Greenhouse Gas Emissions Targets Bill
Consultation Paper

The ‘Big Ask’ for Scotland

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**Foreword**

We are living through one of the most crucial periods in the history of humanity. There are two options we can take as a global society. The first is to respond with immediate action to the threat of Climate Change. The second is to fail to do enough and to gamble with the future of the planet.

2005 is a crux point as the G8 meets in Scotland to decide on its approach to tackling Climate Change. All eyes will be on Scotland as a developed country with vast renewable resources to see how Climate Change can be tackled. The challenge is straightforward. If we cannot tackle Climate Change in Scotland then what hope is there for the rest of the world? Failure is unthinkable.

As Deputy Convenor of the Scottish Parliament Environment and Rural Development Committee I have recently been involved in a committee inquiry into Climate Change.

The Committee heard that our global climate has already begun to change and the possible impacts on humankind are truly frightening. I have seen first hand the massive erosion that the intense January storms gouged out on the island of Vatersay as well as the dramatic flooding experienced in Perthshire. People in countries such as Bangladesh face the potential of far worse destruction with little of the wealth of Scotland to help them weather the storm.

Recent governments both north and south of the border have been good at voicing their concern about Climate Change and the UK has even set some aspirational targets for reducing the pollution that causes it, but the bare fact is Climate change pollution is not being reduced fast enough. I believe that governments must be made to turn their concerned words into real action.

Just as our Environment committee inquiry came to an end, Friends of the Earth launched their ‘Big Ask’ campaign - asking MPs for a law to require the UK Government to reduce Greenhouse gases by 3% every year until 2050. This initiative for a new law at Westminster is very timely and I believe, because many powers that can be used to tackle Climate Change are now devolved to the Scottish Parliament, that we need an equivalent law in Scotland to require our own Scottish Executive to take action - hence the title of this consultation document is the 'Big Ask for Scotland'.

This paper outlines a draft proposal lodged in my name, for a bill that would legally require the Executive to set targets for reducing the pollution that contributes to climate change and to take action towards meeting those targets.

I would like to invite views from individuals, organisations and businesses concerned about Climate Change to comment on this proposal for legislation. Details of how to contribute are given at the end.

Yours sincerely

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Executive summary

Pollution from burning coal, oil and gas is causing the global climate to change. The impacts of Climate Change are beginning to be felt across the world from extreme weather events of increasing intensity and frequency to melting of polar ice-caps. Scotland has been affected by the kind of severe weather associated with Climate Change. Predictions are that Climate Change will worsen as pollution builds up and average global temperatures continue to increase.

UN scientists warn that Global emissions of Greenhouse gases must start falling within the next 10-15 years if world temperatures are to rise by no more than 2°C above pre-industrial levels and prevent severe Climate Change. In a bid to meet an international target of keeping the average global temperature rise to no more than 2°C, governments signed up to the UN Kyoto protocol which aims to stabilise Greenhouse gases. Under this protocol the UK Government agreed to a target of 12.5% reduction in the 1990 level of UK emissions of greenhouse gases by 2012. The UK government also announced its’ own voluntary target to reduce carbon dioxide emissions by 20% by 2010.

However, during the last two terms of the current UK Government, carbon dioxide emissions rose by about 3 per cent and the Government has now said it will fail to meet its’ 20% carbon dioxide reduction target.

The ‘Big Ask’ campaign led by Friends of the Earth has called for a new law to be passed at Westminster which would require the UK Government to set a standing annual, year-on-year, target to reduce Climate Change emissions. In Scotland many powers relating to Climate Change pollution are no longer under the control of the UK Government but lie with Scottish Executive. The Scottish Executive has so far rejected calls for it to set a Scottish target for reducing Climate Change pollution.

The Scottish Parliament’s Environment Committee’s recent Inquiry into Climate Change recommended that: ‘The Executive should develop a set of clear and challenging benchmarks to provide a detailed route map to guide action towards this long-term target. A comprehensive independent audit of progress under the Scottish programme should be commissioned by the Executive and repeated every five years. The Executive should also report annually to the Parliament on its progress towards meeting targets.’

To complement the ‘Big Ask’ bill proposal at Westminster and in-line with the Environment Committee’s recommendations, this document publicly consults on a ‘Draft proposal for a bill to require the Scottish Executive to establish targets to reduce greenhouse gas emissions that contribute to climate change, by a specified date and to take steps including the preparation of an action plan to ensure those targets are met and to report on progress.’

The legislation proposed would legally require the Executive to set a Scottish targets for reducing Climate Change pollution. The legislation would also require the Executive to publish a plan of action for the purpose of meeting these targets and also to report on its’ progress.

Comments are invited on this proposal for legislation.
Introduction

Climate change is increasingly acknowledged as the most pressing and vital issue that faces the modern world. The effects of Climate Change are already being felt across the world, from the melting of polar ice caps and glaciers, to extreme weather events including unusually severe flooding and droughts. The extent of Climate Change and the impact on our daily lives are predicted to worsen.5

UN Secretary General, Kofi Annan told University graduates; “Climate change….may well be the biggest challenge that your generation will face”4 and UK Prime Minister Tony Blair has said; ‘I believe…the world’s greatest environmental challenge [is] climate change.’7

The rapidity of the change in climate that the world is presently experiencing is caused by human activity. Through the burning of fossil fuels - oil, gas and coal - for energy, invisible greenhouse gases are being released into the atmosphere. These gases trap the sun’s heat causing the average global temperature to increase. This global warming is disturbing the world’s normal weather patterns and this is known as Climate Change. As greenhouse gases accumulate in the atmosphere they will cause further global warming and more extensive Climate Change.

