodiversity;
(j) European and international law and policy relating to climate change.

If annual targets for a period are not set by the corresponding date mentioned in paragraphs (a) to (g) of subsection (2), the Scottish Ministers must set the annual targets as soon as reasonably practicable afterwards.

In this Act, the "fair and safe Scottish emissions budget" is the aggregate amount of net Scottish emissions for the period 2010–2050 recommended by the relevant body as being consistent with Scotland contributing appropriately to stabilisation of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.

Advice before setting annual targets

The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under section 4(1) before the Scottish Parliament, request advice from the relevant body.
(a) in the case of annual targets proposed for years in the period 2010–2020, as to whether those targets are consistent with a reduction over that period of net Scottish emissions accounts which would allow the interim target and the 2050 target to be met;

(b) in the case of annual targets proposed for years in the period 2021–2050, as to whether those targets are consistent with a reduction over that period of net Scottish emissions accounts which would allow the 2050 target to be met;

(c) in any case—

(i) as to what annual targets are appropriate by reference to the target-setting criteria;

(ii) as to the extent to which the annual targets should be met—

(A) by taking action to reduce net Scottish emissions;

(B) by the use of carbon units that in accordance with section 13(2) and regulations under section 13(5) may be credited to the net Scottish emissions account;

(iii) as to the respective contributions towards meeting the annual targets and the domestic effort target that should be made—

(A) by the traded sector of the Scottish economy;

(B) by the other sectors of the Scottish economy;

(iv) as to the respective contributions towards meeting the annual targets and the domestic effort target that should be made by—

(A) energy efficiency;

(B) energy generation;

(C) land use;

(D) transport.

(3) The Scottish Ministers must publish the advice requested under subsection (1) as soon as reasonably practicable after they receive it.

(4) As soon as reasonably practicable after laying such a draft, the Scottish Ministers must publish a statement setting out in respect of the annual targets set by the order—

(a) the reasons for setting those annual targets at those levels;

(b) the extent to which those targets take account of the target-setting criteria.

(5) If the order under section 4(1) makes provision different from that recommended by the relevant body, the Scottish Ministers must publish a statement setting out the reasons why.

(6) Advice requested under subsection (1) or a statement under subsection (4) or (5) may be published in such manner as the Scottish Ministers consider appropriate.

(7) In this Part, the “relevant body” means—

(a) where no order has been made under section 24(1) designating a person or body as the advisory body, the UK Committee on Climate Change; or

(b) where such an order has been made, the advisory body.
6—— Modifying annual targets etc.

(1) The Scottish Ministers may, by order, modify——

(a) the percentage figure mentioned in section 3(2)(c)(ii);  
(b) an annual target set by virtue of section 4(1);  
(c) any date mentioned in paragraphs (a) to (g) of section 4(2);  
(d) the target-setting criteria in section 4(4).

(2) The Scottish Ministers must, at the same time as laying a draft of a statutory instrument containing an order under subsection (1)(a) before the Scottish Parliament, lay before the Parliament a report explaining why the modification is being proposed.

(3) The Scottish Ministers must, as soon as reasonably practicable after laying a report before the Scottish Parliament under subsection (2), and in so far as reasonably practicable, make a statement to the Parliament relating to the report.

(4) The Scottish Ministers may make an order under subsection (1)(a) only if they consider that it is no longer necessary for annual targets to be set by reference to that percentage figure.

(5) The Scottish Ministers may make an order under subsection (1)(b) only if they consider it appropriate to do so as a result of——

(a) a modification of the interim target; or  
(b) another significant change to the basis on which the annual target was set.

(6) The Scottish Ministers may make an order under subsection (1)(c) or (d) only if they consider it appropriate to do so.

(7) The power in subsection (1)(a) may not be exercised so as to substitute a percentage of less than zero.

(8) The power in subsection (1)(b)—

(a) may be exercised only before the beginning of the year to which the target relates;  
(b) may not be exercised if the effect of doing so would be that the target for the year would be greater than the target for the preceding year.

7—— Advice before modifying annual targets etc.

(1) The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under section 6(1) before the Scottish Parliament, request advice from the relevant body.

(2) If the order under section 6(1) makes provision different from that recommended by the relevant body, the Scottish Ministers must lay before the Scottish Parliament a report setting out the reasons why.
(3) The Scottish Ministers must, as soon as reasonably practicable after laying a report before the Scottish Parliament under subsection (2), and in so far as reasonably practicable, make a statement to the Parliament relating to the report.

The domestic effort target

8 The domestic effort target

(1) The Scottish Ministers must ensure that reductions in net Scottish emissions of greenhouse gases account for at least 80% of the reduction in the net Scottish emissions account in any target year.

(2) In this Act, the target set out in subsection (1) is known as the “domestic effort target”.

(3) For the purposes of ascertaining whether the domestic effort target has been met, any reduction to the net Scottish emissions account as a result of the crediting to that account of a net amount of European carbon units mentioned in subsection (4) is to be treated as though it is a reduction in net Scottish emissions.

(4) In subsection (3), “European carbon units” means carbon units which are surrendered by participants in—

(a) the European Union Emissions Trading Scheme (“EU ETS”); or
(b) such other trading scheme making provision equivalent to the EU ETS as the Scottish Ministers may, by order, specify.

(5) In subsection (4)(b), “trading scheme” means a trading scheme within the meaning of section 44 of the 2008 Act.

(6) The Scottish Ministers may, by order, modify the percentage figure mentioned in subsection (1) so as to substitute a higher figure for the one for the time being mentioned there.

(7) The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under subsection (6) before the Scottish Parliament, request advice from the relevant body.

(8) If the order under subsection (6) makes provision different from that recommended by the relevant body, the Scottish Ministers must publish a statement setting out the reasons why.

(9) A statement under subsection (8) may be published in such manner as the Scottish Ministers consider appropriate.

Advice on progress

9 Progress towards targets

(1) The Scottish Ministers must in each year, beginning with the year 2011, request the relevant body to prepare a report setting out that body's views on—

(a) progress towards achievement of future emissions reduction targets, —

(i) annual targets;
(ii) the interim target;
(iii) the 2050 target;
whether the annual targets, the interim target or the 2050 target future emissions reduction targets are likely to be achieved;

(c) any further effort which may be necessary to achieve annual targets, the interim target or the 2050 target future emissions reduction targets.

(2) No later than the end of the second year following a year for which an annual target has been set (a “target year”), the Scottish Ministers must request the relevant body to prepare a report setting out that body's views on—

(a) whether the annual emissions reduction target for the target year was met;

(b) whether the domestic effort target was met in that target year;

(c) the ways in which those targets were or were not met;

(d) the action taken by the Scottish Ministers to reduce net Scottish emissions during that year.

(3) The Scottish Ministers must lay a response to the relevant body's report under this section before the Scottish Parliament as soon as reasonably practicable after they receive that body's report.

**Greenhouse gases**

10 Greenhouse gases

(1) In this Act, a “greenhouse gas” means—

(a) carbon dioxide;

(b) methane;

(c) nitrous oxide;

(d) hydrofluorocarbons;

(e) perfluorocarbons;

(f) sulphur hexafluoride;

(g) nitrogen trifluoride.

(2) The Scottish Ministers may, if they consider it appropriate to do so, by order, modify subsection (1) so as to—

(a) add a gas;

(b) modify the description of a gas.

