

A New National Climate Change Strategy for Ireland

Friends of the Earth's submission to the
Government's review of climate change policy

October 2006

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1. Executive Summary

A. Twelve Step programme to cure Ireland's carbon addiction

The revision of the National Climate Change Strategy is a chance to put Ireland on a low-carbon, low-cost pathway to a sustainable future. Friends of the Earth has devised a twelve step programme to cure Ireland's carbon addiction. As fuel prices rise we can save money and do our fair share to stop climate chaos at the same time:

1. Commit Ireland to cutting our climate pollution by two thirds by 2050.
2. Pass a Climate Security Act making it the law to reduce our greenhouse gas emissions by 3% year-on year, so we make the shift in a planned step-by step way.
3. Put the polluter pays principle back at the centre of all Irish climate change policy. Take steps to put a price on carbon emissions across the whole economy to encourage everyone to save energy and cut pollution.
4. Use December's budget to keep the promise to reform VRT and Motor Tax so cars are taxed according to their pollution per kilometre.
5. Introduce a congestion charge in Dublin now, at the canals. Offer a big discount for the least polluting cars and big penalties for highly polluting cars like SUVs.
6. Introduce a five-year freeze in all public transport prices to encourage people to make the shift to buses and trains. Put more buses on the roads now.
7. Extend and enhance the "Greener Homes" grants. They should cover insulation and other energy saving measures as well as the current renewable energy options.
8. Tighten the building regulations for new houses to increase energy efficiency by 40%. SEI's "House of Tomorrow" achieves this and it should become the regulatory standard.
9. Reform stamp duty so that the better the energy efficiency label the house has the less you pay.
10. Rule out buying nuclear electricity from Britain. We should put our money where our mouth is on nuclear and only buy green energy from Britain.
11. Phase out the use of peat to generate electricity by 2015, the same power stations can burn increasing amounts of biomass instead.
12. Promote and support more and more local generation and distribution of electricity using renewable fuels. Two thirds of the energy is lost in the fossil-fuel based centralised generation and transmission system we have now.

B. Policy context: “Too little done, Much more to do”

Ireland’s record on climate change is one of failure. This policy review is a chance to put that right.

When this Government was first elected in 1997 the Programme for Government declared the environment to be one of the “Seven Key Concerns of the Irish People” and pledged that “Concern for the environment will be central to all policy decisions of Fianna Fáil and the Progressive Democrats in Government.” Later that year Ireland signed the Kyoto Protocol, establishing the first legally binding limits on greenhouse gas emissions by developed countries. Just before the Kyoto Conference in November 1997, the Economic and Social Research Institute (ESRI) published a report projecting that Ireland’s greenhouse gas emissions would be 28% above 1990 levels in 2010 if “business-as-usual” policies continued. Under Kyoto, Ireland agreed to limit the rise in our emissions to 13% above 1990 levels by 2008-2012.

Not surprisingly then, the National Climate Change Strategy published in 2000 declared “business as usual is no longer an option for Ireland”. Unfortunately business-as-usual is exactly what the Government has delivered. The latest EPA figures show Ireland’s emissions in 2004 were 23% above 1990 levels and project gross emissions in 2010 will be 30% above 1990. Major planks of the strategy, such as the conversion of Moneypoint power station from coal to gas and the planned carbon tax, were abandoned and nothing was put in their place. Even uncontroversial plans, like the graduation of VRT and Motor tax according to emissions, are stalled. That particular plan was reiterated in the current Programme for Government. December’s budget is the last chance the Fianna Fáil / PD coalition has to implement it before the General Election.

The review and revision of the National Climate Change Strategy is therefore long overdue. Indeed the review was initiated in 2002 but it has taken four years for the Government to produce proposals for public consultation. This review is nevertheless an historic opportunity to put Ireland on a low-carbon, lost-cost pathway to a sustainable future.

Ireland is at a crossroads. There are no quick-fixes or short-cuts to climate security. The climate crisis and oil peak mean change is coming whether we welcome it or not. Our choice is what kind of change and whether we manage it ourselves by making the shift to sustainability in a planned step-by-step way, starting now, or whether we wait and let change happen to us by way of shocks, disruption and upheaval down the line.

Almost half a century ago the Whitaker report sparked a paradigm shift in public policy from inward-looking economic self-sufficiency to outward-looking economic internationalism. Twenty years ago a new model of social partnership generated the collective commitment required to pull Ireland out of an economic malaise. Nothing less than another paradigm shift will do now. We need another sustained period of political leadership, innovative public policy and social partnership if we are to rise to the challenge ahead in a way that improves the quality of life for all.

Our reasons to act decisively, urgently and adequately can be summarised as science, self-interest, and solidarity.

With every month that passes the scientific evidence continues to stack up that climate change is already happening, that human activity is causing it and that we are nearing several tipping points which could make runaway climate change irreversible. The scientists are telling us that we have at most ten years to make global emissions start to decline.

It is clear that economic development, social progress and environmental sustainability are interdependent. The absence of any one will undermine the other two over time. The rich world's economic development has been driven by fossil fuels. Climate change is not simply an environmental issue. It is both the result of how the Global North got rich and one of the main barriers to sustainable development in the Global South. Combined with the coming decline in oil production it is also a growing threat to our own economic and social progress, unless we make the transition to a post-carbon economy. The sooner we make the leap, the more economic opportunities will open up for Irish businesses.

It is the poorest communities on the planet who are being hit first and will be hit hardest by climate change. The same communities that were devastated by the Asian Tsunami are most vulnerable to more intense storms and rising sea levels. The same communities that are frequently threatened by famine in Sub-Saharan Africa are most vulnerable to more frequent droughts and floods. The Government has just launched a White Paper on Overseas Aid laying out how Ireland will become the 5th or 6th most generous aid donor in the world per person by 2012. But right now Ireland is already the 5th most climate polluting country on the planet per person. How coherent is it to spend €1.5 billion a year of taxpayer's money on overseas aid while at the same time our increasing climate pollution threatens to undermine the recipient country's prospects of development.

In this submission Friends of the Earth lays out a series of policy recommendations that address Ireland's carbon addiction. If implemented they will enable us to improve our quality of life in Ireland and do our fair share to prevent global climate chaos.

C. Full list of recommendations by sector

Underlying Principles of Irish climate change policy

- Urgency (we have 10 years to peak and decline global emissions)
- Adequacy (the policies must be enough to achieve the required reductions)
- Equity (both between countries internationally and within Ireland)

Policy Goal

- That Ireland does its fair share to prevent dangerous levels of global climate change¹. To do this Ireland will have to reduce its CO₂ emissions by at least two thirds by 2050².

Policy framework and cross-sectoral policy instruments

- Enact a Climate Security Act which makes a 3% year on year reduction in Ireland's greenhouse gas emissions the law.
The only way to make the shift to sustainability is in a planned, managed, step-by-step way. It can't be done at the last minute and the only alternative would be to leave it to energy and climate shocks to achieve it by disruption and upheaval.
- Apply the polluter pays principle across the whole economy and society. Put a price on carbon (through tradeable carbon credits or carbon charging) that encourage firms and consumers to find the most effective and efficient way to cut emissions.
- Establish an Independent Commission on Sustainable Development, headed by a public figure held in high regard, to take the long view to 2050, engage the public and make recommendations on the steps Ireland should take to do our fair share to prevent dangerous climate change, enhance quality of life and promote social cohesion.
- Involve environmental interest groups in Social Partnership in line with their request to participate.
- Move Comhar, the stakeholder forum on sustainable development, from the Department of Environment to the Department of the Taoiseach, where it would join other partnership bodies such as the National Economic and Social Council and the National Competitiveness Council. Resource it accordingly.

Impacts and adaptation

- The protection of the Gulf Stream, which gives Ireland its temperate climate and is at risk if we allow climate change run out of control, must become a key objective of Irish public policy. Were it to shut down Ireland's climate would quickly become closer to that of Newfoundland which lies at a similar latitude to Ireland.
- Our tradition of solidarity with the world's poorest people must inform and shape Irish climate change policy. Climate change will hit the Third World first and hardest There is currently no coherence between our increasingly

¹ As part of the European Union Ireland has agreed that this means keeping the rise in average global temperature to 2C or less.

² That would be a 60% reduction on 1990 levels, and arguably is an historically fair share for Ireland within an EU bubble where some countries will have targets of 80% reduction

generous international aid policy and our increasingly climate-polluting domestic policies.

- Consideration should be given to funding research that would calculate the embodied energy/carbon emissions in imports to Ireland. It is not enough to tackle emissions directly in Ireland and ignore those which are generated by demand from Ireland.

Energy

- Promote decentralised, distributed generation using renewable sources of energy.
- Develop the grid to facilitate the expansion of Combined Heat and Power, and micro-generation.
- Maximise energy efficiency and demand management - measures which are the most cost-effective way of reducing CO₂ emissions. The revised NCCS should adopt as a target a reduction in Irish energy use of 20% by 2020, in line with the 2005 EU green paper on energy efficiency.
- Set a target of at least 40 per cent of electricity to come from renewable sources, principally wind, wave and tidal, and biomass, by 2020.
- Phase out the use of peat to generate electricity by 2015. In the meantime these power stations can burn increasing amounts of biomass instead.
- Phase out Moneypoint as a main generator and use it for back-up supply only.
- Rule out buying electricity generated by nuclear power from the UK and specify electricity from renewable sources only.
- All new power stations should be made carbon capture ready, including the 3 new gas-fired stations.
- Substantially increase funding for public RD&D into the various aspects of the hydrogen economy including the feasibility of using the gas pipeline network for distributing hydrogen.

Transport

- Government must increase fuel duty to ensure parity with the United Kingdom, thereby reducing fuel tourism (fuel bunkering).
- Fuel efficiency labelling of cars should not be limited to salesrooms. The rating should be included on vehicle registration plates for all to see.
- Government must discourage the import of biofuels while pump-priming domestic production, however Ireland ought not to devote huge tracts of land to the growing of biofuels whose use therefore should be prioritized only for public service vehicles: buses, trains, ambulances, postal vans etc.
- Government must use the December 2006 Budget to reform VRT and Annual Motor Tax so that cars are taxed according to their CO₂ emissions per kilometre. Annual Motor Tax must be seriously punitive for the most polluting vehicles - as much as €3000 for SUVs.
- Government must re-balance its transport spending so that at least 65% is devoted to public transport, walking and cycling.
- Government must invest in the Dublin-Belfast Enterprise rail service such that the promised frequencies and journey times are achieved - an hourly service with a journey time of 1 hour 35 minutes.