It is now universally recognised that emissions of the greenhouse gases that are causing Climate Change must be reduced. There is much that individuals can do to reduce Climate Change gas emissions but governments have a central role in guiding the behaviour of individuals, organisations and businesses to take action to reduce emissions.

Under the UN Kyoto protocol, the UK Government has agreed to a medium-term target to reduce Climate Change gas emissions by 12.5% on 1990 levels by 2012 and the Scottish Executive has pledged that it will make an ‘equitable contribution’ towards this UK target, although it has not defined what this means in practice. However both administrations are presently failing to achieve the reduction in Climate Change gas emissions that is required to meet the target of 80% reduction in 1990 levels by 2050 that the Intergovernmental Panel on Climate Change advises will be necessary to prevent the worst effects of Climate Change. In Scotland Climate Change emissions decreased by only 5.6% over the twelve years between 1990 and 2002.

In May 2005 the Environment and Rural Development Committee of the Scottish Parliament held an Inquiry into Climate Change policy in Scotland and concluded: ‘Climate Change is an extremely serious challenge for all spheres of government, and for public sector bodies, businesses and individuals. A radical response on a huge, almost unprecedented, scale must start to be entrenched in policy now. A massive possibility for change exists at government, business and individual levels, given the right policy levers and leadership.’8

Significantly, there was a recommendation by the Committee that the Executive should set its own voluntary targets for Climate Change emissions reduction. The Executive are obliged to respond to the Committee’s report in due course and as the Executive has resisted calls for five years for it to set targets it may refuse the Committee’s recommendations.9
At the same time as the Environment Committee’s Inquiry report was published, a cross-party group of MPs proposed legislation at Westminster, under the campaign slogan ‘the Big Ask’. This new law would require the UK government to set a target for year-on-year reductions in the pollution that contributes to Climate Change.

Many powers over Climate change emissions are devolved to the Scottish Parliament. In order to ensure that the Scottish Executive sets a similar Climate Change emissions reduction target, Green MSP Mark Ruskell is now proposing an equivalent new law in Scotland. In addition to setting a target, it is envisaged that the Scottish Executive should also be required to prepare a plan to ensure its’ target is met and to report regularly on its’ progress in achieving this target.

The Draft proposal is ‘for a bill to require the Scottish Executive to establish targets to reduce greenhouse gas emissions that contribute to climate change, by a specified date and to take steps including the preparation of an action plan to ensure those targets are met and to report on progress.’

This consultation document sets out the background, the rationale behind this bill proposal and invites responses from individuals, organisations and businesses.
Background

Science of Climate Change

Climate change is occurring due to an increase in carbon dioxide ($CO_2$) and other gases in the atmosphere which are trapping heat and warming the planet, often known as the greenhouse effect or global warming. These greenhouse gases come mainly from burning fossil fuels - oil, coal and gas - but other gases such as methane ($CH_4$) and fluorinated refrigerants also have significant potential to cause global warming.\(^{10}\)

The warming of the atmosphere is affecting weather patterns around the world and the effects are already being felt. Unpredictable and extreme weather events, including storms, floods and droughts are increasing in frequency. Global average temperatures are rising and Arctic and Antarctic ice caps are melting. In the longer term, sea levels are predicted to rise and changes in ocean currents may take place with the possibility of further dramatic, runaway climatic change.

By studying ice cores and deep ocean sediments, scientists have built up a good understanding of the global concentrations of carbon dioxide and average temperatures for the past 220,000 years. For the whole of that period, levels of carbon dioxide fluctuated between 180 and 280 parts per million by volume (ppmv) while average temperatures varied between 10 and 15°C. Average levels during ice ages were around 200 ppmv and during interglacial periods rose to around 280 ppmv.

There has always been a strong correlation between atmospheric levels of carbon dioxide and average global temperature.\(^{11}\) However, since the advent of the industrial revolution just over 200 years ago, human activity has increased carbon dioxide levels by almost 35% to 376 ppmv and average temperatures have risen by almost one degree Celsius. Both of these increases have accelerated since the 1950s. As well as atmospheric carbon levels being higher than at any time in the last quarter of a million years, the rate of change of levels of carbon dioxide is many times faster than any previous change. It is without doubt that that the current rapid global warming causing Climate Change is being caused by human activity.\(^{12, 13, 14, 15}\)

Climate experts are warning that the damaging effects of Climate Change are already increasing at a faster rate than had previously been predicted.\(^{16}\) Figures released from the Mauna Loa observatory in Hawaii indicate an increase in atmospheric levels of greenhouse gases that cannot be explained by emissions directly from human sources.\(^{17}\) Although it remains to be seen if this is an aberration or the start of a trend, some scientists have raised the possibility that this is an example of non-linear positive feedback - Climate Change causing the earth to absorb less carbon than previously (or release carbon from existing reservoirs), leading to yet more Climate Change. If this proves to be the case, even the most pessimistic of current predictions of Climate Change and the damage that may be caused by it, may prove to be wildly optimistic.\(^{18}\)