(3) The power in subsection (2)(a) may be exercised only if it appears to the Scottish Ministers that an agreement or arrangement at European or international level recognises that the gas to be added contributes to climate change.

(4) The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under subsection (2) before the Scottish Parliament, request advice from the relevant body.

(5) If the order makes provision different from that recommended by the relevant body, the Scottish Ministers must publish a statement setting out the reasons why.

(6) A statement under subsection (5) may be published in such manner as the Scottish
Baseline

11 The baseline

(1) In this Act, the “baseline” means the aggregate amount of—
   (a) net Scottish emissions of carbon dioxide for 1990; and
   (b) net Scottish emissions of each of the greenhouse gases other than carbon dioxide
       for the year that is the baseline year for that gas.

(2) The baseline years for greenhouse gases other than carbon dioxide are—
   (a) for methane, 1990;
   (b) for nitrous oxide, 1990
   (c) for hydrofluorocarbons, 1995;
   (d) for perfluorocarbons, 1995;
   (e) for sulphur hexafluoride, 1995;
   (f) for nitrogen trifluoride, 1995.

12 Baselines for additional greenhouse gases

(1) This section applies where the Scottish Ministers have made an order under section
    10(2)(a) adding a greenhouse gas.

(2) In this section, such a gas is referred to as an “additional greenhouse gas”.

(3) The Scottish Ministers may, by order, make provision as to the manner of determining,
    in the case of an additional greenhouse gas, the amount of net Scottish emissions for the
    baseline year.

(4) An order under subsection (3) may in particular—
    (a) designate a year as the baseline year for the additional greenhouse gas;
    (b) provide for the amount of net Scottish emissions of the gas for that year to be
        treated for the purposes of this Act as the amount of net Scottish emissions of that
        gas for that baseline year.

Supplementary

13 The net Scottish emissions account

(1) The net Scottish emissions account means the aggregate amount of net Scottish
    emissions of greenhouse gases—
    (a) reduced by the amount of carbon units credited to the net Scottish emissions
        account for the period in accordance with regulations under subsection (5);
    (b) increased by the amount of carbon units that, in accordance with such regulations,
        are to be debited from the net Scottish emissions account for the period.

(2) The net amount of carbon units credited to the net Scottish emissions account for a year
    for which an annual target has been set (a “target year”) must not exceed the allowable
    amount.

(3) The “allowable amount” is—
(a) the amount equal to the limit, set by virtue of section 21(1), on the net amount of
carbon units that may be credited to net Scottish emissions accounts during the
period which includes the target year; or
(b) where a net amount of carbon units has been credited to the net Scottish
emissions account for any other target year in that period, the balance (if any)
remaining of the amount referred to in paragraph (a).

(4) In subsections (2) and (3), the “net amount of carbon units” has the meaning given by
section 21(3).

(5) The Scottish Ministers may, by regulations, make provision about—

(a) the circumstances in which carbon units may or may not be credited to the net
Scottish emissions account for a period;

(b) the circumstances in which such units may or may not be debited from that
account for a period;

(c) the manner in which this is to be done.

(5A) But the amount of carbon units purchased by the Scottish Ministers that may, by virtue
of regulations under subsection (5), be credited to the net Scottish emissions account for
a period is zero, unless regulations under section 13A specify a higher limit in relation to
that period.

(6) The regulations must contain provision for ensuring that carbon units that are credited to
the net Scottish emissions account for a period cease to be available to offset other
greenhouse gas emissions.

13A Permitted use of carbon units purchased by the Scottish Ministers

(1) The Scottish Ministers may by regulations set a limit representing the maximum amount
of carbon units purchased by them that may be credited to the net Scottish emissions
account for a year.

(2) A limit set in regulations under subsection (1) for a target year must not exceed an
amount which represents 20% of the planned reduction in the net Scottish emissions
account for that year.

(3) The planned reduction in the net Scottish emissions account for a target year is the
difference between the following amounts, both being calculated immediately before the
regulations under subsection (1) are made—

(a) the minimum amount by which the emissions reduction target for the target year
requires the net Scottish emissions account to be lower than the baseline, and

(b) the minimum amount by which the emissions reduction target for immediately
preceding year requires the net Scottish emissions account to be lower than the
baseline.

(4) Regulations under subsection (1) may set a limit only for a year—

(a) in respect of which the Scottish Ministers have not yet reported on under section
33, and

(b) which ends no more than 10 years after the year in which the regulations come
into force.
(5) As soon as reasonably practicable after laying for approval a draft of regulations under subsection (1) which propose an increase to the limit applying to a year, the Scottish Ministers must publish a statement setting out—
   (a) their reasons for proposing an increase to the limit, and
   (b) whether the proposed limit is consistent with the most up-to-date advice they have received from the relevant body.

14 Restriction on use in 2010–2017 of carbon units purchased by Scottish Ministers

(1) The Scottish Ministers may not, where subsection (2) applies, credit to the net Scottish emissions account for a year in the period 2010–2012 any carbon units purchased by them.

(2) This subsection applies provided the percentage figure mentioned in section is 34%.

(3) The Scottish Ministers may only credit to the net Scottish emissions account for a year in the period 2013–2017 any carbon units purchased by them up to a limit of 20% of the reduction in the amount of the net Scottish emissions account planned for that year.

15 Attribution of emissions to Scotland

For the purposes of section 17(1), emissions of a greenhouse gas are attributable to Scotland if—
   (a) they are emitted from sources in Scotland;
   (b) they are attributed to Scotland by virtue of an order under section 16(1).

16 Scottish share of emissions from international aviation and international shipping

(1) The Scottish Ministers may, by order, make provision regarding the emissions of greenhouse gases from international aviation and international shipping that are attributable to Scotland.

(2) An order under subsection (1)—
   (a) must make provision for emissions from international aviation and international shipping of—
      (i) in the case of the first order under that subsection, each greenhouse gas; and
      (ii) in the case of any subsequent order under subsection (1), any gas added to the list of greenhouse gases in section 10(1) since the last such order was made, to be taken into account as Scottish emissions of each such gas in the period starting with the 1 January following the order being approved by the Scottish Parliament and ending on 31 December 2050;
   (b) may make provision as to any past period in which emissions of a greenhouse gas are to be taken into account as Scottish emissions of that gas;
   (c) may not, once emissions from international aviation and international shipping of a greenhouse gas are, by virtue of a previous order under subsection (1), being taken into account as Scottish emissions of that gas, provide for such emissions to cease to be taken into account as Scottish emissions of that gas;
(d) must, subject to subsection (3), make provision as to the manner in which emissions from international aviation and international shipping of each greenhouse gas are to be taken into account in determining Scottish emissions of that gas—

(i) for the year that is the baseline year for that gas; and

(ii) in the period during which such emissions of that gas are to be taken into account as Scottish emissions of that gas.

(3) Provision made by virtue of subsection (2)(d) must include the use, for each greenhouse gas, of a multiplier which reflects the direct and indirect non-carbon dioxide climate change impacts of emissions at altitude from international aviation.

(4) A draft of a statutory instrument containing the first order under subsection (1) must be laid before the Scottish Parliament no later than 1 June 2010.

(5) If a draft of the first order is not laid by the date mentioned in subsection (4), the Scottish Ministers must lay the draft as soon as reasonably practicable afterwards.