- Public policy must ensure that all intercity travel by rail in Ireland is faster, more reliable, and cheaper than making the same journey by car.
- Dublin needs buses, not just bus lanes! The dispute over the procurement method for new buses has seriously delayed the purchasing and bringing into service of new buses which are crucial to people making the shift to public transport.
- Introduce a five-year freeze in all public transport prices to encourage people to make the shift to buses and trains.
- Schools should introduce a cycling proficiency test and Government should focus investment on the creation of Safe Routes to School.
- Government must end all air route subsidies within the State.
- Government must introduce per kilometre road pricing on the upgraded M50.
- Government must not sanction the construction of a new ring road around Dublin.
- Government must consider how best it could stimulate greater use of the railway for freight transport.
- Government must introduce planning guidance requiring local authorities to deny planning permission to large out-of town and edge-of-town supermarkets.
- Government must introduce a new planning policy to limit the building of one-off houses in rural areas, outside settlement limits.
- Government must introduce a congestion charge for Dublin, taking effect at the canals. As a further incentive to purchase fuel-efficient vehicles, a discount or exemption should apply to the least polluting vehicles, while higher tariffs should apply to the most polluting vehicles such as SUVs.
- Government plans to decentralise the public sector must be subject to a climate change impact audit.
- Government should introduce road pricing in accordance with the following principles: it should be used to cut carbon emissions and not just congestion; it should be part of a package of measures to cut traffic levels; and it should be used to cut the cost of public transport and raise the cost of motoring.
- Government must set a target for stabilising carbon emissions from the transport sector and then reducing them.
- Integrated ticketing should be introduced to allow no-hassle transfers between bus, train, DART and Luas

Built Environment and Residential

- A Regional Planning Guideline on climate change should be written which would draw together areas such as residential densities, location of amenities, transport, distributed generation and embedded renewables.
- Tax relief on brown-field sites should be introduced to offset the additional costs associated with such sites.
- A Planning Policy Guideline which restricts the development of single dwellings in the countryside should be drawn-up.
- The new scheme to label homes according to their energy efficiency, to be introduced in line with the EU Energy Performance of Buildings Directive, should rate the current Building Regulation Standards no better than a 'D'. 'A' ratings should be reserved for truly carbon neutral developments.

- VAT on renewable energy technologies and insulating materials should be reduced to make them more affordable and stimulate the market.
- Stamp Duty rates should be linked to the energy efficiency rating of the property so that the better rating it has, the less the Stamp Duty is.
- Building Regulations should be reformed with the regulatory standard being at least that of Sustainable Energy Ireland's 'House of Tomorrow'.
- The "Greener Homes" grants should be extended and enhanced to cover insulation and other energy saving measures as well as the current renewable energy options.
- Ireland should propose and support a measure at European Union level that electronic appliance such as TVs, DVDs and stereos sold in the EU have a 'time-bound' function which switches the appliance off after a set period of inactivity.
- Provide each household with free low energy light bulbs (CFLs) and raise the tax on standard incandescent bulbs to make CFLs price competitive.
- Make the public sector carbon neutral by 2015.

Industry, Commercial and Services

- The Government must restore the polluter pays principle to the heart of Irish climate change policy by applying carbon pricing across the whole economy.
- The Government should revise the National Allocation Plan for Ireland's participation in the European Trading Scheme. There is no reason why the traded sector should be allocated permits for emissions more than 13% above their 1990 levels, in the line with our Kyoto commitment. And as many of the permits for the 2008-2012 period should be auctioned as allowed under the scheme.
- Domestically the government should decide between a carbon tax or a cap and trade scheme so that all economic actors face a similar price signal to cut emissions from the start of the Kyoto commitment period on 1 January 2008.
- Ireland should propose and support the early reform of the European Trading Scheme for future periods to ensure the cap does indeed tighten over time, reducing emissions, and that business actually pays for all the permits it needs. Even before 2012 aviation should be included in a parallel scheme covering transport emissions.

Agriculture

- Government should adopt an ambitious target for conversion to organic production methods.
- Government must introduce incentives for conventional farmers to reduce their climate impacts by adopting some of the low-energy techniques used in organic agriculture, without necessarily becoming fully organic.
- Government should adopt an ambitious target for the uptake of REPS.
- Government ought to consider emissions for which Ireland is responsible, even if they originate outside the State, such as the carbon dioxide emissions which result from the manufacture of chemical nitrogen fertilisers.
- Government must not apply for a derogation from the Nitrates Directive limit on fertiliser application to farmland. At the very least, the rules of a derogation must be so tight as to discourage farmers from applying.

Government must ensure that any derogation does not allow the contamination of water, soil or air and should not apply to more than 5% of farms.

- Government ought to phase out support for low trajectory splash plate slurry spreaders and substantially increase grant aid for the trailing shoe method.
- Government must set clear standards for bio-energy crops to ensure a baseline for production, for example on inputs, conservation methods, soil protection and cropping regime. The primary purpose of agriculture, however, is the production of food, not fuel, therefore Ireland ought not to devote huge tracts of land to the growing of biofuels.
- Government must encourage short supply chains, enabling more farmers to service local markets rather than producing food for export.
- Government should encourage the growing of indigenous plant protein (peas, beans and especially lupins) in order to reduce imports of soya and maize.
- Government should identify and promote breeding varieties of maize which are capable of yielding competitively in Ireland without plastic.

Waste

- The diversion of biodegradable wastes from landfill to incineration with energy recovery should not be “a primary objective of waste management policy”. Is not the best option in terms of generation of climate pollution. Instead, waste policy which focuses on waste prevention and phasing out of residual wastes, recycling and composting, coupled with anaerobic digestion and Mechanical Biological Treatment for residual wastes and increased capture of landfill gas, will deliver more from both the perspective of decreasing climate pollution and wider environmental sustainability.

Sinks

- While afforestation is positive for biomass, habitats and biodiversity its use a carbon sink is no substitute for reducing carbon emissions. Trees and other biomass are short term stores and are vulnerable to a changing environment - when trees die, the carbon they have stored will largely be released once again.

2. Impacts and Adaptation

Climate science is continually developing. And the latest science gives us increased cause for concern about the impacts of runaway climate change. Already this year we have seen studies predict increased intensity of Atlantic hurricanes and the possibility that half the surface of the Earth will be hit by drought before the end of the century (UK Met Office's Hadley Centre).

Next year's Intergovernmental Panel on Climate Change will give us a new benchmark assessment of all the science. It is already clear, however, that runaway global climate change would exacerbate some already challenging climate patterns, making sub-Saharan Africa even more prone to drought for example. It would also make erratic and severe weather events such as storms and floods more common the world over. The continental European heatwave of 2003, which killed 35,000 people, and the summer of 2005 which saw record breaking forest fires in Spain and Portugal at the same time as floods in Switzerland and Austria fit that pattern.

The Government's consultation paper acknowledges the difficulty of downscaling from regional and global climate models to predict specific impacts in Ireland. Friends of the Earth welcomes the establishment of the Community Climate Change Consortium for Ireland and looks forward to ongoing assessment of what climate change could mean for Ireland.

We are concerned, however, that so far Irish climate change policy has been predicated on two erroneous assumptions: one, that impacts here will be limited and relatively linear and two, that we need only factor into our decision making the impact of climate change in Ireland. These assumptions are not made explicit in Irish climate change policy but nothing else can explain Ireland's policy passivity in the face of the threat of climate change. There are both scientific and moral reasons to question this approach.

If there is one thing we can be certain of regarding the science of climate change impacts it is that they will be erratic and uneven. There is no guarantee that Ireland will escape relatively lightly from runaway climate change. It is a remarkable omission that the Gulf Stream, which is the basis of Ireland's temperate climate that we all take for granted, is not mentioned once in the Government's 108 page consultation document. The latest science suggests it has slowed by 30% in the last 25 years. The shutdown of the Gulf Stream has gone from being a distant improbability to a plausible threat. Particularly when the predicted indicators and impacts of climate change have been emerging at rates much faster than envisaged as recently as the last IPCC report 5 years ago. We simply don't know how close we are to passing a threshold that would make the melting of the Greenland ice sheet irreversible and we can't be certain it would take many decades to happen, given what we learned from the abrupt break-up of the Larsen B ice shelf in the Antarctic. The disintegration of the Greenland ice-sheet would certainly jeopardize the functioning of the Gulf Stream which could abruptly plunge Ireland into a climate similar to that enjoyed today by coastal Newfoundland Canada. The impact of such a change in climate would be so severe that while the risk may still appear remote its prevention must become a key goal of Irish public policy.

It is equally flawed to base Ireland's response to the threat of climate change on the assumption that we need only worry about the possible climate impacts in Ireland. First, there are economic and social considerations that are excluded in such a limited calculation. Ireland is consistently near the top of the AT Kearney / Foreign Policy index of globalization. It is a cornerstone of government policy that Ireland has a "small open economy". Our standard of living and quality of life depend to a considerable degree on dynamic yet reliable connections with the rest of the world. The disruption that climate chaos would bring to the global system would not leave Ireland untouched. Even if we could adapt to increased drought and floods in Ireland, could we adapt to economic droughts and floods of climate refugees internationally.

There is an even more compelling reason to dispel our current insular perspective on the threat from global climate change. It is the moral imperative to factor in the welfare of humanity generally and that of the poorest people on the planet in particular. Ireland has a proud tradition of solidarity with the Third World and it would be shameful to undermine that now at a time when their prospects of sustainable development are threatened by a problem not of their own making. The developed world has got rich on the back of a 200 year fossil fuel binge and yet it is the Third World that is waking up first to the hangover. Climate change is hitting poorest countries first and will hit them hardest. The most vulnerable and least able to adapt are most at risk.

The Taoiseach recently launched Ireland's first White Paper on Overseas Aid this month. It promises that Ireland will reach the UN target for overseas aid by 2012, making us the fifth or sixth most generous aid donor in the world per capita. It also promises coherence between our aid policies and other Government policies which impact on developing countries. But we are already the fifth most climate polluting country in the world per capita. And by 2012 the Government reckons we will have overshot our Kyoto target for limiting the rise in our climate pollution by 100%. How coherent is it for the government to plan to spend €1.5 billion euro of taxpayers money on overseas aid every year if our climate pollution continues to rise, undermining the prospects of those who receive our aid lifting themselves out of poverty?

Ultimately consumer purchasing decisions are the most important driver of carbon emissions in an economy. Carbon emissions can be attributed to the delivery of products and services to meet the needs of the consumer. The NCCS policy measures fail to address this important driver instead confining themselves to sectoral initiatives that reflect the direct GHG emissions accounted for in the National Inventory.

The NCCS sets out proposals for tackling Ireland's direct emissions i.e. a production based analysis, this does not take into account those emissions generated by the demand for goods and products and consumption associated with Irish residents. This is a fundamental boundary issue, should policy and initiatives only focus on Ireland's direct emissions (geographical principle) or include those emissions generated by consumption associated with the island's residents (responsibility principle)? These two approaches need different policies and there is a need for further research, a consumption based analysis. Consideration should be given to funding research that would calculate the embodied energy/carbon emissions in imports to Ireland. It is not

enough to tackle emissions directly in Ireland and ignore those which are generated by demand from Ireland.

Summary of recommendations

- The protection of the Gulf Stream, which gives Ireland its temperate climate and is at risk if we allow climate change run out of control, must become a key objective of Irish public policy. Were it to shut down Ireland's climate would quickly become closer to that of Newfoundland which lies at a similar latitude to Ireland.
- Our tradition of solidarity with the world's poorest people must inform and shape Irish climate change policy. Climate change will hit the Third World first and hardest There is currently no coherence between our increasingly generous international aid policy and our increasingly climate-polluting domestic policies.
- Consideration should be given to funding research that would calculate the embodied energy/carbon emissions in imports to Ireland. It is not enough to tackle emissions directly in Ireland and ignore those which are generated by demand from Ireland.