The United Nations Intergovernmental Panel on Climate Change (IPCC) warns that average global temperatures may rise by up to 5.8°C by the end of this century.\(^{19}\) Last century average global temperatures rose by around 0.6°C Celsius and already there are tangible effects of Climate Change. Global emissions of Greenhouse gases must start falling within the next 10-15 years if world temperatures are to rise by no more than 2°C above pre-industrial levels and prevent severe Climate Change.\(^{20}\)
Current situation

Climate change is widely recognised as the most serious threat to the future wellbeing of humankind on our planet. Sir David King, the UK Government’s Chief Scientific Advisor, stated in an article in the journal Science in January 2004 that: "In my view, Climate Change is the most severe problem that we are facing today".  

In recent years Scotland has been battered by extreme weather events: flooding in Tayside, the Borders and Dumfries and Galloway was accompanied by gales gusting to over 100 mph. Phone and power lines have been brought down and ferry, rail and road transport has been disrupted. Most seriously, several people are known to have died as a direct result of these storms.  

Speaking about the most recent extreme weather, a climate expert from the Scottish Environment Protection Agency said: "Climate Change is the greatest environmental threat facing us all. It is real, it is with us now, it is doing real damage and it is going to get worse. We could expect to see flooding incidences rise by up to 10 times by 2080. There is also an increasing realisation that over the next few decades Climate Change could reach a tipping point where it becomes out of control, with the earth itself generating carbon dioxide unchecked and uncontrolled. To avoid this possibility we must adapt and drive down emissions by as much as 70%, and we need to act now."  

The flooding that Scotland is currently experiencing does appear to be part of a wider pattern. In the summer of 2004 Scotland and other parts of the UK suffered flooding and landslides. The British Isles have always experienced heavy rainfall, but there is evidence that an increase in extreme weather events such as torrential rainfall and storms is linked to global Climate Change. No single weather event can ever be definitively linked to Climate Change, but climatologists have long predicted that the incidence and severity of such extreme weather events are set to increase dramatically as Climate Change worsens.  

Extreme weather events in the British Isles are small scale compared to the rest of the world. During last year the Caribbean and Southern United States endured a series of devastating tropical storms that cost hundreds of lives and caused billions of dollars worth of damage. As sea surface temperatures rise, the damage caused by hurricanes and other tropical weather events is likely to increase still further.
Impacts of Climate Change

The impacts of Climate Change are not only environmental. There are likely to be huge social and economic costs on an unprecedented scale. A recent report published by The Working Group on Climate Change and Development, a coalition of environmental and development organisations, states that Climate Change threatens to ‘reverse human development’ and put the Millennium Development Goals (international targets to alleviate global poverty) out of reach.\(^{31}\)

A report completed at the end of 2003 for the US Pentagon painted a chilling picture of what a world changed by global warming might look like, as early as 2020.\(^ {32}\) The report endorses the very real possibility that, rather than a gradual change in climate as has been suggested by some, we may see a ‘tipping point’ reached, leading weather conditions to lurch from one state to another in the space of a decade. Implicated in this is the North Atlantic ‘conveyor’, one of the major ocean current systems that regulates global climate, which may collapse leading to plunging temperatures and Siberian conditions in northern Europe including Scotland (see more detail under ‘Impacts on Scotland’ below).

The Pentagon report also considered it plausible that the following scenarios could take place over the next couple of decades:

- More severe storms and typhoons, especially impacting on low-lying island nations;
- Key coastal cities becoming uninhabitable;
- Increase in intensity of ocean waves, damaging coastal communities;
- Millions of people put at risk of flooding;
- Disruption to worlds fisheries;

The report, which specifically examines implications for US security, concludes that Climate Change could lead to ‘global conflict and economic malaise’.

As Climate Change affects our environment so it will affect societies and economies. There are predictions of more geopolitical instability and possibly even wars caused by water shortages, famine and flooding and of increases in environmental refugees from areas affected by these.

A recent report for a coalition of 21 organisations including Oxfam, Christian Aid and Actionaid, entitled ‘Up in Smoke?’ concluded:

‘Climate Change could reverse whatever achievements in development that may have been won in Africa in the last few decades.’\(^ {33}\)

Unless global society takes urgent action to dramatically reduce the emissions of greenhouse gases that lead to Climate Change, there is a risk it is left too late. Climate Change is a global problem, but all countries have a responsibility to act at a local and regional level to address this issue. Although Scotland a small country, Scotland could lead the way in tackling Climate Change by setting a visionary example to other countries. Yet, not enough is being done in Scotland to address either the causes or the likely effects of Climate Change.\(^ {34}\)
Impacts of Climate Change on Scotland

Although there is no longer any credible doubt that Climate Change caused by man is real and happening now, accurate predictions about the nature of impacts are difficult to make with certainty. In particular, high-impact climate events such as a collapse of the North Atlantic thermohaline circulation (Gulf stream) are extremely difficult to predict with any certainty at all. Sophisticated computer models suggest that such a collapse cannot be ruled out, but climatologists have very little confidence as to when such a collapse could take place. The possible impacts of such a collapse are outlined below.