(6) The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under subsection (1) before the Scottish Parliament, request advice from the relevant body (including advice as to an appropriate multiplier for each greenhouse gas for the purposes of subsection (3)).

(7) If the order makes provision different from that recommended by the relevant body, the Scottish Ministers must publish a statement setting out the reasons why.

(8) A statement under subsection (7) may be published in such manner as the Scottish Ministers consider appropriate.

17 Scottish emissions and removals

(1) In this Act—

“emissions”, in relation to a greenhouse gas, means emissions of that gas into the atmosphere that are attributable to human activity;

“Scottish emissions”, in relation to a greenhouse gas, means emissions of that gas which are attributable to Scotland;

“Scottish removals”, in relation to a greenhouse gas, means removals of that gas from the atmosphere due to land use, land-use change or forestry activities in Scotland;

“the net Scottish emissions” for a period, in relation to a greenhouse gas, means the amount of Scottish emissions of that gas for the period reduced by the amount of Scottish removals of that gas for the period.

(2) The Scottish Ministers may, if they consider it appropriate to do so, by order, modify the definition of Scottish removals in subsection (1).

(3) The amount of Scottish emissions and Scottish removals of a greenhouse gas for a period must, in so far as reasonably practicable, be determined consistently with international carbon reporting practice, or, for the purposes of assessing and reporting in accordance with section 33, target-relevant international carbon reporting practice.
18 Measurement of emissions etc.

(1) For the purposes of this Act, greenhouse gas emissions, reductions of such emissions and removals of greenhouse gases from the atmosphere are measured or calculated in tonnes of carbon dioxide equivalent.

(2) A “tonne of carbon dioxide equivalent” means one metric tonne of carbon dioxide or an amount of any other greenhouse gas with an equivalent global warming potential (calculated consistently with international carbon reporting practice). A “tonne of carbon dioxide equivalent” means one metric tonne of carbon dioxide or an amount of any other greenhouse gas with an equivalent global warming potential (determined, in so far as reasonably practicable, consistently with current international carbon reporting practice or, for the purposes of assessing and reporting in accordance with section 33, target-relevant international carbon reporting practice).

19 International carbon reporting practice

(1) In this Act, “international carbon reporting practice” means accepted practice in relation to reporting for the purposes of—

(a) the protocols to the United Nations Framework Convention on Climate Change;

(b) such other agreements or arrangements at European or international level as the Scottish Ministers may, by order, specify.

(2) The following definitions also apply for the purposes of this Act—

“current international carbon reporting practice” means the most up-to-date international carbon reporting practice, and

“target-relevant international carbon reporting practice” means a practice which produces results which are consistent with those which would have been produced by using the international carbon reporting practice which was current at the later of—

(a) 30 June 2018,

(b) the date on which Scottish Ministers last received advice from the relevant body following a request under section 2C.

20 Carbon units and carbon accounting

(1) The Scottish Ministers may, by regulations, make provision for a scheme—

(a) for registering or otherwise keeping track of carbon units;

(b) for establishing and maintaining accounts in which carbon units may be held, and between which they may be transferred, by the Scottish Ministers.

(2) Regulations under subsection (1) may, in particular, provide for an existing scheme to be adapted for these purposes.

(3) The regulations may also include provision—

(a) designating a person or body to administer the scheme;

(b) establishing a person or body for that purpose and making such provision in relation to the appointment of members, staffing, expenditure, procedure and otherwise of the person or body as the Scottish Ministers consider appropriate;
(c) conferring power on the Scottish Ministers to give guidance or directions to the person or body administering the scheme;

(d) conferring power on the Scottish Ministers to delegate the performance of any of the functions conferred on them by the regulations;

(e) requiring the payment by persons using the scheme of such charges as are reasonably required to cover the reasonable costs incurred in operating the scheme.

(4) In this Act, a “carbon unit” means a unit of a kind specified in regulations made under subsection (1) and which represents—

(a) a reduction in an amount of greenhouse gas emissions;

(b) the removal of an amount of greenhouse gas from the atmosphere;

(c) an amount of greenhouse gas emissions allowed under a scheme or arrangement imposing a limit on such emissions.

20A The relevant body

(1) In this Part, the “relevant body” means—

(a) where no order has been made under section 24(1) designating a person or body as the advisory body, the UK Committee on Climate Change; or

(b) where such an order has been made, the advisory body.

(2) In subsection (1)(a), the “UK Committee on Climate Change” means the Committee on Climate Change established under section 32 of the 2008 Act.

21 Limits on use of carbon units

(1) The Scottish Ministers must, by order, set a limit on the net amount of carbon units that may be credited to net Scottish emissions accounts during the periods mentioned in paragraphs (a) to (i) of subsection (2).

(2) The Scottish Ministers must set the limit—

(a) for the period 2010–2012, no later than 1 June 2010;

(b) for the period 2013–2017, no later than 31 December 2011;

(c) for the period 2018–2022, no later than 31 December 2016;

(d) for the period 2023–2027, no later than 31 December 2021;

(e) for the period 2028–2032, no later than 31 December 2026;

(f) for the period 2033–2037, no later than 31 December 2031;

(g) for the period 2038–2042, no later than 31 December 2036;

(h) for the period 2043–2047, no later than 31 December 2041;

(i) for the period 2048–2050, no later than 31 December 2046.

(3) The “net amount of carbon units” means C minus D, where—

“C” is the amount of carbon units credited to net Scottish emissions accounts during the period in accordance with regulations under section 13(5);
“D” is the amount of carbon units debited from net Scottish emissions accounts during the period in accordance with such regulations.

(4) An order under subsection (1) may provide that carbon units of a description specified in the order do not count towards the limit.

(5) If the limit for a period is not set by the corresponding date mentioned in paragraphs (a) to (i) of subsection (2), the Scottish Ministers must set the limit as soon as reasonably practicable afterwards.

22 — Modifying limits on use of carbon units etc.

(1) The Scottish Ministers may, by order, modify—

(a) a limit on the use of carbon units set by virtue of section 21(1);

(b) any date mentioned in paragraphs (a) to (i) of section 21(2).

(2) The Scottish Ministers may make an order under subsection (1)(a) only if they consider that it is appropriate to do so as a result of—

(a) a modification of the interim target; or

(b) another significant change to the basis on which the limit on the use of carbon units was set.

(3) The Scottish Ministers may make an order under subsection (1)(b) only if they consider it appropriate to do so.

(4) An order under subsection (1)(a) may provide that carbon units of a description specified in the order do not count towards the limit.

23 — Advice before setting or modifying limits on use of carbon units etc.

(1) The Scottish Ministers must, before laying a draft of a statutory instrument containing an order under section 21(1) or 22(1) before the Scottish Parliament, request advice from the relevant body.

(2) If the order under section 21(1) or 22(1) makes provision different from that recommended by the relevant body, the Scottish Ministers must publish a statement setting out the reasons why.

(3) A statement under subsection (2) may be published in such manner as the Scottish Ministers consider appropriate.

PART 2

ADVISORY FUNCTIONS

Advisory body

24 — Meaning of advisory body

(1) The Scottish Ministers may, by order, designate—

(a) a body established under section 25(1); or

(b) such other public body as they consider appropriate,

to exercise the functions mentioned in subsection (3) (the “advisory functions”).
(2) In this Act, the body designated by virtue of subsection (1) is the “advisory body”.