3. Cross-Sectoral Policies

Chapter 3. of the 2000 National Climate Change Strategy covered “cross sectoral instruments” and outlined plans to put a price on carbon emissions by involving Ireland’s biggest polluters in the EU Emissions Trading Scheme and introducing a carbon tax to cover the rest of the economy. Both were recommended by the consultants report which informed and underpinned the formation of the strategy.

Remarkably this chapter is missing entirely from the review of the NCCS published by the Government in July.

The vast majority of national and international economic advice is that the most cost-effective way of reducing climate pollution is to put a price on carbon emissions across the whole economy using either carbon taxes or tradeable permits and leaving individual firms and consumers to find the most efficient carbon savings in response to these price signals. But the Irish government has consistently resisted this in the face of lobbying from vested interests. Often the government styles this as concern for Ireland’s economic competitiveness. In fact, however, ESRI research has consistently found that the overall economic cost would be small or negative (i.e. it could in fact be of net benefit to the economy). Indeed if the shift from taxing work to taxing pollution had been started in earnest in 1998 when it was recommended by Government consultants and advocated by Minister Noel Dempsey then Friends of the Earth believes Irish firms would already have reaped the economic rewards of investing in greater energy efficiency and would be less vulnerable to the rising energy costs brought about now by geo-political instability and the long term rise in demand (and therefore price) for energy from China and India.

One of the main arguments made again and again by IBEC and other business interests against the carbon tax before it was abandoned by the Government in September 2004 was that it wasn’t necessary to reduce emissions. Much better they said to pursue voluntary agreements with industry to reduce pollution. Indeed the state agency Sustainable Energy Ireland (SEI) had a specific mandate to negotiate such agreements. Within months of the carbon tax being ditched, however, SEI announced it was giving up on negotiated agreements because companies were no longer interested in signing up to them. Why had the companies suddenly lost interest in what they professed to be their preferred solution to the Kyoto challenge? Because the main incentive to negotiate a voluntary agreement to cut pollution, to qualify for exemption from the carbon tax, was now gone.

This reaction was entirely predictable and must have been anticipated by the Government when they scrapped the carbon tax. Combined with the disregard for the consistent advice of the ESRI and the Government’s own economic consultants one can only conclude the decision not to go ahead with the tax was less about maintaining international economic competitiveness and more about maintaining existing patterns of market advantage, about protecting today’s polluters from tomorrow’s pioneers.

The Gov must revisit the issue of carbon pricing. The EU Emissions Trading Scheme (ETS), flawed though it is (see section 7 below) does introduce a price signal to reduce pollution for Ireland’s most polluting companies. But the ETS only covers one

third of the Irish economy. When it enters its second phase on 1 January 2008 at the same time as our Kyoto commitments kick in it makes sense to have complementary domestic price signals in place.

Putting a price on carbon pollution serve three purposes.

Firstly, having to pay to pollute will encourage all of us, business and consumers, to cut emissions, thereby reducing the cost we will otherwise face to buy our way out of our first Kyoto commitment from 2008-2012. At the moment, depending on the price of carbon pollution permits on the international market, the Government will have to spend between €50 and €100 million of taxpayers' money each year buying our way out of the Kyoto Protocol for the five years of the first commitment period. That's at least as much, each year, as the total cost of the electronic voting machines and, Friends of the Earth believes, equally wasteful.

Secondly, it's much fairer to make the polluter pay for our Kyoto overshoot than the general taxpayer. Putting a price on carbon emissions not only rewards people who reduce their pollution, it will raise revenue which the Government can use to pay for our remaining Kyoto overshoot, support lower income families to invest in energy saving measures and ensure carbon pricing doesn't leave them less well off, and support business to succeed in a post-carbon economy.

Thirdly, carbon pricing can help kick-start the change in mindset we need if we are to make the shift to sustainability necessary to prevent global climate chaos and survive the decline in oil supplies. At the same time as it fails to meet our Kyoto target the Government agrees that the Kyoto commitment to 2012 is just the first step and that we will need steeper cuts and more intense action in the future.

EU Environment Ministers and the European Commission agree that developed countries will need to cut emissions by between 60 and 80% of 1990 levels by 2050 to do their bit to avoid dangerous climate change. Even if Ireland, as a late developer with less historical responsibility for causing climate change than some others, only has to agree to a 60% cut in 1990 levels by 2050 that translates into cutting current pollution levels by two-thirds by 2050.

There are no quick-fixes or short-cuts to climate security. The climate crisis and oil peak mean change is coming whether we welcome it or not. Our choice, in Ireland, is what kind of change and whether we manage it ourselves by making the shift to sustainability in a planned step-by-step way, starting now, or whether we wait and let change happen to us by way of shocks, disruption and upheaval down the line.

Friends of the Earth favours a planned step-by-step approach which is why we recommend the introduction of a Climate Security Act mandating 3% year-on-year reductions in Ireland's climate pollution. This would be the spur and the framework for action by all sections of society to bring our damage to climate stability under control. It is an idea that our sister organisations in the UK have been promoting for almost two years. A majority of MPs in the British parliament now support such a measure, along with the Conservative and Liberal Democrat parties. It is believed that the Labour government is considering including such a bill in the Queen's Speech. The Opposition parties in Dáil Éireann introduced a similar private members' bill late

last year. The Government now has the opportunity to make it the cornerstone of Ireland's new National Climate Change Strategy.

Even with such a clear framework established the pathway to a low-carbon future will not be entirely smooth. All sectors of society need to be mobilised if the effort is to succeed whereas as right now the public is still largely unaware of the threats and opportunities ahead while vested interests are a drag on the policy making progress. For this reason Friends of the Earth recommends the Government set up a Commission on Sustainable Development to stand back from the immediate media and political cycles to take the long view to 2050 and report on how best Ireland can reduce our climate pollution to our long-term fair share while enhancing quality of life and social cohesion. We have in mind examples such as how TK Whitaker helped change the thinking about Ireland's economic development in the late 1950s and how the Commission on the Status of Women helped do the same on gender equality in the 1970s. It may be no harm if such a commission also adopted some of the techniques of the Forum on Europe as well in order to engage the public as actively as possible.

Beyond such a landmark Commission and the consultation and public debate that would accompany it we need to bring environment thinking to the decision-making table on an ongoing basis. This Government promised as much in their Programme for Government in 1997 and yet nine years later they are refusing even to consider allowing environmental interest groups join the Social Partnership process. This is as absurd as it is unacceptable. Climate and energy are going to dominate public debate in the coming decades in the way unemployment and emigration did in the 1980s. When we look back from 2016 the Government's continued resistance to involving environmental organizations in Towards 2016 would look as misguided as an effort to exclude trade unions in 1987 would have looked in 1997. Now is the time to have around the table people whose priority is to highlight the environmental bottom line, complementing the economic and social bottom lines that are well represented, thereby ensuring sustainability. As part of the integration of environmental interest groups into partnership Comhar, the multi-stakeholder forum on sustainable development, should move from the Department of Environment to the Department of the Taoiseach, where it would join other partnership bodies such as the National Economic and Social Council and the National Competitiveness Council. It should also be resourced to a comparable level to ensure adequate environmental data and analysis are available to the social partners.

Summary of Recommendations

- Enact a Climate Security Act which makes a 3% year on year reduction in Ireland's greenhouse gas emissions the law.
The only way to make the shift to sustainability is in a planned, managed, step-by-step way. It can't be done at the last minute and the only alternative would be to leave it to energy and climate shocks to achieve it by disruption and upheaval.
- Apply the polluter pays principle across the whole economy and society. Put a price on carbon (through tradeable carbon credits or carbon charging) that encourage firms and consumers to find the most effective and efficient way to cut emissions.

- Establish an Independent Commission on Sustainable Development, headed by a public figure held in high regard, to take the long view to 2050, engage the public and make recommendations on the steps Ireland should take to do our fair share to prevent dangerous climate change, enhance quality of life and promote social cohesion.
- Involve environmental interest groups in Social Partnership in line with their request to participate.
- Move Comhar, the stakeholder forum on sustainable development, from the Department of Environment to the Department of the Taoiseach, where it would join other partnership bodies such as the National Economic and Social Council and the National Competitiveness Council. Resource it accordingly.

4. Energy

4.1. Introduction

This chapter of the consultation document, and the revised NCCS, should describe carbon emissions under a number of scenarios. Currently, it gives no indication of the potential contribution of reductions in demand from energy efficiency, the amount of CO₂ per kw/h which would be generated under various generating scenarios; the type of generating technologies which should be encouraged; the ways in which market failure might be overcome to ensure that those generating technologies which will contribute most effectively to reducing CO₂ emissions are put in place; and how to ensure the short term commercial interests of energy companies are not realised at the cost of imposing a major future bill on Irish consumers. The basis of the figures for falling CO₂ intensity in the present decade is not clear since this decade has been associated with imports from Northern Ireland and Scotland.

Further, the failure to link this chapter to the dynamic of the all island electricity market (SEM) is, to say the least, surprising. What are the total emissions from this sector across the island forecast to be? In what way is the SEM designed to reduce CO₂ emissions either through promoting generation efficiency; reducing demand; or expanding renewables?

4.2 Energy efficiency

Renewable energy schemes will be a vital component in the energy mix in a low carbon future. However, measures which increase energy efficiency, reduce demand and improve demand management are the most cost effective way of reducing CO₂ emissions. For example, the potential CO₂ reductions of a home-owner installing a micro-CHP wood pellet fired boiler will be undermined if the home is poorly insulated and draughty. Insulating homes to a very high standard and installing low energy lights and other appliances are simple and less contentious steps, compared to building a large wind farm or an anaerobic digester with a CHP plant. These measures are easy wins and should be promoted with appropriate grants, tax cuts and other mechanisms. Efficiency gains should be rigorously pursued in all sectors, including transport, industry and the public sector.

The consultation document gives the impression that Ireland must wait for the European Union before taking measures to improve energy efficiency. This passivity is incredible given that the efficient use of energy is the area where domestic policy could be most effective. In discouraging plastic bags and banning smoking in public places the Government has shown that it can act resolutely and independently. Energy efficiency is an exactly analogous policy area since it too involves outlawing or strongly discouraging anti-social behaviour and encouraging good behaviour. The EU's own green paper on energy efficiency last year found that member states current energy consumption could be cut by 20% by 2020, delivering huge carbon, and cost, savings. The revised NCCS should adopt as a target a reduction in Irish energy use of 20% by 2020.

4.3 Security of supply

The consultation document describes the Government's policy on security of supply and suggests that this is a given around which compliance with Kyoto and future international obligations to reduce CO₂ emissions must work. By basing its approach to energy security on a fuel diversity policy that protects coal and peat fired generation for the long term, the Government is looking backwards rather than forwards. Energy security of the future can be achieved through reducing demand; improving generation efficiency especially through widespread distributed generation (see below); and developing diversity within renewable generation. To sink public money into burning coal and peat, and to pay for the consequences through the purchasing of allowances to achieve Kyoto compliance, is a short sighted and costly means of achieving energy security.

The paper refers to 71 per cent of Ireland's electricity being generated on gas by 2020. In the long run reliance on gas generation will have to decline as gas becomes more scarce. In the meantime it is the fossil fuel which produces the lowest emissions. A more proactive approach to changing fuel mix is needed. Conversion to gas will lead to short-term CO₂ reductions, but longer term emissions are likely to rise in line with increasing electricity demand. The long term solution is a combination of energy efficiency to reduce demand and carbon neutral technologies for what electricity is needed.