Currently, scientists have more confidence in the short to medium term predictions made about Scotland’s climate, and the likely socio-economic consequences of our changing climate.

Because there are uncertainties about the extent of future global carbon emissions and to take account of the range of possibilities, a number of scenarios have been modelled. A report by the Scottish Executive’s Central Research Unit used the so called UKCIP98 scenarios, and made the following predictions of Scotland’s climate over the next century.

- Scotland will become warmer, with winter temperatures rising by between 1.5 – 2.5°C and summer temperatures rising by up to 3.5°C (and possibly by up to 4°C in Central Scotland).
- Precipitation will increase in winter and decrease in summer: winter rainfall will increase by up to 35%; warmer winter temperatures, however, will mean that snowfall will decrease by up to 90%. Summer rainfall will fall by up to 50%.

These environmental effects could have impacts on Scotland society and economy. A reduction in snowfall of up to 90% would have a devastating impact on Scottish ski resorts. The owners of the Glencoe and Glenshee ski areas are already feeling the effects of warmer winters and reduced snow cover. While warmer, drier summers may improve other parts of the Scottish tourism sector, a higher incidence of midges and other pests may have an adverse effect.

One of the most significant aspects of a warming Scotland is the increased risk of flooding that will follow dramatic increases in winter rainfall. It has been predicted that 1 in 12.5 Scottish homes will be at risk from flooding, with consequences for the insurability of such properties. An insurance industry agreement to provide reasonable cost household flood insurance anywhere in Britain expired two years ago and many insurers are already refusing cover for housing in vulnerable areas. A house in a known flood zone that cannot be insured is effectively worthless. The economic consequences of Climate Change such as these will be far reaching.

In addition to an increased risk of flooding, other extreme weather events are likely to increase in frequency and severity. Climate models indicate an increased risk of severe windstorms and a shift in their tracks that would bring them hurricane force winds across Scotland every winter. The Hadley Centre reports a “significant increase” in UK winter storms experienced over recent years. Just as with the flooding scenario described above, the insurance implications of severe windstorms will have a damaging effect on Scotland’s economy as well as causing trauma and hardship to the affected population.
Scotland’s landscapes and wildlife are also likely to be affected by our changing climate. Some bird species such as the dotterel and snow bunting are at severe risk and may even disappear completely. High altitude landscapes support plants and animal species that only have a narrow climatic range in which they can survive. Even a minor change in temperature conditions could push such species beyond this range and result in their local extinction.\footnote{The climatic and socio-economic impacts described so far would be consequence of a warming Scotland. A high-impact, low probability (or unknown probability) event that would result in a colder Scotland is a collapse in the ocean currents that bring warm waters, and a milder climate than most regions at our latitude experience.}

Oceanographers and climatologists believe that increased rainfall and a progressive melting of Arctic icecaps could trigger a collapse in the formation of North Atlantic Deep Water (NADW) that causes the northward flow of warm water to the North East Atlantic region.\footnote{A total disruption of this vital ocean current could result in terrestrial temperatures up to 5°C lower than average – this is around half the temperature change experienced during a major ice age. The consequences for our society would be dramatic;\footnote{European agricultural production, for example, would be unable to provide food for most of the population, leading to widespread hunger and emigration on a large scale.\footnote{And while predictions as to when such a high impact event could occur lack certainty, the effect is likely to happen suddenly over timescales far shorter than a human lifespan. The last such oceanic collapse took place around 12,700 years ago, began within a decade and lasted for a thousand years.\footnote{That event was caused by a release of meltwater from the Laurentian glacier and current patterns of precipitation in the Arctic could have a similar effect. A repeat of such an event is the nightmare scenario – while the probability of it occurring remains an unknown quantity, it would be foolish to ignore the possibility. Swift action on reducing climate gas pollution could ensure that the risk of such scenarios is greatly reduced.}}}} Such a collapse would result in a rapid regional cooling, with potentially extremely severe environmental, social and economic consequences.\footnote{The popular perception that global warming will merely make Scotland a few degrees warmer and therefore a more pleasant to live is incorrect. The predicted few degrees increase in temperatures relate to average temperatures across the whole planet, whereas the knock-on effects on Scotland’s climate are likely to be very different. Instead, Scotland’s rainfall, winds and temperatures are likely to change in more extreme ways with consequent impacts on the population and economic activity.}
Scottish Executive approach to Climate Change

The UK Government has a target under the United Nations Kyoto Protocol of reducing Climate change gas emissions by 12.5% below 1990 levels by 2008-12, and an additional target of reducing carbon dioxide emissions by 20% below 1990 levels by 2010.

The UK Government has also accepted the Royal Commission on Environmental Pollution’s longer term recommendation that the UK must put itself on a path towards a reduction in emissions of some 60% from current levels by 2050 in order to mitigate the effects of Climate Change.\(^5\)

However the UK government has now announced that it will fail to meet the 20% target it set for itself.\(^5\)

In November 2000, the Scottish Executive published the ‘Scottish Climate Change Programme’ which set out the policy areas that the Executive planned to tackle to ensure it made an equitable contribution to the UK Climate Change targets. The programme document contained the following pledge: ‘

Scottish Climate Change is for real: it is happening – we in Scotland have to play our part in [the] global effort to reduce emissions’.\(^5\)

This programme is currently under review.