(3) The advisory functions are—
   (a) the function of providing advice, analysis, information and other assistance to the Scottish Ministers in respect of Ministers' duty under section 2(1) and functions under sections 5, 7, 2C, 2D, 9 and 10(4);
   (b) the functions conferred on the advisory body by sections 27 to 32 and 56; and
   (c) such other functions relating to advice on climate change as the Scottish Ministers may confer by an order under subsection (1).

(4) An order under subsection (1) may in particular provide—
   (a) for the conferral of functions on the advisory body relating to advice on climate change;
   (b) for the information that advice must contain;
   (c) for the factors to which the body is to have regard in giving that advice;
   (d) for the period within which the body must give that advice;
   (e) as to whom that advice is to be given;
   (f) for the form and manner in which that advice is to be published and laid before the Scottish Parliament.

(5) In subsection (1)(b), a “public body” means a person or body with functions of a public nature.

Scottish Committee on Climate Change

25 Scottish Committee on Climate Change

(1) The Scottish Ministers may, by order, establish a body for the purpose of exercising the advisory functions.

(2) The body established by virtue of subsection (1) is to be known as the Scottish Committee on Climate Change (the “Committee”).

(3) Schedule 1 makes further provision about the Committee.

(4) An order under subsection (1) may in particular provide—
   (a) for the conferral of functions on the Committee relating to advice on climate change;
   (b) in relation to the status, constitution and proceedings of the Committee as the Scottish Ministers consider appropriate;
   (c) for the information that the Committee’s advice must contain;
   (d) for the factors to which the Committee is to have regard in giving that advice;
   (e) for the period within which the Committee must give that advice;
   (f) as to whom that advice is to be given;
   (g) for the form and manner in which that advice is to be published and laid before the Scottish Parliament.

26 Application of sections 27 to 32 and 56
26 Application of sections 30 to 32 and 56

(1) Sections 27 to 32 and 56 have effect only from—

(a) the day when an order made by the Scottish Ministers under section 24(1) comes into force; or

(b) such later day or days as the Scottish Ministers may specify in an order under that section.

(2) When an order under section 24(1)—

(a) bringing section 29 into effect comes into force, subsection (3) of section 9 ceases to have effect;

(b) bringing section 56 into effect comes into force, subsection (4) of section 55 ceases to have effect.

27 Advice on annual targets etc.

(1) When requested to do so by the Scottish Ministers, the advisory body must provide the Scottish Ministers with advice as regards—

(a) annual targets Ministers propose to set under section 4;

(b) a modification Ministers propose to make under section 6.

(2) When providing advice under subsection (1)(a), the advisory body must express a view—

(a) in the case of annual targets proposed for years in the period 2010–2020, as to whether those targets are consistent with a reduction over that period of net Scottish emissions accounts which would allow the interim target and the 2050 target to be met;

(b) in the case of annual targets proposed for years in the period 2021–2050, as to whether those targets are consistent with a reduction over that period of net Scottish emissions accounts which would allow the 2050 target to be met;

(c) in any case, as to what annual targets are appropriate by reference to the target setting criteria.

(3) When providing advice under subsection (1)(a), the advisory body must also express a view as to—

(a) the extent to which the annual targets should be met—

(i) by taking action to reduce net Scottish emissions;

(ii) by the use of carbon units that in accordance with section 13(2) and regulations under section 13(5) may be credited to the net Scottish emissions account;

(b) the respective contributions towards meeting the annual targets and the domestic effort target that should be made—

(i) by the traded sector of the Scottish economy;

(ii) by the other sectors of the Scottish economy;

(c) the respective contributions towards meeting the annual targets that should be made by—

(i) energy efficiency;
(ii) energy generation;
(iii) land use;
(iv) transport.

(4) When providing advice under subsection (1)(a), the advisory body may also express a view as to any other matter that body considers appropriate including, in particular, as to any sectors of the Scottish economy in which there are particular opportunities for contributions to be made towards meeting annual targets through reductions in emissions of greenhouse gases.

(5) When providing advice under subsection (1)(a), the advisory body must also express a view as to the cumulative amount of net Scottish emissions for the period 2010–2050 that is consistent with a reduction over that period of net Scottish emissions accounts which would allow the 2050 target to be met.

(6) The advisory body must provide advice under this section within such period as the Scottish Ministers may reasonably request.

(7) In subsection (3)(b)(i), "traded sector" means the sectors of the Scottish economy which are covered by trading schemes within the meaning of section 44 of the 2008 Act.

28 Reporting on progress towards targets

(1) The advisory body must, in each year beginning with the specified year, prepare a report setting out that body's views on—

(a) progress towards achievement of—

(i) annual targets;
(ii) the interim target;
(iii) the 2050 target;

(b) whether the annual targets, the interim target or the 2050 target are likely to be achieved;

(c) any further effort which may be necessary to achieve annual targets, the interim target or the 2050 target.

(2) In subsection (1), the "specified year" means such year as the Scottish Ministers may, by order, specify.

(3) A report prepared in a relevant year must also set out the advisory body's views on the matters mentioned in subsection (6).

(4) In subsection (3), the "relevant year" means such year as the Scottish Ministers may, by order, designate in accordance with subsection (5).

(5) The year which may be designated under subsection (4) is the first year following a year for which an annual target has been set (a "target year") or the second year following a target year.

(6) The matters referred to in subsection (3) are—

(a) whether the annual target for the target year was met;
(b) whether the domestic effort target was met in that target year;
(c) the ways in which those targets were or were not met;
(d) the action taken by the Scottish Ministers to reduce net Scottish emissions during that year.

(7) The advisory body must lay a report under this section before the Scottish Parliament no later than—

(a) 31 January in the third year following the target year; or

(b) such other date as the Scottish Ministers may, by order, appoint.

29 Scottish Ministers' response to reports on progress

(1) The Scottish Ministers must lay before the Scottish Parliament a response to a report laid by the advisory body before the Parliament under section 28.

(2) The response to the advisory body's report must be laid before the Parliament no later than—

(a) 31 March in the third year following the year for which an annual target has been set; or

(b) such other date as the Scottish Ministers may, by order, appoint.

30 Duty of advisory body to provide advice or other assistance

When requested to do so by the Scottish Ministers, the advisory body must provide advice, analysis, information or assistance as regards—

(a) the exercise of the Scottish Ministers' functions under this Act;

(b) the exercise of Ministers' functions in relation to climate change other than under this Act;

(c) other matters relating to climate change.

31 Guidance to advisory body

(1) The advisory body must have regard to any guidance given by the Scottish Ministers to it in relation to the exercise of its functions under this Act.

(2) The Scottish Ministers may not give the advisory body guidance as to the content of any advice or report.

(3) The power to give guidance under subsection (1) includes power to vary or revoke the guidance.

32 Power to give directions to advisory body

(1) The Scottish Ministers may, if they consider it appropriate to do so, give the advisory body directions as to the exercise of its functions under this Act.

(2) The Scottish Ministers may not direct the advisory body as to the content of any advice or report.

(3) The power to give directions under subsection (1) includes power to vary or revoke the directions.