In this scenario the coal-fired plant at Moneypoint is not necessary for medium to long term security of supply. We recommend a policy be adopted whereby Moneypoint is phased out as a main generator and only used for back-up supply.

4.4 Improving generation efficiency

The review document describes the inefficiency of electricity supply. In 2004 59 per cent of the energy value of the fuel used to make electricity was lost during generation and transmission.

The review offers little by way of improvement to this clearly very wasteful situation. Unquantified gains are to be realised through three new gas-fired plants and improvements to the transmission network are also expected to improve efficiency by an unspecified amount. Friends of the Earth believes that efficiency of electricity supply can be substantially improved by prioritising development of combined heat and power and distributed generation.

4.4.1 Combined heat and power (CHP)

The obvious means of improving the efficiency of electricity generation is to engineer a shift from large scale power plants to small scale plants close to populations, ensuring that the heat produced while generating electricity is not wasted. This is appropriate technology both for using fossil fuels more efficiently and for burning biomass or biogas produced by anaerobic digestion of biodegradable waste or from existing landfill sites. The excess heat generated can be used locally for heating homes and businesses and the electricity generated has a short distance to travel to the end user thus reducing transmission losses. Such combined heat and power can range

from Micro CHP at the household level up to relatively large industrial units. The review acknowledges that CHP development in Ireland has been slow and describes a number of measures designed to improve uptake but the potential to achieve huge efficiency improvements through a fundamental shift from large centralised power stations to small localised CHP plants is not quantified or even acknowledged.

4.4.2 Distributed generation

Ireland's transmission and distribution systems are a barrier to the effective exploitation of CHP; to realising our natural advantage in renewable generation (wind, wave, tide and biomass); and to the development of solar PV. The current grid is a traditional centralised electricity generation system based on economies of scale to be achieved from combustion of cheap and plentiful fossil fuels. It assumes that small businesses, communities and individuals have no role in the generation of electricity and are merely users at the end of a one-way network.

The grid needs to be adapted to enable large scale renewables such as offshore wind and wave power as well as facilitating small scale generation. Rebecca Willis has described how electricity generation in Great Britain will change in the future:

“...much more power will be generated at community and household level through renewable and low-carbon technologies like solar and wind power, small scale combined heat-and-power, heat pumps and biomass boilers. There will still be large scale power generation especially for industrial use. But the National Grid will transform from a one-way provider of power to consumers, to a two-way web linking distributed sources of energy supply and demand. Microgrids, peer-to-peer networks linking generators within a village, housing estate or university, for example, will allow efficient use of small scale generation. This way the National Grid will become an enabler rather than an automatic provider of power, linking microgrids and allowing distributed generators to trade with each other, in order to even out supply and demand”. [Green alliance p17]

There is no reason to suppose that a very similar scenario shouldn't apply to the island of Ireland. The potential of distributed generation should not be underestimated. In Woking, Surrey in the UK,

“Over 60 local generators are linked together in a large private-wire network that powers municipal buildings, social housing and some town-centre businesses. Technologies involved include CHP, hydrogen fuel cells and solar PV arrays. Although the network is connected to the grid, it is almost entirely self-sufficient – and can work on its own if the national grid fails. Through this network Woking Borough Council have managed to reduce their energy consumption by 48 per cent and their carbon emissions by 77 per cent over 15 years”.

4.5 Renewable energy

Ireland is rich in renewable energy potential – principally wind, wave, tidal and biomass. After reducing demand for energy, the rapid development of renewable energy sources should be the priority. Progress has been good but maintaining the momentum cannot be assumed without a clear Government strategy directed at

achieving demanding targets. Friends of the Earth recommends a target of 40 per cent of electricity should come from renewable sources by 2020. This is the target Scotland is due to adopt and we see no reason why Ireland cannot achieve at least this figure.

The review makes no reference to the potential problems which will arise from having different incentives (ROCs and REFIT) for renewables on either side of the border for renewables and the danger of sub optimal location in both electricity generating terms and carbon terms. This again is a matter where the two Governments need to engage seriously and produce sustainable policy instruments which will work island wide.

4.5.1 Wind

Ireland's record in promoting wind powered electricity generation is one of improvement after a slow start. Much more needs to be done to fully realise Ireland's wind potential and to identify the limits of wind generation and how the frontier for wind can be pushed further. This would involve forecasting improvements, electricity storage and the development of complementary sources of generation during periods of reduced generation.

4.5.2 Wave and tidal energy

The potential of these technologies is clearly enormous and Government should make a clear commitment to rapidly accelerating their development and deployment. Targets should be set for the amount of electricity to produced from these technologies.

4.6 Replacing peat with biomass

Emissions from Ireland's three peat-fired power stations are particularly problematic in that the electricity produced is significantly more carbon intensive than other modern fossil fuel fired power stations. Producing electricity from peat is an anachronistic and unsustainable activity both in terms of excessive carbon emissions, and destruction of carbon sinks and important habitats.

While there is no technical barrier to burning up to 100 per cent biomass in existing peat plants, this would perpetuate the use of inefficient technology - peat fired stations operate typically at an efficiency of 40 per cent and the same would apply to biomass burning. Such a large demand for biomass would also generate significant transport impacts.

Plans should therefore be made to replace all three peat fired plants with a network of CHP plants powered by locally produced biomass, with the aim of ending electricity generation from peat by 2015. In the interim CO₂ emissions can be reduced by rapidly developing co-firing with locally produced biomass. There currently exist about 70,000 ha of cutaway bog, much of which could be used for mixed forestry. This forestry would be a source of valuable biomass, either from cuttings and thinnings, or from dedicated biomass crops.

The Institute of Grassland and Environmental Research based in Wales recommends 5

– 10 per cent of grassland be converted to growing biomass. This would allow Ireland to meet much of its biomass needs without adversely effecting biodiversity, both in Ireland and in vulnerable parts of the world, such as south-east Asia or South America.

4.7 Micro-generation

Electricity from renewable energy at domestic and small business level will need to be an important part of the future energy mix. Financial and fiscal incentives should be combined with development of the transmission and distribution system to maximise the potential of micro wind turbines, solar PV and biomass micro CHP.

4.8 Hydrogen

Hydrogen is unlikely to be in significant use much before 2030, where it will power mainly industry and some public transport. Hydrogen is an energy carrier rather than an energy source, in that it takes energy to make hydrogen. However, hydrogen can be manufactured using renewable power and deployed when the renewable power is unavailable or cannot be used. It is vital to start developing the potential of this technology now. Government should:

- set up a Hydrogen Coordination Unit;
- develop a clear transition strategy to the hydrogen economy to provide confidence and reduce uncertainty;
- substantially increase funding for public RD&D into the various aspects of the hydrogen economy including the feasibility of using the gas pipeline network for distributing hydrogen.

4.9 Carbon capture and storage

Carbon capture and storage (CCS) has rather more potential than the review, which emphasises the reduced generation efficiency and the expense of retrofitting existing plant, suggests. (It is worth noting that while €500 million to install carbon capture technology at Moneypoint is felt to be prohibitive, the Government was happy to approve a €360 million retrofit of the same power station to enable it to comply with the Large Combustion Plant Directive and thus continue to emit vast amounts of carbon dioxide).

Greater, cost-effective carbon reductions can be made, however, through improved energy efficiency and demand management; distributed generation; and a mix of renewable technologies. Nevertheless, all new fossil fuel plants should be made carbon capture ready, with immediate effect, including the 3 planned gas-fired plants.

It has to be recognised that the use of CCS has wider implications:

- Whilst there are existing CCS demonstration projects, for example CO₂ has been stored in the Sleipner gas field in the North Sea since 1996, wide scale deployment of CCS remains reliant on new, expensive and uncertain technologies.
- Although the CCS research community is confident that technical issues related to CO₂ capture, transport and storage within geological formations can

be addressed, the use of CCS to achieve carbon targets is risky given the reliance on future technological developments.

- There is a requirement for financial incentives for CCS schemes given the short-term nature of EU ETS, and the low-carbon price.
- There may be environmental impacts resulting from leakage of CO₂ from storage sites. Leakage would mean that anticipated carbon savings are not achieved.
- Long-term storage of CO₂ will require institutional, monitoring and regulatory frameworks to be implemented.

4.10 Energy suppliers' role in energy efficiency

It should be recognised that energy consumers do not require energy per se but the services that energy makes possible. Thus a householder or business does not want kilowatt-hours but light, heat and functioning appliances.

The Government should expedite the implementation of the EU Directive 2006/32/EC on energy end-use efficiency and energy services. We recommend Government place a duty on energy providers to reduce total energy consumption.

4.11 Summary of Recommendations

- Promote decentralised, distributed generation using renewable sources of energy.
- Develop the grid to facilitate the expansion of CHP and micro-generation.
- Maximise energy efficiency and demand management - measures which are the most cost-effective way of reducing CO₂ emissions. The revised NCCS should adopt as a target a reduction in Irish energy use of 20% by 2020, in line with the 2005 EU green paper on energy efficiency.
- Set a target of at least 40 per cent of electricity to come from renewable sources, principally wind, wave and tidal, and biomass, by 2020.
- Phase out the use of peat to generate electricity by 2015. In the meantime these power stations can burn increasing amounts of biomass instead.
- Phase out Moneypoint as a main generator and use it for back-up supply only.
- Rule out buying electricity generated by nuclear power from the UK and specify electricity from renewable sources only.
- All new power stations should be made carbon capture ready, including the 3 new gas-fired stations.
- Substantially increase funding for public RD&D into the various aspects of the hydrogen economy including the feasibility of using the gas pipeline network for distributing hydrogen.

5. Transport

5.1 Trends and Projections

There is undoubtedly a crisis in this important sector. The government's consultation document describes the explosion in carbon emissions from transport and the huge growth in road traffic. It suggests that emissions will climb even higher as car ownership in Ireland rises to meet the EU-15 average.

Since 1990, transport has been the fastest growing source of greenhouse gas emissions in Ireland, with a growth rate of over 144% during the period 1990-2004. In 2004, transport accounted for 18.4% of total emissions.

In light of these increases, it is difficult to understand why, without significant intervention, the review document suggests average annual emissions of CO₂ from transport would only rise to 13.03 Mt (from 12.58 Mt) over the period 2008-2012.

From the document, it is possible to calculate that 12.08 Mt CO₂ were emitted by the road transport sector during 2004. (Total emissions were 12.58 Mt in that year and road transport accounted for 96% of the total.) The document also tells us that emissions of CO₂ from road transport rose by 6.1% on the previous year. If we assume that emissions continue to rise at this rate, then the emissions up to and including the Kyoto commitment period would be thus:

Year	Mt CO ₂ emitted by the Irish road transport sector if emissions rise at 6.1% per annum, the rate at which they grew between 2003 and 2004.
2004	12.08
2005	12.82
2006	13.60
2007	14.43
2008	15.31
2009	16.24
2010	17.23
2011	18.28
2012	19.40

Average annual emissions of CO₂ during the Kyoto commitment period 2008-2012 would then be 17.29 Mt.

$$\frac{15.31 + 16.24 + 17.23 + 18.28 + 19.40}{5} = 17.29$$

The document states, however, that average annual emissions for the *entire* transport sector will be just 13.03 Mt over this period.