The Executive has so far resisted calls by Scottish Green Party MSPs\(^5\) and environmental organisations to set a target for reducing Climate Change pollution. While accepting the reality of Climate Change and the need to reduce emissions, the Scottish Executive has instead chosen to pledge to contribute to the overall UK target on reducing carbon emissions under the Kyoto Protocol.

Scotland is not yet making an equal contribution to UK Climate Change targets and there are concerns that Scottish Executive policies such as approval for the M74 Motorway extension and the Air Route Development Fund are undermining efforts to tackle Climate Change.

Between 1990 and 2002, Scotland’s emissions of greenhouse gases (as a percentage of UK emissions) rose from 9.9% to 11%. Scotland is now emitting a greater proportion of the UK emissions than it was twelve years ago.\(^5\)

While UK emissions as a whole fell by 14.9% between 1990 and 2002, England’s emissions fell by 18% and Wales emissions by 8.6%, Scotland’s emissions fell by only 5.5% over the same period. Scotland’s emissions are not falling as fast as other parts of the UK.\(^5\)

Continuing this trend to 2050 would see Scotland’s emissions fall by about 27% against a UK target of 60%. It is clear that Scotland is presently set to fail to meet UK government targets on greenhouse gas emissions.

The Scottish Parliament Environment Committee’s Inquiry into Climate Change concluded: ‘

The Committee welcomes the Executive’s commitment to developing and revising its own Climate Change programme, but believes that the current rate of progress in reducing emissions in Scotland is inadequate to meet both short and long-term targets. The Committee supports the aim of achieving a 60% cut in by 2050, and believes that very substantial action must begin now.’\(^5\)
While acknowledging the reality of Climate Change and the need for policies to tackle it, there are concerns that the Scottish Executive has in practice marginalised Climate Change. As long as economic growth at all costs is the primary motive for Executive policy, Scotland is unlikely to be able to make the 60% reduction in our greenhouse gas emissions that the Royal Commission on Environmental Pollution calls for.

Since the effects of Climate Change are likely to be increasingly damaging to the economy, for governments to prioritise economic growth in the short term at the expense of measures to tackle Climate Change, is only storing up problems for the economy in the future.

In August 2004, the Joint Performance Team published ‘Measuring Scotland’s Progress Towards a Smart Successful Scotland 2004’, a report commissioned by the Scottish Executive. For the first time, greenhouse emissions are being included in this initiative. The report shows that although there has been some progress in decoupling greenhouse gas emissions from economic activity, Scotland remains at the bottom of the third quartile of 28 OECD countries at 21st place. The UK is at 14th place. As the authors of the report point out: “the results suggest that Scotland still has a lot to do.”

Solutions to long term issues such as Climate Change are not well served by the conventional four to five year outlook of UK and Scottish politics. Rather, a longer term approach will be needed. As long as politicians look no further ahead than the next election, effective policies to tackle Climate Change are unlikely to feature in many Party manifestos. This dilemma lies at the heart of the challenge facing the Scottish Executive on Climate Change.
Solutions to Climate Change

At a global level the “Convergence and Contraction” (C&C) model developed by the Global Commons Institute has been proposed as a way to achieve the reductions of greenhouse gas emissions required to stabilise global atmospheric carbon levels. This is a framework for industrialised countries to reduce their carbon emissions while allowing developing countries to increase their own emissions until a point is reached where per capita emissions of carbon dioxide and other greenhouse gases are relatively equal.

In order to achieve the reduction in Climate Change emissions required under a global scheme such as C&C, every industrialised country will have to achieve its own reductions.

As the Environment and Rural Development Committee recently pointed out: ‘Climate Change is an extremely serious challenge for all spheres of government, and for public sector bodies, businesses and individuals. A radical response on a huge, almost unprecedented, scale must start to be entrenched in policy now. A massive possibility for change exists at government, business and individual levels, given the right policy levers and leadership.’

Following devolution the Scottish Parliament has powers over a wide range of policy areas that could be used to facilitate a reduction in Climate Change gas emissions. A number of examples of these policy areas are outlined below.

Greening the Economy

Rather than being seen as a burden to the economy, achieving reductions in energy and resource use should be seen as an economic advantage. Again, the Scottish Parliament Environment Committee’s inquiry into Climate Change spelled it out: ‘Reducing emissions should be seen as an issue of resource efficiency and economic competitiveness, offering a key win-win situation.’

As well as offering opportunities to make businesses more energy and resource efficient reducing their costs, there are also specific opportunities for new business activities from adapting to a low-carbon economy. For example, the manufacture and installation of renewable energy technologies and products to make energy use more efficient.

Indeed the Environment Committee’s inquiry concluded: ‘Scotland cannot afford to miss out on the huge business opportunities that will arise as technologies, such as renewable energy sources, have to develop to a global scale to meet long term emissions targets.’

Improving Energy Efficiency

Traditionally, there has been a strong correlation between economic growth and energy demand. However genuinely sustainable economic progress need not be accompanied by profligate energy use.
As the Scottish Parliament Environment Committee’s Inquiry into Climate Change observed: ‘It is estimated that approximately 40% of energy could be saved, and that half of the 60% reduction target for 2050 could be achieved cost-effectively by improved energy efficiency.’