(4) The advisory body must comply with any directions given under subsection (1).
PART 3

REPORTING DUTIES

REPORTING AND PLANNING DUTIES

Reporting

33 Reports on emissions reduction targets

(1) The Scottish Ministers must, following each target year, lay before the Scottish Parliament a report in respect of that target year.

(2) The report must state—
   (a) the emissions reduction target for the target year,
   (b) whether the emissions reduction target for the target year has been met,
   (c) the percentage by which the net Scottish emissions account for the target year is lower than the baseline,
   (d) the amount by which the net Scottish emissions account for the target year is lower or higher than the emissions reduction target for that year, and
   (e) the cumulative amount by which the net Scottish emissions accounts are lower or higher than the corresponding emissions reduction targets, calculated by adding each amount by which an account is lower or higher than the corresponding target for each year in the period beginning with 2017 and ending with the target year.

(3) The Scottish Ministers must—
   (a) use target-relevant international carbon reporting practice for the purposes of assessing and reporting on the matters mentioned in subsection (2) and, in doing so, determine each figure and amount in a manner as would be, in so far as reasonably practicable, consistent with the most up-to-date advice provided by the relevant body on the methods to be used for that purpose, and
   (b) specify in the report the methods used to determine each figure and amount in accordance with paragraph (a).

(4) The report under this section must be laid before the Parliament as soon as reasonably practicable after the information to be contained in the report becomes available.

33 Reports on annual targets

(1) The Scottish Ministers must lay before the Scottish Parliament a report in respect of each year in the period 2010–2050 for which an annual target has been set (a “target year”).

(2) The report must state whether the annual target for the target year has been met.

(3) If the annual target has not been met, the report must explain why.

(4) The report must also state whether the domestic effort target has been met in the target year to which the report relates.

(5) If the domestic effort target has not been met, the report must explain why.

(6) The report must also contain the information mentioned in section 34.

(7) The report under this section must be laid before the Parliament no later than 31 October in the second year after the target year.
34 Reports on emissions reduction targets: further content

(1) A report under section 33 must, in addition to the matters required under that section, state—

(a) in relation to net Scottish emissions—

(i) the baseline,

(ii) the aggregate amount of net Scottish emissions of greenhouse gases for the year covered by the report,

(iii) the percentage by which the aggregate amount of net Scottish emissions of greenhouse gases for the year covered by the report is lower than the baseline,

(iv) the percentage by which the aggregate amount of net Scottish emissions of greenhouse gases for the year covered by the report is lower or higher than the equivalent amount for the immediately preceding year, and

(v) the methods used to determine the aggregate amount of net Scottish emissions, together with details of any changes to those methods,

(b) in relation to the net Scottish emissions account—

(i) its amount for the year covered by the report,

(ii) the percentage by which the account for the year covered by the report is lower than the baseline,

(iii) the percentage by which the account for the year covered by the report is lower or higher than the equivalent account for the immediately preceding year, and

(iv) the percentage of any reduction in the account for the year covered by the report, relative to the equivalent account for the immediately preceding year, which is accounted for by reductions in net Scottish emissions of greenhouse gases,

(c) the total amount of carbon units that were—

(i) credited to or debited from the net Scottish emissions account for the year covered by the report,

(ii) purchased by the Scottish Ministers in the year covered by the report, and

(iii) held by the Scottish Ministers immediately after the end of the year covered by the report and which remained available to offset greenhouse gas emissions for other target years, and

(d) for each target year preceding the year covered by the report—

(i) the aggregate amount of net Scottish emissions of greenhouse gases, and

(ii) the amount of the net Scottish emissions account.

(2) The Scottish Ministers must use current international carbon reporting practice for the purposes of assessing and reporting on the matters mentioned in subsection (1).

(3) If the methods used to determine net Scottish emissions change and that change is such as to require adjustment of an amount for an earlier target year, the report must—

(a) specify the adjustment required and state the adjusted amount, and
An adjustment under subsection (3) must, in so far as reasonably practicable, be made in accordance with current international carbon reporting practice.

The report may contain such other information as the Scottish Ministers consider appropriate.

34 Reports on annual targets: content

(1) In respect of each greenhouse gas, the report must—

(a) state the amount of net Scottish emissions for the baseline year;

(b) state the amount of net Scottish emissions for the target year;

(c) state whether the amount of net Scottish emissions represents an increase or decrease compared to the equivalent amount for the previous target year;

(d) identify the methods used to measure or calculate the amount of net Scottish emissions (including in particular any change to those methods).

(2) The report must also set out the aggregate amount for the target year of net Scottish emissions.

(3) The report must also—

(a) state the amount of the net Scottish emissions account for the target year;

(b) state the proportion of the reduction in the net Scottish emissions account which is accounted for by reductions in net Scottish emissions;

(c) state the total amount of carbon units—

(i) that have been credited to or debited from the net Scottish emissions account for the target year;

(ii) that have been purchased in the target year;

(iii) that have been held and not surrendered in the target year;

(d) give details of the number and type of those carbon units.

(4) The report must also—

(a) state the amount of Scottish gross electricity consumption for the target year;

(b) state the amount of Scottish electricity generation for the target year;

(c) state the average greenhouse gas emissions per megawatt hour of electricity generated in Scotland in the target year;

(d) state the average greenhouse gas emissions per megawatt hour, and the estimated lifetime cumulative emissions, of any new electricity generation capacity greater than 50 megawatts approved in Scotland in the target year.

(5) The report for each year in the period 2011–2050 must—

(a) state the amount of the net Scottish emissions account for each preceding target year;

(b) state the cumulative amount of the net Scottish emissions account for the target year and all preceding target years.
(6) If the method of measuring or calculating net Scottish emissions changes and that change is such as to require adjustment of an amount for an earlier target year, the report must specify the adjustment required and state the adjusted amount.

(7) An adjustment under subsection (6) must, in so far as reasonably practicable, be made in accordance with international carbon reporting practice.

(8) If an amount mentioned in subsection (3)(a) or subsection (5)(a) or (b) for an earlier period requires to be adjusted, the report must—

(a) explain why the adjustment is required;
(b) specify the adjustment required; and
(c) state the adjusted amount.

(9) The report may contain such other information as the Scottish Ministers consider appropriate and, in particular, may state the amount of Scottish electricity generation from each source for the target year.

Climate change plan

35 Climate change plan

(1) The Scottish Ministers must lay a climate change plan before the Scottish Parliament—

(a) in the case of the first plan, before the end of the period of 5 years beginning with the day on which this section comes into force,
(b) in the case of each subsequent plan, before the end of the period of 5 years beginning with the day on which the previous plan was laid.

(2) The plan must, in particular, set out—

(a) the Scottish Ministers’ proposals and policies for—

(i) meeting the emissions proposals and policies during the plan period, and
(ii) compensating, during the plan period, for any excess emissions where, in accordance with section 33(2)(e), it is reported in the most recent report laid under that section that the cumulative amount is greater than zero,

(b) those proposals and policies in such chapters on such topics as the Scottish Ministers consider appropriate for the plan, and

(c) the timescales over which those proposals and policies are expected to take effect.

(3) In subsection (2), the “plan period” means the period of—

(a) 15 years beginning with the year after the year in which the draft plan is laid before the Parliament, or
(b) such other period of between 10 and 20 years beginning with that year as the Scottish Ministers may specify in the plan in order that the period ends in the same year as an interim target, the 2050 target or the net-zero emissions target year.