A further attempt is made to downplay the seriousness of the situation by subtracting out emissions originating from international fuel bunkering (where fuel is bought within the State by private motorists and hauliers but consumed elsewhere). Given that Ireland is required to report domestic sales rather than its domestic consumption and that it faces Kyoto costs on that basis, a better approach would be to increase fuel

duty to ensure parity with the United Kingdom. This should be a priority for the December 2006 Budget. Besides eliminating the problem of international fuel bunkering, this measure would slow domestic consumption and act as a driver for fuel efficiency.

5.2 Policies and Measures

One of the measures proposed is the maximising the efficiency of the existing and future transport network. This must be re-examined. The British Government's Standing Advisory Committee on Trunk Road Assessment found that road building actually generates traffic because people make journeys they were deterred from making when the road was congested. Additional road space encourages travel by road, leading people to make new and longer journeys, for example by opting to live further from their place of work or take up employment further from home. It also undermines public transport by giving car travel a comparative advantage.

5.2.1 Fuel efficiency measures

Technological Improvements

The gains delivered by fuel efficiency are too easily lost as people opt for larger, fuel-inefficient vehicles. A suite of price signals ought to be introduced, therefore, to enable a proper reflection of the polluting impact of these vehicles. An increase in fuel duty to bring about parity with the UK would be one such measure but it is critical that signals are put in place at the point of purchase, in particular there ought to be reform of VRT and annual motor tax so that vehicles are taxed according to their CO2 emissions per kilometre.

Fuel Economy Labelling

Fuel economy labelling ought to extend beyond car salesrooms, in particular to help inform purchasing decisions when cars are sold second-hand, privately or at auction.

There is a further opportunity here to help reverse the trend for large 'gas guzzlers' by labelling registration plates with a vehicle's fuel efficiency rating. As climate change moves up the political and media agenda, this public exposition of one's profligate use of energy will act as a driver for more responsible consumption. A precedent exists in the form of the EU Energy Performance of Buildings Directive and in the energy rating of kitchen appliances.

Alternative fuels

There is a real danger that Ireland's response to climate change could contribute to the trashing of sensitive habitats in the developing world to make way for plantations of biofuel crops. Already, palm oil plantations grown for human consumption across Malaysia and Indonesia have resulted in the felling of tropical rainforest and decimated orang-utan numbers.

Friends of the Earth opposes, therefore, policies which encourage imports of biofuels but supports those which pump-prime domestic production.

In addition, Friends of the Earth, in common with the UK Sustainable Development Commission, believes that the primary purpose of agriculture is the production of food, not fuel, therefore Ireland ought not to devote huge tracts of land to the growing of biofuels. The import of food from distant countries is hugely oil-dependent, and the twin drivers of climate change and rising fuel costs arising from oil peak mean that Ireland will need to become more self-sufficient in food than at present.

We would therefore recommend that the use of biofuels be prioritized for public service vehicles - buses, trains, ambulances, postal vans and so on. Public sector procurement of biofuels would provide a secure market for farmers wishing to diversify into biofuels, helping to stimulate domestic production, while at the same time restricting the size of the market in order to (i) limit imports and (ii) avoid the widespread conversion of land from food production to fuel production.

VRT and Annual Motor Tax

The 2002 Programme for Government (as well as the 2000 NCCS) contains a commitment to reform VRT and Annual Motor Tax so that cars are taxed according to their CO2 emissions per kilometre. Six years on this December's budget is the last chance for the government to implement this measure before the General Election. It would provide an important price signal at the point of sale to discourage the purchase of large, fuel inefficient vehicles.

Annual Motor Tax must be seriously punitive for the most polluting private vehicles – as much as €3000 for SUVs.

Fuel efficiency measures in public transport

As explained above (5.2.1 Alternative fuels), we recommend that the use of biofuels be prioritized for vehicles in the public sector fleet, for example buses, trains, ambulances and postal vans.

5.2.2 Modal shift

Investment in and use of public transport

The rebalancing of investment in favour of public transport is welcome, though long overdue. The percentage spend on buses and trains is, however, still only 47% whereas a sustainable transport policy would generally devote at least 65% of investment to mass transit. This is particularly important in Ireland in order to allow public transport to catch up with the private car following decades of underinvestment in public transport and huge spending on roads.

The absolute spend on public transport is important but so too is the proportion of total spend on public transport, otherwise private car travel will continue to enjoy a significant advantage over mass transit.

Rail services

At the outset, it was envisaged that the Dublin-Belfast Enterprise rail service would run at hourly intervals with a journey time of 1 hour 35 minutes, however this promise has never been honoured. Investment in the service should now be made in order that these frequencies and journey times can be achieved. This would contribute to a reduction in carbon dioxide emissions from the transport sector since there are substantial CO2 savings to be made by switching from road to rail. Otherwise the railway will find it increasingly difficult to compete with the Dublin-Belfast motorway. Public policy must ensure that all intercity travel by rail in Ireland is faster, more reliable, and cheaper than making the same journey by car.

Bus services

Dublin needs buses, not just bus lanes! The present situation is damaging the credibility of public transport as a viable alternative to the private car. The dispute over the procurement method for new buses has seriously delayed the purchasing and bringing into service of new buses.

Cycling facilities

That the number of people cycling to school and work has fallen, despite the €30m investment in cycle lanes, is evidence both of belated investment and poor design rather than any lack of enthusiasm for cycling *per se*.

In order to give cycling a much-needed boost, schools should introduce a cycling proficiency test and Government should focus investment on the creation of Safe Routes to School. Besides reducing the congestion and emissions associated with the 'school run', walking and cycling to school help to tackle the growing problem of childhood obesity.

Aviation

Aviation is a significant contributor to climate change, however international aviation falls outside the scope of the Kyoto protocol. Nonetheless, Government can take action to discourage air travel within Ireland - we can see no reason to fly from one part of Ireland to another, including the off-shore islands. Government must end, therefore, all subsidies for air routes within the State.

5.2.3 Maximising efficiency

Roads Investment

Additional road space encourages travel by road, leading people to make new and longer journeys, for example by opting to live further from their place of work or to take up employment further from home. It also undermines public transport by giving car travel a further comparative advantage.

It is impossible to justify roads spending on the grounds that it will lead to reduced CO2 emissions. The British Government's Standing Advisory Committee on Trunk Road Assessment (SACTRA) found that road building actually generates traffic because people make journeys they were deterred from making when the road was congested. In this way new road space accommodates suppressed demand but it also induces additional demand. The building of new road space addresses the problem of congestion in much the same way as loosening one's belt addresses the problem of obesity: it accommodates the growth but does nothing to address the underlying problem.

Since road building generates traffic, any CO2 savings made by eliminating congestion at bottle-necks are quickly lost by the increased emissions as thousands of new journeys are made.

Also, the increased traffic often results in congestion returning to pre-construction levels within ten or fifteen years as the new road space fills up and, once more, vehicles are emitting CO2 while idling in traffic jams.

In summary, this is the most problematic and worrisome element of the transport chapter of the Government's policy review document.

The M50 was conceived as a bypass but is today a congested high street, particularly because people use it to travel between Dublin's radial suburbs. Per kilometre road pricing is essential if the upgraded road is to be free from congestion.

Friends of the Earth is utterly opposed to the construction of a new outer ring road around Dublin. Government was correct to exclude it from Transport 21, and efforts by to reintroduce the idea into public debate are misguided.

Freight

Government appears to have given up on rail freight, however the CO2 savings to be made by switching freight from road to rail are such that Government must consider how best it could stimulate a shift from road to rail.

Beyond this tension between road and rail, however, the debate around freight raises some fundamental questions about the architecture of our economic activity. Before long, rising fuel costs and the imperative to tackle climate change will lead naturally to a restructuring of the economy in favour of localisation, with local distribution centres and short supply chains enjoying a competitive advantage in the new, low-carbon economy of the future. Government must anticipate and plan for these changes if we are to avoid the hardship and mayhem associated with fuel price shocks.

One way to do this is to support Ireland's strong local food economy - a network of small shops supplied by local farmers and wholesalers. Any further penetration into the market of the multiple retailers ought to be discouraged through the planning system. Large out-of town and edge-of-town supermarkets supplied by trucks from distant distribution centres are hugely oil-dependent. They are simply not future-proof and ought, therefore, to be denied planning permission. Instead, Government

policy must encourage retail diversity - independent stores, thriving high streets and short supply chains.

5.2.4 Demand Management

Relationship between transport and spatial policies

Ireland's low-density settlement patterns are inimical to a low-carbon future. Planning policies which permit the building of one-off houses in rural areas and urban sprawl around our towns and cities have increased reliance on the private car and undermined public transport. Car dependency is such that most rural dwellers rely on their car for 100 per cent of their journeys. It is not economically viable to provide public transport services to a dispersed rural population, indeed current settlement patterns are having an adverse impact on the frequency of services to rural towns and villages as thousands of people have opted to live beyond their reach, in the open countryside.

Many rural dwellers do not work in the countryside and instead drive long distances to work in cities and towns. Their exhaust emissions contribute to climate change. A survey of 1250 rural households in Ireland found that one quarter of rural dwellers commute more than 40 miles a day to work. The survey was carried out by 70 students on a Diploma in Rural Development provided by UCD, UCC, NUI Galway and NUI Maynooth, and its findings launched by Community, Rural and Gaeltacht Affairs Minister Éamon Ó Cuív. The survey also found that nearly 40 per cent of non-farming rural households have no involvement in any community, voluntary or sporting organisation, and have little or no contact with their neighbours. The report said: "Many commuters are simply 'sleeping' in their rural homes. This disconnectivity and lack of neighbourliness creates concern for the social fabric of many rural areas."

There ought, therefore, to be a new planning policy introduced which would limit the building of one-off houses in rural areas. To be effective, it ought to be as comprehensive as in Northern Ireland where *Planning Policy Statement 14, Sustainable Development in the Countryside* introduced an immediate moratorium on all such development, with exemptions for farming families, retiring farmers and their surviving spouses.

Dublin congestion charge

On the question of fiscal measures to encourage sustainable travel behaviours, we believe the time is right to introduce a congestion charge for Dublin, taking effect at the canals. This has proved successful and popular in London. As a further incentive to purchase fuel-efficient vehicles, a discount or exemption should apply to the least polluting vehicles, while higher tariffs should apply to the most polluting vehicles such as SUVs. The fuel efficiency ratings of vehicles, which we propose should be visible on registration plates, facilitates this differential pricing.

National Spatial Strategy

There seems to be some confusion here. The National Spatial Strategy states that transport's role in supporting balanced regional development is to:

- Ensure, through building up the capacity and effectiveness of Ireland's public transport networks, that increases in energy demand and emissions of CO₂ and other air pollutants arising from the demand for movement are minimised.

In summary, *increases* in CO₂ emissions are to be *minimised* but later the document estimates that implementation of the National Spatial Strategy contribute to an annual *saving* of 0.075 Mt CO₂ over the period 2008-2012. Is it intended that the NSS would lead to a reduction in CO₂ emissions or merely slow their growth? Of these two possibilities, the former is the only acceptable outcome.

Regarding decentralisation, Friends of the Earth is sceptical about Government plans to disperse public sector workers to 53 locations. At the very least, this policy must be subject to a climate audit. Our worry is that the policy will result in staff travelling long distances to meetings in the capital.