The Scottish Executive has committed itself to developing a strategy for energy efficiency. This could include introducing measures to ensure that homes are far more energy efficient (as well as reducing emissions of greenhouse gases, this has the added benefit of reducing fuel poverty). Such a home energy efficiency policy could run in parallel with schemes to encourage installation of small scale, micro, renewable energy for homes. As well as the domestic sector, industry and commerce have great potential to improve its’ efficiency of energy use.

The Scottish Parliament Environment Committee’s inquiry into Climate Change concluded: ‘The Committee welcomes the Executive’s commitment to develop a Scottish energy efficiency strategy. This should include targets for different sectors at individual, public sector and business levels. It must also include targets for the development of small-scale renewable energy developments.’

The recommendation that the Executive adopts energy efficiency targets is in line with the proposal for a Home Energy Efficiency Targets Bill by Green MSP Shiona Baird which has also gone out to public consultation. Such targets for energy efficiency could contribute towards achieving an overall target for reducing Climate Change emissions as proposed by this bill.

Accelerated Introduction of Renewables

The Scottish Executive is currently working towards a target of 40% electricity generation from renewable energy by 2020. Whilst the current focus is on wind energy, the Scottish Executive could encourage the rapid commercialisation of the full range of renewable technologies: wind, wave, tidal, solar and biomass. In particular, the Executive could increase current levels of investment into marine renewables. This broad spectrum of technologies would improve the security of energy supply.

In particular, microrenewable energy, where small-scale wind, solar and hydro devices provide electricity for individual buildings or small communities, offers considerable potential for development. Indeed the Executive has devolved powers that could be used to encourage microgeneration;

- Currently installation of microrenewable devices often requires planning consent. However, the Executive could grant permitted development status in order to reduce barriers and costs of installation.
- As a financial incentive for microgeneration, a version of the renewable obligation certificates (ROCs) currently issued to large scale generators could be issued for to micro generators. Such ‘ROC-ette’s’ can then be sold on to electricity suppliers helping offset the costs of installation.
- Building regulations could be amended to require the installation of some micro renewable energy sources in new developments.

A Bill to promote Microgeneration has been proposed at Westminster. The bill requires firm targets and new policies to promote microgeneration, establishes a ‘renewable heat
obligation’ and requires government reports to parliament on these issues and on greenhouse gas emissions.66

Indeed the Scottish Parliament Environment Committee’s inquiry into Climate Change concluded: ‘Large reductions in Scottish emissions require change towards lower-emission methods of electricity generation. All the available technological areas – such as tidal and wave, biomass, solar, wind, and landfill gas – will be needed if Scotland is to meet its target of 40% of electricity demand to come from renewable sources by 2020.’67

However this target for renewable electricity could also be more ambitious – electricity only makes up 20% of Scotland’s total energy demand, so the current Executive target accounts for only 8% of total energy demand. Scotland has the good fortune to be sited amongst some of Europe’s greatest renewable resources. Independent research for the Scottish Executive has shown that Scotland has capacity to supply all of its’ electricity from practicable renewable sources.68 The aim could be to eventually generate 100% of Scotland’s electricity from renewables.

**Sustainable-Transport**

Transport is the third biggest source of Climate Change emissions in Scotland. Emissions from transport grew by 8.4% between 1990 and 2002 and transport is predicted to be the biggest emitter by 2015. The Scottish Executive’s own statistics show that road vehicle mileage increased for all categories (except buses) between 2002 and 2003.69 Yet the Executive continues to pursue a transport policy of “predict and provide”, exemplified by their approval of the M74 Motorway Northern Extension and support for the Aberdeen Western Peripheral route.

If the predicted 27% rise in traffic levels is to be halted, a far greater emphasis must be placed on sustainable transport, including more and better quality public transport, enhanced provision for walking and cycling, and movement of freight by rail and water.

Although the Scottish Executive has targets to stabilise road traffic at 2001 levels by 2020, there is little sign of progress being made towards this. The Scottish Parliament Environment Committee’s inquiry into Climate Change concluded: ‘The Executive has not yet made any identifiable progress in this sector towards an equitable contribution to UK targets. The Committee recommends that the Executive’s transport strategy must firmly establish the means for emissions reduction targets to be integrated explicitly into transport planning.’70

The ‘Green Transport Bill’ proposal by Green MSP Chris Ballance, which has also gone out to public consultation, calls for Scottish Ministers to provide interim targets for road traffic reduction aimed at stabilising road traffic at 2001 levels. Achieving these targets would necessitate the promotion of socially and environmentally sustainable transport alternatives and consequently reduce Climate Change emissions.71 Such legislation to reduce road traffic could contribute to an overall target for reductions in Climate Change emissions as proposed here.
Adopting a ‘Zero Waste’ strategy

Whilst the generation and disposal of waste contributes to Climate Change emissions, the Executive’s record on reducing the amount of waste is poor. The amount of household waste is currently on the increase in Scotland. However there is significant scope to reduce the generation of waste.