(4) The plan must also set out the Scottish Ministers’ proposals and policies regarding the respective contributions towards meeting the emissions reduction targets that should be made by—

(a) energy efficiency,
(b) energy generation,
(c) land use, and
(d) transport.

(5) The plan must also explain how the proposals and policies set out in the plan are expected to affect different sectors of the Scottish economy.

(6) Each plan under this section—

(a) must contain an assessment of the progress towards implementing proposals and policies set out in the immediately preceding plan, and

(b) may make such adjustments to those proposals and policies as the Scottish Ministers consider appropriate.

(7) For the purposes of subsection (6), “the immediately preceding plan” includes the most recent report on proposals and policies for meeting annual targets which was laid by the Scottish Ministers under section 35 of this Act before the date on which section 19 of the Climate Change (Emission Reduction Targets) (Scotland) Act 2019 came into force.

35A Climate change plan: further procedure

(1) The Scottish Ministers must, before laying a climate change plan under section 35 before the Scottish Parliament—

(a) lay a draft of the plan before the Parliament for a period of 90 days, of which no fewer than 60 must be days on which the Parliament is not dissolved or in recess, and

(b) have regard to—

(i) any representations on the draft plan made to them,

(ii) any resolution relating to the draft plan passed by the Parliament, and

(iii) any report relating to the draft plan published by any committee of the Parliament for the time being appointed by virtue of standing orders.

(2) The Scottish Ministers must, when laying a climate change plan under section 35 before the Parliament, lay a statement setting out—

(a) details of any representations, resolutions or reports mentioned in subsection (1)(b),

(b) the changes (if any) they have made to the plan in response to such representations, resolutions or reports and the reasons for those changes.

35B Climate change plan: annual progress reports

(1) The Scottish Ministers must in each relevant year, lay before the Scottish Parliament a report on each substantive chapter of the most recent climate change plan laid under section 35.

(2) Each report laid under subsection (1) must contain an assessment of progress towards implementing the proposals and policies set out in that chapter.

(3) A report under subsection (1) must be laid by 31 October in each relevant year or, if the Scottish Ministers consider that is not possible because the information needed for the report is not available, as soon as reasonably practicable after that date.
In this section—

(a) “relevant year” means every year after this paragraph comes into force, other than any year in which a climate change plan is laid before the Scottish Parliament under section 35(1), and

(b) “substantive chapter” means a chapter of the climate change plan which is included in the plan by virtue of section 35(2)(b) and which contains distinct proposals and policies for meeting the emissions reduction targets during the plan period.

Until such time as the first climate change plan is laid under section 35, subsection (1) is to be read as if it—

(a) applied in relation to the most recent report on proposals and policies for meeting annual targets which was laid by the Scottish Ministers under section 35 of this Act before the date on which section 19 of the Climate Change (Emission Reduction Targets) (Scotland) Act 2019 came into force, and

(b) required a report on each chapter of that most recent report which contains distinct proposals and policies for meeting the targets to which the report relates during the period covered by the report.

35 Reports on proposals and policies for meeting annual targets

(1) As soon as reasonably practicable after making an order under section 4(1) setting annual targets, the Scottish Ministers must lay before the Scottish Parliament a report containing the following information.

(2) The Scottish Ministers must, before laying a report under this section before the Scottish Parliament, lay a draft of the report before the Parliament.

(3) The Scottish Ministers may not lay the report before the expiry of the period for Parliamentary consideration.

(4) In subsection (3), the “period for Parliamentary consideration” means the period of 60 days, of which no fewer than 30 must be days on which the Parliament is not dissolved or in recess.

(5) The Scottish Ministers must, before laying the report before the Parliament, have regard to—

(a) any representations on the draft report made to them;

(b) any resolution relating to the draft report passed by the Parliament; and

(c) any report relating to the draft report published by any committee of the Parliament for the time being appointed by virtue of standing orders.

(6) The Scottish Ministers must, when laying the report before the Parliament, lay a statement setting out—

(a) details of any representations, resolutions or reports mentioned in subsection (5)

(b) the changes (if any) they have made to the report in response to such representations, resolutions or reports and the reasons for those changes.

(7) The Scottish Ministers must, as soon as reasonably practicable after laying a report under this section, and in so far as reasonably practicable, make a statement to the Parliament relating to the report.
The report must, in particular, set out—

(a) the Scottish Ministers’ proposals and policies for meeting the annual targets;

(b) how those proposals and policies are expected to contribute towards the achievement of the interim target, the 2050 target and, in each target year, the domestic effort target;

(c) the timescales over which those proposals and policies are expected to take effect.

The report must also set out the Scottish Ministers’ proposals and policies regarding the respective contributions towards meeting the annual targets that should be made by—

(a) energy efficiency;

(b) energy generation;

(c) land use;

(d) transport.

The report must also explain how the proposals and policies set out in the report are expected to affect different sectors of the Scottish economy.

The second and each subsequent report under this section—

(a) must contain an assessment of the progress towards implementing proposals and policies set out in earlier reports;

(b) may make such adjustments to those proposals and policies as the Scottish Ministers consider appropriate.

Reports on proposals and policies where annual targets not met

This section—

(a) applies if the Scottish Ministers lay a report under section 33 which states that an annual target has not been met or that the domestic effort target has not been met in the target year to which the report relates;

(b) does not apply if that report relates to the annual target for 2050.

As soon as reasonably practicable after the report referred to in subsection (1)(a) has been laid, the Scottish Ministers must lay a report before the Scottish Parliament setting out proposals and policies to compensate in future years for the excess emissions.

Other reporting provisions

Reports on emissions attributable to Scottish consumption of goods and services

The Scottish Ministers must lay before the Scottish Parliament a report in respect of each year in the period 2010–2050 containing the following information.

The report must, in so far as reasonably practicable, set out the emissions of greenhouse gases (whether in Scotland or elsewhere) which are produced by or otherwise associated with the consumption and use of goods and services in Scotland during that year.

The report may also contain such other information as the Scottish Ministers consider appropriate.
38 Reports on impact on emissions of exercise of electricity generation-related functions

(1) The Scottish Ministers must lay before the Scottish Parliament a report in respect of each year in the period 2010–2050 containing the following information.

(2) The report must, in so far as reasonably practicable, set out the impact on net Scottish emissions during that year resulting from the exercise by the Scottish Ministers of the functions conferred on them by virtue of any enactment relating to electricity generation.

39 Report on progress towards meeting the interim target

(1) The Scottish Ministers must, no later than 31 December 2015, lay before the Scottish Parliament a report on progress towards meeting the interim target.

(2) The report must, in particular, state the progress that has been made in reducing net Scottish emissions and indicate whether this progress is consistent with a reduction over the period 2010–2020 of net Scottish emissions accounts which would allow the interim target and the 2050 target to be met.

40 Report on the interim target

(1) The Scottish Ministers must lay before the Scottish Parliament a report containing the following information in respect of the year 2020.

(2) The report must state whether the interim target has been met.

(3) If the interim target has not been met, the report must explain why.

(4) In respect of each greenhouse gas, the report must state the amount of net Scottish emissions for 2020.