Road pricing

Friends of the Earth supports the principle of road pricing and believes it should be:

- used to cut carbon emissions and not just congestion
- part of a package of measures to cut traffic levels and
- used to cut the cost of public transport and raise the cost of motoring.

5.3 Options for the Future

This paragraph in the review document includes a reference to 'controlling the growth in emissions from the transport sector' which is an inadequate and unambitious aim, given the scale of the climate crisis we face. We would urge instead that the strategy set itself a target to first halt the growth in CO₂ emissions from the transport sector and then reduce them.

Public Awareness

There is only a very tentative mention of the possible introduction of a congestion charge for Dublin - a charge would not be introduced until towards the end of the ten-year Transport 21 period and only once a major enhancement of public transport capacity has been delivered. Meanwhile, a project to increase by 50 per cent the capacity of the M50 is subject to no such qualification. A congestion charge will require political leadership if it is ever to rise from the pages of this document to become a reality but the experience from London should reassure the Government here of its merits and political acceptability. One important difference is the existence in London of a directly elected Mayor and, while it is beyond the scope of this consultation, the London experience suggests that the creation of such a post could help transform transport in Dublin.

Intelligent transport systems

Intelligent transport systems can play a part in improving traffic flows, alleviating congestion and perhaps even reducing CO₂ emissions from the transport sector but they are no substitute for tackling the problems of traffic growth and rising CO₂ emissions.

One important exception is the introduction of integrated ticketing where the evidence suggests it boosts public transport patronage and facilitates modal shift. It would allow no-hassle transfers between bus, train, DART and Luas. The ongoing delay in its introduction is simply unacceptable.

Fuel efficiency measures in public body vehicle fleets

These measures are welcome but would benefit from a wider policy framework, for example a Green Procurement Strategy for Ireland

Company Car Tax

We are supportive of the proposal to reform company car tax and would encourage its implementation.

5.4 Summary of recommendations

- Government must increase fuel duty to ensure parity with the United Kingdom.
- Fuel efficiency labelling of cars should not be limited to salesrooms. The rating should be included on vehicle registration plates for all to see.
- Government must discourage the import of biofuels while pump-priming domestic production, however Ireland ought not to devote huge tracts of land to the growing of biofuels whose use therefore should be prioritized only for public service vehicles: buses, trains, ambulances, postal vans etc.
- Government must use the December 2006 Budget to reform VRT and Annual Motor Tax so that cars are taxed according to their CO₂ emissions per kilometre. Annual Motor Tax must be seriously punitive for the most polluting vehicles - as much as €3000 for SUVs.
- Government must re-balance its transport spending so that at least 65% is devoted to public transport, walking and cycling.
- Government must invest in the Dublin-Belfast Enterprise rail service such that the promised frequencies and journey times are achieved - an hourly service with a journey time of 1 hour 35 minutes.
- Public policy must ensure that all intercity travel by rail in Ireland is faster, more reliable, and cheaper than making the same journey by car.
- Dublin needs buses, not just bus lanes! The dispute over the procurement method for new buses has seriously delayed the purchasing and bringing into service of new buses which are crucial to people making the shift to public transport.
- Introduce a five-year freeze in all public transport prices to encourage people to make the shift to buses and trains.

- Schools should introduce a cycling proficiency test and Government should focus investment on the creation of Safe Routes to School.
- Government must end all air route subsidies within the State.
- Government must introduce per kilometre road pricing on the upgraded M50.
- Government must not sanction the construction of a new ring road around Dublin.
- Government must consider how best it could stimulate greater use of the railway for freight transport.
- Government must introduce planning guidance requiring local authorities to deny planning permission to large out-of town and edge-of-town supermarkets.
- Government must introduce a new planning policy to limit the building of one-off houses in rural areas, outside settlement limits.
- Government must introduce a congestion charge for Dublin, taking effect at the canals. As a further incentive to purchase fuel-efficient vehicles, a discount or exemption should apply to the least polluting vehicles, while higher tariffs should apply to the most polluting vehicles such as SUVs.
- Government plans to decentralise the public sector must be subject to a climate change impact audit.
- Government should introduce road pricing in accordance with the following principles: it should be used to cut carbon emissions and not just congestion; it should be part of a package of measures to cut traffic levels; and it should be used to cut the cost of public transport and raise the cost of motoring.
- Government must set a target for stabilising carbon emissions from the transport sector and then reducing them.
- Integrated ticketing should be introduced to allow no-hassle transfers between bus, train, DART and Luas.

6. Built environment and residential

6.1. Trends and projections

For policies which aim to reduce green-house gas emissions from the built environment and residential sector to be effective, they must deal both with how buildings are constructed and where they are constructed. CO₂ reductions gained through conversion to gas, energy efficiency and sustainable building design could be negated by rapidly rising house numbers and associated increases in traffic necessitated by scattered development patterns and edge of town shopping, for example. Building Regulations and planning policy must work together in order to make real and lasting cuts in emissions.

Domestic space and water heating account for 10 per cent of Ireland's CO₂ emissions. When electricity generation is factored in, private homes use more than a quarter of the energy used in Ireland. In addition, personal transport is a source of high, and rapidly growing, levels of climate change gases, making the residential sector a significant contributor to Ireland's emissions.

6.2. Policies and Measures

6.2.1. Spatial and energy use planning

Planning is crucial to tackling climate change. If a package of measures including liveable cities, walkable communities, higher housing densities, use of new technology and improved public transport was really pushed, then significant gains could be made in reducing carbon emissions. The National Spatial Strategy should have climate considerations at its core if it is to address all these areas. It would also have significant knock-on health benefits such as increased fitness, and lower levels of obesity, breathing problems and road traffic accidents as people walk and cycle more and drive less.

A Regional Planning Guideline on climate change should be written which would draw together areas such as residential densities, location of amenities, transport, distributed generation and embedded renewables. The Planning and Development Act 2000 should be amended so that Local Authorities are obliged to consider climate change and conservation of energy and resources when devising area plans.

The reviewed Residential Density Guidelines should recommend higher densities. This could be achieved through conversion of 'above shop' space, extensive urban infilling and high density new developments. Fiscal measures such as tax relief on brown-field sites should be considered to offset the additional costs associated with such sites. Examples of sustainable, high quality, liveable developments include the Village in Cloughjordan, Co. Tipperary, BedZED in Beddington, England, Earthsong in Auckland, New Zealand and Agraria in Ohio, USA. These represent a variety of possible approaches suitable for different locations – city, village, urban fringe and gap sites for example – and offer a high degree of flexibility.

Friends of the Earth recommends a Planning Policy Guideline similar to the Northern Ireland Planning Policy Statement 14 be introduced. Under such a guideline building new single dwellings in the countryside would be severely curtailed, and limited to genuine rural workers, retired farmers and those who can demonstrate a need. It is unsustainable to continue to suburbanise the countryside in the way which has been so prevalent in recent decades.

It is important to draw a distinction between housing need and want. It is the role of the planning authorities to provide for housing needs, not housing wants. To this end it is a legitimate function of planning guidelines to place restrictions, or complete prohibitions, on development in certain areas, and to provide encouragement and support for development in areas which facilitate the provision of public services and the delivery of public policy goals .

6.2.2. Energy efficiency in new buildings

Friends of the Earth supports the introduction of a household energy labelling scheme in line with the Energy Performance of Buildings Directive. Such a scheme should be simple and understandable. A suitable model would be the existing efficiency labelling scheme for domestic white goods. The scheme should be sufficiently long term to enable higher efficiency standards to be progressively introduced. Existing Building Regulation Standards could be rated at 'D', for example, with Sustainable Energy Ireland's 'House of Tomorrow' and EcoHomes having a correspondingly higher rate. 'A' ratings should be reserved for truly carbon neutral developments with transport requirements, electricity generation, and the embedded energy of the building materials factored in.

Friends of the Earth welcomes the move by Dún Laoghaire-Rathdown County Council to amend its County Development Plan to specify energy efficiency standards in new developments of 60 per cent over current Building Regulations, with 30 per cent of space and water heating to come from renewable sources. If we want to future-proof our living and working spaces this is a model worth emulating across the country. As a minimum the Building Regulations should be reformed to make the minimum standard at least that of Sustainable Energy Ireland's 'House of Tomorrow'.

Developers should be incentivised to meet the higher standards by reducing VAT on renewable energy technologies and insulating materials or offering a tax refund, for example.

The figures for CO₂ reductions cited in this section of the consultation document would appear to be erroneous. It is difficult to see how improved building regulations could lead to the actual reductions claimed, when house numbers are increasing at the rate given. Even if the new homes were entirely carbon neutral, this could only result in a levelling of emissions. Perhaps the figures cited refer to CO₂ savings compared to a 'do nothing' model rather than actual reductions from current emissions levels. If this is the case it is both disingenuous and inadequate.

6.2.3. Energy efficiency in existing buildings

The energy labelling scheme outlined above should be extended to include existing buildings. The public interest is not served by delay. It is feasible for older housing stock to achieve 60 per cent efficiency gains through appropriate insulating, weather-proofing, fuel switching, installing efficient appliances and lighting, and behavioural change. The 40 Percent House project (www.40percent.org.uk) demonstrates how it is possible to reduce energy use in a range of existing properties to 40 per cent of typical usage.

Friends of the Earth recommends the Low Income Housing Programme be expanded to include retrofitting of renewables. The “Greener Homes” grants should be extended and enhanced to cover insulation and other energy saving measures as well as the current renewable energy options. For people who struggle to afford the often high upfront costs of installing renewables technologies, these could be paid back over a long period through bills or via an interest free Government loan. These measures would make energy efficiency and installing renewables affordable; would create jobs; and would stimulate the market in materials, equipment and installation.

Linking the rate Stamp Duty to the energy rating of a home would encourage home owners to invest in energy efficiency and home buyers to opt for energy efficient homes. Higher rated homes should have a proportionately lower Stamp Duty. Uninsulated properties would then become unattractive to prospective buyers because of the high stamp duty relative to similar, insulated houses. The “Greener Homes” grant scheme should provide protection to those on low incomes who could not afford to insulate their homes and might otherwise then find themselves burdened with a less saleable property.

The other schemes listed in the document, while laudable, were not specifically designed to deal with climate change so their significance is overstated, and their inclusion here is questionable and seems to be an attempt to rebrand a hotch-potch of schemes as a climate change policy. Friends of the Earth recommends these schemes, such as the Local Authority Housing Regeneration Programme; the Area Regeneration Programme; the Central Heating Scheme; the Remedial Works Scheme; and the Low Income Housing Programme should include very high levels of insulation, retrofitting of renewables and the provision of community CHP where applicable.

6.2.4. Improved efficiency of appliances

Friends of the Earth supports the measures outlined in this section of the consultation document, but more could be done to improve the energy efficiency of appliances. Appliances below an A rating could be banned for example, or a carbon tax applied which would make less efficient appliances expensive and unattractive. In addition, the rating system should be based on absolute consumption in order to reverse the trend towards larger appliances which use more energy, albeit more efficiently.

An appliance such as a TV or DVD player on stand-by typically uses about 7 per

cent of the daily electrical demand for the entire household. It is technically feasible for the stand-by mode to be time bound so that the appliance switches itself off fully after a set period. This would prevent appliances being left on stand-by during the day when people are at work or during the night. Ireland should propose and support a measure at European Union level that such electronic appliance sold in the EU have this function.