A policy of zero waste – aiming to design waste out of society - would include a comprehensive approach to resource use across the whole product life-cycle, from material and product design through to reuse and recycling. Such a zero waste system would reduce greenhouse gases by:

- Saving energy – particularly by reducing energy consumption associated with extracting, processing and transporting ‘virgin’ raw materials. Manufacturing with recycled materials uses less energy overall compared with manufacturing using virgin materials.
- Increasing carbon uptake by forests (recycled paper, for example, leaves more trees standing so they can absorb)
- Reducing and eventually eliminating the need for landfill sites (which release methane) and incinerators (which waste energy compared to recycling and reuse and emit greenhouse gases).

The US Environmental Protection Agency has calculated, for example, that by recycling all of its’ office paper waste for one year, an office building of 7,000 workers could reduce greenhouse gas emissions by 546 metric tons of carbon equivalent, when compared to landfilling. This is the equivalent to taking nearly 400 cars off the road.

Land-use changes

The emission of gases from land makes a substantial contribution towards Climate Change but there has been little recognition of this by the Executive.

The Scottish Parliament Environment Committee’s inquiry into Climate Change said: ‘Agriculture, forestry and land use form a very significant, and distinctive, sector in terms of Scottish emissions. Scotland’s proportion of UK emissions in these sectors is extremely high and disturbance of Scotland’s high carbon-content soils has the potential to increase rapidly the loss of carbon in the form of to the atmosphere. The Committee is disappointed that policy has not yet addressed this appropriately, and recommends that the Executive should develop a co-ordinated soil protection strategy as a matter of urgency.’

Agriculture

Agricultural activity is a significant contributor to Climate Change emissions and these fell by 12.9% between 1990 and 2002. However, this reduction appears to be fortuitous rather than the result of policy implementation. However, there is potential to integrate Climate Change considerations into agriculture policy initiatives, such as land management contracts.

Indeed the Scottish Parliament Environment Committee’s inquiry recommended; ‘Climate Change should be fully integrated into a review of the Scottish agriculture strategy to ensure that the agriculture sector can achieve a consistent reduction in emissions alongside other policy objectives.’
Forestry
Because trees adsorb carbon dioxide from the atmosphere as they grow, forests can be used to temporarily reduce levels of carbon dioxide (although carbon will be released back into the atmosphere when the trees die and decay). Emissions can also be reduced if biomass is used as a renewable energy fuel in place of oil, gas or coal and if timber is used as a material in construction. There are large areas of un-forested, non-agricultural upland in Scotland and the Scottish Forestry Strategy could include a target for emissions reduction. However any planting must avoid draining of active peatlands to avoid the release of carbon. Re-waterlogging of previously drained peatlands could also be undertaken.

The Scottish Parliament Environment Committee’s Inquiry said; ‘The Committee wants to see much greater political priority accorded to the role of forestry in addressing Climate Change, and recommends a review of the Forestry Strategy to address Climate Change considerations comprehensively. Rural development funding, and other support mechanisms, should be examined urgently to assess how they can provide appropriate incentives to develop forestry for carbon sequestration and for use as a construction material.’

Public sector activity
The buying power of the public sector has huge potential to stimulate and support the market in energy efficiency and renewable energy. This was recognised by the Scottish Parliament’s Environment Committee’s Inquiry that concluded: ‘The leadership role and potential impact of the public sector cannot be overstated. Emissions reduction targets should be set to ensure that climate change considerations are integrated into all public functions. Public procurement has a vital role to play in driving investment in areas such as small-scale renewable energy systems, energy-efficient buildings, alternative fuels, etc.’

Furthermore the Committee recognised that Local Authorities and therefore the Executive could play a key role in directing the planning of communities in order to conserve energy use and reduce emissions saying; ‘The planning system must also play a pivotal role in co-ordinating policy, so that development is encouraged in a manner and in a location which reduces emissions, primarily by avoiding unnecessary transport of goods or people.’
Climate Change Targets

There is strong evidence that there is risk of extensive human suffering and environmental damage if global average temperatures were to rise by more than 2°C (temperatures are already 0.6°C higher now than pre-industrial levels). The increase in average temperatures, and therefore the amount of change in the global climate, will be determined by level of greenhouse gases in the atmosphere.

Levels of greenhouse gases are already higher than at any time in the past 400,000 years and possibly 40 million years. Because the final levels will be determined by the amount of gas emissions over time, how rapidly emissions are reduced is as significant as the long-term emissions reductions target we set. For example, if we continue with high emissions before steeply reducing these in 20 or 30 years, we will have committed the world to more warming than if we begin taking action now. To avoid committing the globe to more than a 2°C increase in global average temperature, latest scientific thinking indicates that global emissions will need to peak and decline within 10-15 years. The UN has recognised that responsibility for achieving this will vary in different parts of the world. Some countries will need to reduce their emissions, while some poorer countries may need to increase their emissions as they modernise.

In response to increasing concerns about climate change, the United Nations Framework Convention on Climate Change was agreed at the Earth Summit in Rio de Janeiro in 1992. 188 countries have now signed it. Under the Convention, all developed countries agreed to aim to return their greenhouse gas emissions to 1990 levels by 2000.