(5) The report must also—

(a) state the amount of the net Scottish emissions account for 2020;
(b) state the cumulative amount of the net Scottish emissions account for the period 2010–2020;
(c) state the total amount of carbon units—

(i) that have been credited to or debited from the net Scottish emissions account for 2020;
(ii) that have been purchased in 2020;
(iii) that have been held and not surrendered in 2020;
(d) give details of the number and type of those carbon units.

(6) In subsections (4) and (5), the amount means the amount set out in the report for 2020 made under section 33.

(7) The report may contain such other information as the Scottish Ministers consider appropriate.

(8) The report under this section must be laid before the Parliament no later than 31 October 2022.
41  Report on the 2050 target

(1) The Scottish Ministers must lay before the Scottish Parliament a report containing the following information in respect of the year 2050.

(2) The report must state whether the 2050 target has been met.

(3) If the 2050 target has not been met, the report must explain why.

(4) In respect of each greenhouse gas, the report must state the amount of net Scottish emissions for 2050.

(5) The report must also—
   (a) state the amount of the net Scottish emissions account for 2050;
   (b) state the cumulative amount of the net Scottish emissions account for the period 2010–2050;
   (c) state the total amount of carbon units—
      (i) that have been credited to or debited from the net Scottish emissions account for 2050;
      (ii) that have been purchased in 2050;
      (iii) that have been held and not surrendered in 2050;
   (d) give details of the number and type of those carbon units.

(6) In subsections (4) and (5), the amount means the amount set out in the report for 2050 made under section 33.

(7) The report may contain such other information as the Scottish Ministers consider appropriate.

(8) The report under this section must be laid before the Parliament no later than 31 October 2052.

42  Reports: provision of further information to the Scottish Parliament

(1) Where the Scottish Ministers lay a report mentioned in subsection (2) report on emissions reduction targets under section 33 before the Scottish Parliament, they must—
   (a) immediately send a copy of the report to the persons who convene and chair such committees of the Scottish Parliament as are for the time being appointed by virtue of standing orders; and
   (b) as soon as reasonably practicable after doing so, and in so far as reasonably practicable, make a statement to the Parliament relating to the report.

(1A) If the emissions reduction target for the target year covered by the report has not been met, the statement made under subsection (1)(b) must explain why.

(2) Those reports are reports under—
   (a) section 33(1) (report on annual target);
   (b) section 36(2) (report on proposals and policies to compensate for excess emissions);
   (c) section 40(1) (report on interim target);
   (d) section 41(1) (report on 2050 target).
Where the Scottish Ministers lay a report referred to in subsection (2)(a) report on emissions reduction targets under section 33, they must also, as soon as reasonably practicable after doing so, and in so far as reasonably practicable, attend, if invited, the proceedings of any such committees of the Scottish Parliament as are for the time being appointed by virtue of standing orders, for the purposes of giving evidence on the report.

The Scottish Ministers must have regard to—

(a) any resolution passed by the Scottish Parliament;
(b) any report published by any committee of the Parliament for the time being appointed by virtue of standing orders, relating to the content of any report referred to in subsection (2), report on emissions reduction targets laid under section 33.

Further provision about reporting duties

The Scottish Ministers may, if they consider it appropriate to do so, by order, make further provision imposing duties on themselves to report to the Scottish Parliament.

An order under subsection (1) may in particular—

(a) provide for the information to be provided under the duties;
(b) provide for the period in relation to which that information is to be provided;
(c) provide for the period within which that information is to be provided.

Part 4
DUTIES OF PUBLIC BODIES RELATING TO CLIMATE CHANGE

[sections omitted from Keeling Schedule as no amendments made by Bill]

Part 5
OTHER CLIMATE CHANGE PROVISIONS

[sections omitted from Keeling Schedule as no amendments made by Bill]

Part 6
GENERAL AND MISCELLANEOUS

Public engagement

The Scottish Ministers must prepare and publish a strategy (a “public engagement strategy”) setting out the steps they intend to take to—

(a) inform persons in Scotland about the targets specified by virtue of this Act;
(b) encourage them to contribute to the achievement of those targets.

The public engagement strategy must, in particular, identify actions which persons in Scotland may take to contribute to the achievement of the targets referred to in subsection (1)(a).

The public engagement strategy must be published no later than 31 December 2010.
(4) The Scottish Ministers—
   (a) may, from time to time; and
   (b) must, before the end of the period mentioned in subsection (5), review the strategy.
(5) The period referred to in subsection (4)(b) is the period of 5 years beginning with the day on which—
   (a) the strategy is first published; or
   (b) the strategy was last reviewed under subsection (4).
(6) Where, following a review under subsection (4), the Scottish Ministers vary the public engagement strategy, they must, as soon as reasonably practicable after so doing, publish the strategy as so varied.
(7) A strategy published under subsection (6) must contain an assessment of the progress made towards implementing the steps set out in earlier strategies.
(8) The public engagement strategy may be published in such manner as the Scottish Ministers consider appropriate.
(9) The Scottish Ministers must lay the public engagement strategy before the Scottish Parliament as soon as reasonably practicable after it is published.

92 Sustainable development

(1) The persons mentioned in subsection (2) must, in exercising functions conferred on them by virtue of this Act, take into account the need to do so in a way that contributes to the achievement of sustainable development.
(2) Those persons are—
   (a) the Scottish Ministers;
   (b) the advisory body.

93 Equal opportunities

(1) The persons mentioned in subsection (2) must exercise their functions under this Act in a manner which encourages equal opportunities and in particular the observance of the equal opportunities requirements.
(2) Those persons are—
   (a) the Scottish Ministers;
   (b) the advisory body;
   (c) public bodies (as defined in section 44(2)).
(3) In this section, “equal opportunities” and the “equal opportunities requirements” have the same meanings as those expressions have in section L2 of Part 2 of Schedule 5 to the Scotland Act 1998 (c.46).
Impact of budget proposals on emissions

(1) The Scottish Ministers must, at the same time as laying before the Scottish Parliament any document setting out draft proposals for the use of resources in any financial year, lay before the Scottish Parliament a document describing the direct and indirect impact on greenhouse gas emissions of the activities to be funded by virtue of the proposals.

(2) In this section, “use of resources” has the meaning given in section 1(3) of the Public Finance and Accountability (Scotland) Act 2000 (asp 1).

Crown application

(1) This Act and any orders and regulations made under it bind the Crown.

(2) No contravention by the Crown of any provision made by virtue of this Act makes the Crown criminally liable.

(3) But the Court of Session may, on the application of any public body or office-holder having responsibility for enforcing that provision, declare unlawful any act or omission of the Crown which constitutes such a contravention.

(4) Despite subsection (2), any provision made by virtue of this Act applies to persons in the public service of the Crown as it applies to other persons.

Subordinate legislation

(1) Any power conferred by this Act on the Scottish Ministers to make orders or regulations is exercisable by statutory instrument.

(2) Any such power—

(a) may be exercised so as to make different provision for different cases or descriptions of case or for different purposes;

(b) includes power to make such consequential, incidental, supplementary, transitory, transitional or saving provision as the Scottish Ministers consider appropriate.

(3) An order or regulations under this Act may modify any enactment (including this Act).

(4) Subject to subsections (5) to (8) and to section 97, no statutory instrument containing an order or regulations under this Act (other than an order under section 100(2)) may be made unless a draft of the instrument has been laid before, and approved by resolution of, the Scottish Parliament.