Many appliances, such as fridges, air conditioners and water-heaters, are controlled by thermostats. They maintain a constant temperature by powering up for a short period and then shutting off again. A new sensor has been developed to work alongside the thermostat. It continuously measures the electricity grid to check whether supply and demand for electricity were matching. If supply exceeded demand, it powers the appliance up slightly earlier or shuts off slightly later than the thermostat would. If demand exceeded supply, it can power up the appliance slightly later or shut it off slightly earlier. Trials show this has no effect on the performance of the appliance but does smooth demand for electricity, reducing the need for expensive and polluting back-up generation.

Low energy light bulbs are much more efficient than standard incandescent bulbs. Light Emitting Diodes (LEDs) are more efficient still. Each household should be given a number of vouchers, 5 or 6 for example, which can be exchange for free compact fluorescent light bulbs. This could be done through the ESB, for example. At the same time, incandescent bulbs should be taxed at a high rate to make them an unattractive option and eventually phased out.

6.2.5.Changing fuel mix

A more proactive approach to changing fuel mix is needed. Conversion to gas will lead to short-term CO₂ reductions, but longer term emissions are likely to rise in line with increasing numbers of homes. The solution is a combination of carbon neutral technologies and energy efficiency.

Micro Combined Heat and Power (CHP) using biomass or possibly biogas produced by anaerobic digestion of biodegradable waste or from existing landfill sites is a viable option for both space and water heating, and electricity generation. CHP plants are around 40 per cent more efficient than conventional power plants which waste most of the heat they produce in the electricity generation process. The Institute of Grassland and Environmental Research based in Wales recommends 5 – 10 per cent of grassland be converted to growing biomass. This would allow Ireland to meet much of its biomass needs without adversely effecting biodiversity, both in Ireland and in vulnerable parts of the world, such as south-east Asia or South America.

6.2.6.Public sector

The Public Sector has the potential to stimulate the market in energy efficiency and micro-renewables. The Northern Ireland Civil service estate has a target to be carbon neutral by 2015. If a similar target was introduced for the entire Irish public sector it would make significant contribution to meeting Ireland's Kyoto obligations. Such a measure would also provide clear leadership for the private

and community sectors.

The plans to decentralise the public sector could have significant implications for Ireland's carbon emissions. Friends of the Earth therefore recommends a climate impact assessment be carried out for the decentralisation plans. Decentralisation could result in more people travelling further, to work and to and from meetings in Dublin, for example. At the very least any buildings refurbished or built as part of decentralisation should be carbon neutral – that is built to the very highest standards of energy efficiency and inbuilt power generation possibilities. Done well this could demonstrate political leadership on climate change. Anything else would indicate a complete lack of seriousness about reducing Ireland's climate pollution.

6.3. Options for the future

The options suggested above should be progressively rolled out in the short to medium term. The imperative to tackle climate change and reduce CO₂ emissions demands immediate action. The housing policy statement currently being prepared should specify that carbon neutral developments with embedded renewables and passive heat and cooling should be the norm. The current, unsustainable, scattered pattern of development should give way to compact, medium to high density urban areas incorporating community scale CHP.

6.4. Summary of Recommendations

- A Regional Planning Guideline on climate change should be written which would draw together areas such as residential densities, location of amenities, transport, distributed generation and embedded renewables.
- Tax relief on brown-field sites should be introduced to offset the additional costs associated with such sites.
- A Planning Policy Guideline which restricts the development of single dwellings in the countryside should be drawn-up.
- The new scheme to label homes according to their energy efficiency, to be introduced in line with the EU Energy Performance of Buildings Directive, should rate the current Building Regulation Standards no better than a 'D'. 'A' ratings should be reserved for truly carbon neutral developments.
- VAT on renewable energy technologies and insulating materials should be reduced to make them more affordable and stimulate the market.
- Stamp Duty rates should be linked to the energy efficiency rating of the property so that the better rating it has, the less the Stamp Duty is.
- Building Regulations should be reformed with the regulatory standard being at least that of Sustainable Energy Ireland's 'House of Tomorrow'.
- The "Greener Homes" grants should be extended and enhanced to cover insulation and other energy saving measures as well as the current renewable energy options.
- Ireland should propose and support a measure at European Union level that electronic appliance such as TVs, DVDs and stereos sold in the EU have a 'time-bound' function which switches the appliance off after a set period of inactivity.
- Provide each household with free low energy light bulbs (CFLs) and raise the tax on standard incandescent bulbs to make CFLs price competitive.
- Make the public sector carbon neutral by 2015.

7. Industry, Commerce, Services

7.1 Trends and Projections

Industry representatives repeatedly declare that business is doing its fair share to reduce carbon emissions. However the Government figures underlying the public consultation document paint a different picture. As things stand climate pollution from this sector is on track to have risen 50% by 2012 compared to 1990 levels. Our Kyoto commitment is to keep the increase in Irish emissions to 13%. Furthermore, business's share of Ireland's overall climate pollution is on track to rise from 17.7% in 1990 to 20% in 2012.

7.2 Policies and Measures

Investment analysis

The National Climate Change Strategy (NCCS) in 200 said "All industrial development agencies, coordinated and supervised by the Department of Enterprise, Trade and Employment, will examine inward and indigenous investment proposals and opportunities from the perspective of impact on greenhouse gas emissions." Six years later the Government's review document says an inter-agency group is "is considering mechanisms for assessing the greenhouse gas impacts of investment proposals".

Taxation

The NCCS said taxation "will be a significant instrument in this sector". The Government abandoned plans for a carbon tax in the face of industry lobbying.

Negotiated agreements

The NCCS said "these are a key component of the partnership approach to economic development ... all negotiated agreements must be significantly beyond business as usual scenarios [and] offsetting efficiency gains against reductions to tax levels arising from negotiated agreements will only be provided for to the extent that the reductions arising from the negotiated agreement are comparable to those achieved through best international practice"

As soon as the Government abandoned plans for the carbon tax any incentive for companies to engage SEI in order to elaborate a negotiated agreement evaporated and shortly afterwards they were forced to abandon the scheme. Instead business-as-usual rises in emissions continued.

Emissions Trading

Of the key policy instruments outlined in the NCCS to limit climate pollution in this sector, only the EU Emissions Trading Scheme (ETS) survives. However, while the ETS covers 100% of cement manufacture and other industry processes and much of the emissions from manufacturing it only covers 2.5% of the commercial and services sub-sector. Meanwhile emissions from this sub-sector rose by just under 30% between 1990 and 2004 and on are track to have risen by 80% by 2012.

The ETS itself is an important first step in that it put a cap and a price on carbon emissions from participants in the scheme across the EU. However it is flawed, in that the cap is too loose and the price is too low. Too many countries, in the face of exaggeration and hyperbole from their trading sectors, over-allocated allowances to the traded sector for the first period (2005-2007). On this score Ireland did not do too badly and the EPA, the Government and the consultants deserve credit for this. With regard to the second flaw, however, that of price, Ireland did as badly as anyone as it design flaw common to the scheme in all countries: The permits are given away to the companies involved, instead of auctioned as economists and environmentalists had recommended. The amounts to a billion-euro transfer from the taxpayer to the big-polluters. Many polluting companies got 97% of the permits they needed to cover their emissions for free. This means that they only have to decrease their pollution by 3% to avoid paying any price for their carbon pollution. It's only if they want to increase pollution will they have to buy a significant number of permits. Furthermore, in their accounts they treat the permits they get for free in the same way as any permits they have to buy. They are after all a saleable asset. In turn as they use them to produce the goods they sell to consumers the "cost" of the permits gets passed on to the customer. They could after all simply have stopped making things and sold the permits for a profit. No wonder industry representatives around Europe resisted talk of a pan-European carbon tax instead of a trading scheme and resisted proposals to auction the permits instead of giving , them away. The bottom line is that this mechanism which is supposed to put a price on carbon emissions as an incentive to cut pollution produces only a weak incentive to business while producing increased costs for consumers.

There are no signs that this pricing flaw will be fixed in time for the 2008-2012 trading period. Countries can, however, choose to auction a proportion on the permits if they wish. Unfortunately, for unexplained reasons the Irish Government is only planning to auction 0.5% (one two hundredth) of the 22.628 million tones of carbon emissions permits allocated to the traded sector for the 2008-2012 period, even less than the 0.75% being auctioned in the current period.

On the issue of the level of the cap it is expected that the European Commission will come down hard on countries whose caps were too loose in the 2005-2007 pilot period in an effort to ensure that the scheme will deliver actual reductions in emissions during the 2008-2012 Kyoto period. Ireland is one of the few countries that is seeking to *increase* the level of permits allocated to the traded sector for the next period. The 22.628 million tone allocation a year is 1.5% up on the current period and represents a free allocation to the traded sector of about 23% more emissions than the sector was responsible for in 1990. Our Kyoto commitment is to limit growth to 13% which would presume an allocation to the traded sector of under 21 million tonnes. Such an allocation of permits would indicate industry was indeed willing to take responsibility for its fair share of Ireland's Kyoto commitment. Of course it would be even better if they were prepared to pay for them. As it stands the government plans to hand over to industry, every year, permits worth at least €300 million and potentially up to €600 million depending on the strength of the carbon market. It remains to be seen if the European Commission will challenge either the level of Ireland's cap or the fact that we are auctioning such a small proportion of the permits.

7.3 Options for the future

Carbon pricing

It remains the case that the prevailing economic advice is that carbon pricing across the economy is the best way to encourage firms to cut pollution. For those areas it covers the European Trading Scheme is a step in the right direction but Ireland must apply it more rigorously in the short-term and propose and support its reform in the medium term. There is no good reason why Ireland's allocation to the traded sector for the 2008-2012 period should be any higher than 13% above the traded sector's emissions in 1990, in line with Ireland's Kyoto commitment. The Government should also auction as high a proportion of the permits as permissible. In the medium term the scheme has to be reformed at the European level. At the very least auctioning must become the norm for the vast bulk of the permits.

A number of other proposed reforms for the post 2012 period have been suggested and should be given serious consideration, such as the idea of moving the application of the scheme upstream to importers and producers of primary fuels, and indeed the idea to combine such upstream application of the permits with their downstream distribution to the public for free. The public would then simply sell them on to financial institutions who would make the market for those needing permits. That way however members of the public will have a tangible incentive to reduce their own energy use so as not have to spend the full value of the permits they sold on higher fossil fuel costs. The application of the scheme in this way also protects lower income households, who consume less energy than richer households but for whom it constitutes a higher proportion of their income, for any negative financial impact. Indeed the equal distribution of the permits among the adult population is progressively redistributive.

Before 2012 the Government should support efforts to establish a similar cap and trade scheme covering aviation. One idea that deserves consideration is that of establishing a trans-European cap and trade scheme for all transport not just aviation.

Meanwhile the Government must decide how best to apply the polluter pays principle to the non-traded sector of Ireland's economic activity. It is only fair and reasonable that when the Kyoto commitment period starts on 1 January 2008 that all economic actors are facing a similar price signal to cut carbon emissions. The simplest path would be to apply the carbon tax as previously planned for. But Friends of the Earth is open to other forms as carbon pricing, such as a domestic cap and trade system, as long as it is comprehensive, transparent and socially equitable.