However, it was quickly recognised that the Convention commitments could only be a first step in the international response to climate change. Climate prediction models show that deeper cuts in emissions will be needed to prevent serious interference with the climate. The Kyoto Protocol, agreed in December 1997, was designed to address this issue. Developed (Annex 1) countries agreed to targets that will reduce their overall emissions of a basket of six greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride) by 5.2% below 1990 levels over the period 2008-2012.

The Kyoto Protocol is the first treaty of its kind to impose legally binding targets on countries, and differentiates between different Parties to the Convention. Only annex 1 countries have legally binding emissions reduction targets under the Kyoto Protocol. For example, the European Union and its member states agreed to a reduction of emissions from 1990 levels of -8%, the United States to -7%, Japan to -6%, Russia and the Ukraine to return to 1990 levels, and Australia was allowed an 8% increase.

Under the Kyoto Protocol, the European Union and its Member States have agreed to meet their commitments jointly. This 'bubble' arrangement allows the EU's target to be redistributed between member states to reflect their national circumstances, requirements for economic growth, and the scope for further emission reductions. In June 1998, under the UK Presidency of the EU, environment ministers agreed how the target should be shared out. The UK agreed to reduce its emissions by 12.5%, which is its legally binding target under the Kyoto Protocol. Targets for other member states ranged from -21% for Germany and Denmark, to -6% for the Netherlands, +13% for Ireland and +27% for Portugal.
Legislation for targets

The UK Government has agreed to a target of 12.5% reduction in the 1990 level of UK emissions of greenhouse gases by 2012. The UK government also announced its own voluntary target to reduce carbon dioxide emissions by 20% by 2010. However, during the last two terms of the current UK Government, carbon dioxide emissions rose by about 3 per cent and the Government has now said it will now fail to meet its’ 20% carbon dioxide reduction target.79

To avoid the worst of Climate Change, it has been recommended that the level of greenhouse gases in the atmosphere in 1990 should be reduced by 80 per cent in the longer term. To meet this 80% target by the middle of this century this would require a reduction of about 3% per cent every year.

Indeed, annual or year-on-year reduction targets may be more effective than a single long-term target because they ensure steady progress. Setting them may also help to convey to society that reductions need to be made now not put off until a future date. Success can also be very easily measured and adjustments made in good time if policies are failing to reduce emissions. Immediate action at home will also send a strong signal to other countries that we are serious about tackling Climate Change. This is the basis of the ‘Big Ask’ campaign for legislation.

The ‘Big Ask’ campaign led by Friends of the Earth has called for a new law to be passed at Westminster which would require the UK Government to set a standing annual, year-on-year, target to reduce Climate Change emissions.80 However in Scotland many powers relating to Climate Change emissions are no longer under the control of the UK Government but now lie with Scottish Executive.

This consultation is therefore on a ‘Draft proposal for a bill to require the Scottish Executive to establish targets to reduce greenhouse gas emissions that contribute to climate change, by a specified date and to take steps including the preparation of an action plan to ensure those targets are met and to report on progress.’

The requirement to set targets by law, which may or may not be year-on-year targets, and also to devise a plan of action for meeting these targets and to have to report publicly on progress would focus the Scottish Executive on reducing Climate Change emissions.

This proposal is in line with the Scottish Parliament Environment Committee’s recent Inquiry into Climate Change which recommended that: ‘The Executive should develop a set of clear and challenging benchmarks to provide a detailed route map to guide action towards this long-term target. It is essential that public sector agencies, businesses and individuals know what is expected of them. A comprehensive independent audit of progress under the Scottish programme should be commissioned by the Executive and repeated every five years. The Executive should also report annually to the Parliament on its progress towards meeting targets.’81

Although the committee recommended the Executive targets for reducing climate change emissions voluntarily, the legislation proposed here would legally require the Executive to set such targets. Furthermore the legislation would require the Executive to publish an action plan for meeting these targets and also to report on its’ progress.
Responding to this consultation

The purpose of this consultation is to receive feedback from interested organisations and members of the public to assist in the framing of a final Bill proposal.

The following questions may help you formulate your response:

1. What are your views on the proposed approach of
   i) setting targets,
   ii) preparing a plan of action,
   iii) reporting on progress toward reducing pollution that contributes to climate change?
2. At what level(s) and over what time frame(s) do you think targets should be set?
3. What measures would you like to see included in an action plan?
4. How frequently do you think reporting should take place?
5. Is there anything else you would like to add?

The deadline for responses to this consultation is: Wednesday 21st September, 2005.

Ways to respond

By mail to:
Steve Burgess, Room MG12, Scottish Parliament, Holyrood, Edinburgh EH99 1SP
By email to: steve.burgess@scottish.parliament.uk
By fax to: 0131 348 6375, marked ‘for the attention of Steve Burgess’

Further copies of this consultation paper can be downloaded from: www.markruskellmsp.org or ordered by email from the address above.

Please note to help inform debate on the matters covered by this paper and in the interests of openness, the responses submitted on this consultation document will be made public. It will be assumed that responses can be made public unless the respondent indicates that his or her response is confidential. Confidential responses will nevertheless be included in any summary or statistical analysis, which does not identify individual responses.

Mark Ruskell MSP would welcome as many contributions to the consultation as possible. Please pass this consultation paper to any other individuals or organisations that you think might be interested.
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