(5) A statutory instrument containing an order mentioned in subsection (6) or regulations mentioned in subsection (7) is subject to annulment in pursuance of a resolution of the Scottish Parliament.

(6) Those orders are orders under—

(a) section 19(1)(b);

(b) section 46(1);

(c) paragraph 2(2) of schedule 1.

(7) Those regulations are—

(a) the second or subsequent regulations under section 13(5) (other than regulations which make provision altering the amount by which a carbon unit credited or debited to the net Scottish emissions account for a period reduces or, as the case may be, increases the net Scottish emissions account for that period);
(aa) regulations under section 13A(1) that do not propose an increase to any limit on the maximum amount of carbon units that may be credited to the net Scottish emissions account for a year.

(b) the second or subsequent regulations under section 20(1) (other than regulations which make provision specifying a carbon unit of a kind not previously specified in regulations under that section);

(c) regulations under section 84(1) which make provision about one or more of the following matters only—
   (i) the deposits mentioned in section 84(7)(c);
   (ii) the form and content of notices mentioned in section 84(7)(i);
   (iii) setting the registration fees mentioned in section 84(7)(l);

(d) regulations under Chapter 5 of Part 5 which make provision about the matter mentioned in section 89(4) only.

(8) Subsection (5) does not apply to an order or regulations which includes provision modifying an Act or an Act of the Scottish Parliament.

97 Subordinate legislation: pre-laying procedure

(1) This section applies where the Scottish Ministers propose to lay before the Scottish Parliament a draft of a statutory instrument containing the first regulations under section 84 or 88 (other than a draft containing regulations mentioned in section 96(7)(c) or (d) to which section 96(5) applies).

(2) The Scottish Ministers must, before doing so, lay before the Parliament—
   (a) a copy of the proposed regulations; and
   (b) a statement setting out their reasons for proposing to make those regulations.

(3) The Scottish Ministers must, when laying such a copy, specify a period (the “representation period”) during which representations on the proposed regulations may be made to them.

(4) The representation period must be at least 90 days, of which no fewer than 30 must be days on which the Parliament is not dissolved or in recess.

(5) The Scottish Ministers must, as soon as reasonably practicable after laying a copy of the proposed regulations, publicise them in such manner as they consider appropriate.

(6) The Scottish Ministers must, before laying the proposed regulations before the Parliament, have regard to—
   (a) any representations on the proposed regulations made to them;
   (b) any resolution relating to those regulations passed by the Parliament; and
   (c) any report relating to those regulations published by any committee of the Parliament for the time being appointed by virtue of standing orders, before the expiry of the representation period.

(7) The Scottish Ministers must, when laying such proposed regulations, lay a statement setting out—
   (a) details of any representations, resolutions or reports mentioned in subsection (6);
(b) the changes (if any) they have made to the proposed regulations in response to such representations, resolutions or reports and the reasons for those changes.

(8) In this section, “proposed regulations” means a draft of a statutory instrument to which subsection (1) applies.

98 Interpretation

In this Act—

“additional greenhouse gas” has the meaning given by section 12(2);

“advisory body” has the meaning given by section 24(2);

“advisory functions” has the meaning given by section 24(3);

“annual target” has the meaning given by section 3(3);

“annual target” has the meaning given by section 3(6);

“authorised person” has the meaning given by section 80(5);

“baseline” has the meaning given by section 11(1);

“baseline year” means—

(a) in relation to a greenhouse gas mentioned in subsection (2) of section 11, the year mentioned in paragraph (a), (b), (c), (d) or, as the case may be, (e) of that subsection;

(b) in relation to an additional greenhouse gas, any year designated by virtue of section 12(3);

“carbon unit” has the meaning given by section 20(4);

“climate change duties” has the meaning given by section 44(4);

“Committee” means the Scottish Committee on Climate Change;

“current international carbon reporting practice” has the meaning given by section 19(2);

“deposit and return scheme” means a scheme established by virtue of section 84(1);

“domestic effort target” has the meaning given by section 8(2);

“emissions” has the meaning given by section 17(1);

“emissions reduction target” means—

(a) an annual target,
(b) an interim target,
(c) the 2050 target, or
(d) if regulations under section A1(2) setting a net-zero emissions target year have been made, the net-zero emissions target.

“energy efficiency” has the meaning given by section 60(9);

“greenhouse gas” has the meaning given by section 10(1);

“interim target” has the meaning given by section 2(2);

“international carbon reporting practice” has the meaning given by section 19(1).
“local authority” means a council constituted under section 2 of the Local Government etc. (Scotland) Act 1994 (c.39);

“monitoring body” has the meaning given by section 47(2);

“net Scottish emissions” has the meaning given by section 17(1);

“net Scottish emissions account” has the meaning given by section 13(1);

“net-zero emissions target” has the meaning given by section A1(1);

“net-zero emissions target year” has the meaning given by section A1(2);

“packaging” has the meaning given by section 83(4);

“public body” (except in Part 4 and section 93) has the meaning given by section 24(5);

“relevant body” has the meaning given by section 20A(1);

“relevant public body” has the meaning given by section 44(5);

“recycling” has the meaning given by section 78(4);

“renewable sources” has the meaning given by section 60(9);

“Scottish Committee on Climate Change” has the meaning given by section 25(2);

“Scottish emissions” has the meaning given by section 17(1);

“Scottish removals” has the meaning given by section 17(1);

“SEPA” has the meaning given by section 79(6);

“target year” means a year for which an annual target has been set;

“target year” means a year for which an emissions reduction target has been set.

“target-relevant international carbon reporting practice” has the meaning given by section 19(2);

“target-setting criteria” means the matters mentioned in section 4(4)(b) to (j) 2B(1);

“the 1990 Act” means the Environmental Protection Act 1990 (c.43);

“the 2008 Act” means the Climate Change Act 2008 (c.27);

“the 2050 target” has the meaning given by section 1(2);

“UK Committee on Climate Change” has the meaning given by section 5(8) 20A(2);

“waste” has the meaning given by section 78(4).

99 Minor and consequential modifications

Schedule 2 makes minor modifications and modifications consequential on the provisions of this Act.

100 Short title and commencement

(1) This Act may be cited as the Climate Change (Scotland) Act 2009.
(2) This Act (other than this section and sections 27 to 32, 56, 70 and 96) comes into force on such day (in the case of sections 44 to 52, being no later than 18 months after the day on which the Bill for this Act receives Royal Assent) as the Scottish Ministers may, by order, appoint.

(3) Sections 27 to 32 and 56 come into force in accordance with section 26.

(4) Section 70 comes into force on the day after the Bill for this Act receives Royal Assent.

(5) Different days may, under subsection (2), be appointed for different purposes.

SCHEDULE 1
(introduced by section 25(3))

THE SCOTTISH COMMITTEE ON CLIMATE CHANGE

[schedule omitted from Keeling Schedule as no amendments made by Bill]

SCHEDULE 1A
(introduced by section 88A(5))

FIXED PENALTIES

[schedule omitted from Keeling Schedule as no amendments made by Bill]

SCHEDULE 2
(introduced by section 99)

MINOR AND CONSEQUENTIAL MODIFICATIONS

[schedule omitted from Keeling Schedule as no amendments made by Bill]