7.4 Summary of Recommendations

- The Government must restore the polluter pays principle to the heart of Irish climate change policy by applying carbon pricing across the whole economy.
- The Government should revise the National Allocation Plan for Ireland's participation in the European Trading Scheme. There is no reason why the traded sector should be allocated permits for emissions more than 13% above their 1990 levels, in the line with our Kyoto commitment. And as many of the permits for the 2008-2012 period should be auctioned as allowed under the scheme.

- Domestically the government should decide between a carbon tax or a cap and trade scheme so that all economic actors face a similar price signal to cut emissions from the start of the Kyoto commitment period on 1 January 2008.
- Ireland should propose and support the early reform of the European Trading Scheme for future periods to ensure the cap does indeed tighten over time, reducing emissions, and that business actually pays for all the permits it needs. Even before 2012 aviation should be included in a parallel scheme covering transport emissions.

8. Agriculture

8.1 Trends and Projections

Research has demonstrated that although decoupling may lead to reduced emissions from agriculture as a whole, this may mask increased emissions from the dairy, pig and poultry sectors as these farmers intensify further in an attempt to maximum returns from their investment in capital-intensive milking parlours and sheds, in order to compete in the global market.

8.2 Policies and Measures

8.2.1 Overview

Friends of the Earth welcomes the commitment made in the consultation document to continue support payments to farmers post-decoupling, in exchange for the provision of public goods. We view as immensely important the role that farmers play in producing food, protecting and promoting biodiversity, managing landscape and conserving natural resources.

Friends of the Earth, in common with the Sustainable Development Commission in the UK, believes that the primary purpose of agriculture is the production of food, however there is also a secondary role for agriculture in growing biofuels, fibres and construction materials, and in the treatment of waste.

Our global food production system is heavily oil-dependent. For example, long supply chains rely on oil to fuel the aeroplanes, ships and trucks which transport our food from one side of the world to the other. Ninety seven calories of transport energy are needed to import 1 calorie of asparagus by plane from Chile, and 66 times more energy is consumed when flying carrots into Ireland from South Africa than is obtained by eating the carrots! Every time we eat, we are essentially 'eating oil', however the twin drivers of oil peak and climate change mean that it will become less and less economically viable to import so much food from overseas. Meantime, Ireland must not lose the farming skills needed to feed itself.

The consultation document goes on to state:

A critical consideration in national climate change policy is to balance the environmental objective of greenhouse gas emissions reductions with the economic and social objective of promoting the development of a rural economy, which sustains the maximum number of farm families and rural households.

The goals of climate change mitigation and the promotion of healthy rural economies are presented as opposing tensions between which policy-makers must reach a compromise. Low-input and organic agriculture, however, replaces energy-intensive inputs with human labour, so helping to meet both objectives. Sustainable farming practices are more labour-intensive than conventional ones - they typically require more skilled and unskilled labour than conventional farming. For example, patch spraying can reduce farmers' herbicide bills by 95 per cent with no impact on yields, by effectively substituting labour and knowledge for the blanket application of pesticides. One study carried out for the UK Department of Environment, Food and

Rural Affairs found that the average energy saving through organic production is 42%. The improved energy efficiency in organic systems is due, in part, to lower inputs of pesticides and lower levels of mechanisation. In organic agriculture, much of the planting, weeding and harvesting is done by hand which creates employment and helps to ensure healthy rural economies.

We would therefore urge Government to adopt an ambitious target for conversion to organic production methods.

We would also urge Government to introduce incentives for conventional farmers to reduce their climate impacts by adopting some of the low-energy techniques used in organic agriculture, without necessarily becoming fully organic. Given the rigorous procedures involved in organic certification this is likely to have the bigger impact in the short to medium term.

8.2.2 Animal diet

Friends of the Earth would generally counsel against the switch from grass to concentrates containing coconut oil. Any move away from grass-based, extensive agriculture is a step away from sustainability in the direction of industrialised agriculture. While coconut oil may lead to reduced emissions of greenhouse gases from animals farmed in Ireland, coconut oil is produced abroad and imported into Ireland, generating significant emissions in the process. This is one example among many where the consultation document ought to consider global emissions and not just those for which Ireland is directly responsible.

In summary, we would only support the use of coconut oil in animal diets if a *global* emissions budget indicated that the climate change impact of its production overseas and transport to Ireland was less than the saving made by adding it to animal feedstuffs.

8.2.4 Manure management and agricultural soils

Rural Environmental Protection Scheme (REPS)

REPS has clearly succeeded in reducing the use of nitrogen fertilisers in Irish agriculture, in particular chemical fertilisers. In view of this and its other environmental benefits, Friends of the Earth would urge Government to adopt an ambitious target for the uptake of REPS.

EU Nitrates Directive

There is no mention in the document of the very heavy use of fossil fuels in the production of chemical nitrogen fertilisers. This may reflect the demise of the Irish fertiliser industry and the document's focus on those emissions which Ireland is required to report under the Kyoto protocol. We would urge policy-makers to consider emissions for which Ireland is responsible, even if they originate outside the State.

Friends of the Earth views as shameful the recent deal struck with the European Commission in which Ireland is likely to be granted a derogation from the Nitrates Directive requirement to restrict application of fertiliser to 170kg per hectare per year. Instead, Irish farmers may be allowed to apply up to 250kg fertiliser per hectare annually. Full implementation of the Nitrates Directive would help Government to meet both its Kyoto objectives on climate change mitigation and its water quality objectives under the European Nitrates Directive. Government must not apply for a derogation from the Nitrates Directive limit on fertiliser application to farmland. At the very least, the rules of a derogation must be so tight as to discourage farmers from applying. Government must ensure that any derogation does not allow the contamination of water, soil or air and should not apply to more than 5% of farms.

Farmers in Denmark view slurry as precious fertiliser, not a troublesome waste product. This change in mindset means that farmers in Denmark are barely aware of the closed period. Indeed, it could safely be abolished! And because they view slurry as a precious resource, they only apply it when nitrogen uptake by soil is greatest, in the spring and summer.

8.3 Options for the Future

Improved slurry spreading techniques

In order to maximise the nutrient potential of slurry, minimise chemical nitrogen fertiliser inputs and reduce ammonia emissions to air, Government ought to phase out support for low trajectory splash plate slurry spreaders and substantially increase grant aid for the trailing shoe method.

Support for bio-energy crops

Regarding the growing of biofuels in Ireland, clear standards are needed to ensure a baseline for production, for example on inputs, conservation methods, soil protection and cropping regime, so that policies are not put in place which create environmentally damaging crops and technologies.

There is a real danger that Ireland's response to climate change could contribute to the trashing of sensitive habitats in the developing world to make way for plantations of biofuel crops. Already, palm oil plantations grown for fuel across Malaysia and Indonesia have resulted in the felling of tropical rainforest and decimated orang-utan numbers. Friends of the Earth opposes, therefore, policies which encourage imports of biofuels but supports those which pump-prime domestic production.

There is, however, one final qualification. Friends of the Earth, in common with the UK Sustainable Development Commission, believes that the primary purpose of agriculture is the production of food, not fuel, therefore Ireland ought not to devote huge tracts of land to the growing of biofuels. The import of food from distant countries is hugely oil-dependent, and the twin drivers of climate change and rising fuel costs arising from oil peak mean that Ireland will need to become more self-sufficient in food than at present.

Manure management through the use of new and emerging technologies

Friends of the Earth would urge Government to look to Germany and Scandinavia in its investigation of new and emerging technologies which may help to minimise pollution from farm waste and maximise its energy potential. Such technologies include:

- gasification
- conversion to pellets for use as a horticultural fertiliser
- anaerobic digestion
- Combined Heat and Power: the use of slurry to heat homes and/or intensive pig and poultry housing units.

Agricultural soils – optimisation of nitrogen use

The introduction of clover will require reseeded but this has benefits for a 20 year old sward because ploughing in the phosphate near the surface increases soil fertility and prevents phosphate losses to rivers and other watercourses where they cause nutrient enrichment and pollution. Set against the benefit of using nitrogen fixing plants such as clover are the machinery passes associated with reseeded which lead to transport emissions.

Dairy farmers reseed regularly which lends itself to the use of clover, however intensive dairying requires complex nutrition, therefore further investigation may be needed to establish how clover can be used in this sector.

Clover has much to offer the sheep and beef sector and its use should form a major contribution to a climate change strategy, reducing fertiliser demand while maintaining soil nutrient status.

Minimum tillage systems

Friends of the Earth supports minimum tillage systems. We also support cropping practices that reduce machinery passes.

General comment

This chapter of the Government's consultation paper is essentially a *post-hoc* rationalisation of existing research initiatives and it is difficult to discern what added value the strategy brings to the problem of climate change emissions arising from Irish agriculture.

The other difficulty is the document's somewhat narrow focus on emissions which Ireland is required to report under the Kyoto protocol, rather than the knock-on effects of Irish food and farming policy on global emissions. For example, there is no mention of food miles or fodder miles - the distance travelled by food and animal fodder from its source to its eventual destination. We would urge policy-makers to consider emissions for which Ireland is responsible, even if they originate elsewhere.

Transporting food long distances is energy inefficient. We put in more energy (in the form of fossil fuels) than we get out (in the form of food calories). For every calorie of iceberg lettuce flown in from Los Angeles, we use 127 calories of fuel.

Long distance transport also emits carbon dioxide. One sample basket of imported produce could release as much CO₂ as the average four-bedroom house uses in cooking for eight months. The 26 products examined by Sustain, a UK pressure group campaigning for sustainable farming, collectively travelled a distance equivalent to six times around the equator (241,000 kilometres).

A key indicator of the unsustainability of the contemporary food system is the ratio of energy outputs to energy inputs - its embodied energy. The energy ratio (energy out/energy in) in agriculture has decreased from being close to 100 for traditional pre-industrial societies to less than 1 in the present food system, as energy inputs, mainly in the form of fossil fuels, have gradually increased.

The document ought to chart a path towards sustainability for the Irish food and farming industry. To mitigate climate change, Irish farm policy must focus on low-input systems, of which organic agriculture is the best-known example. One study carried out for the UK Department of Environment, Food and Rural Affairs found that, based on average yields, the energy saving through organic production ranges from 0.14 Mj/kg to 1.79 Mj/kg with the average being 0.68 Mj/kg or 42%. The improved energy efficiency in organic systems is largely due to the lower (or zero) fertiliser and pesticide inputs, which account for up to half of the energy input in conventional potato and winter wheat production and up to 80% of the energy consumed in some vegetable crops. In another study carried out across several European countries it was found that synthetic fertiliser accounted for a large percentage of energy inputs. In the case of wheat cultivation, fertilisers amounted to 51% and pesticides 6% of the total energy consumption.

Policy-makers must also encourage short supply chains, enabling more farmers to service local markets rather than producing food for export. A reduced reliance on imported food and animal feed will be necessary, creating new opportunities and help to sustain rural economies. For instance, Ireland is a net importer of grain while Europe is a net importer of plant protein. We could increase the amount of indigenous plant protein grown in Ireland (peas, beans and especially lupins) in order to reduce the food miles travelled by imported soya and maize meal.

Finally, maize is a good source of protein and the practice of growing maize under plastic is becoming more widespread, therefore breeding varieties of maize which are capable of growing in Ireland without plastic would help to reduce agriculture's oil dependency and environmental impact. Government should identify and promote breeding varieties of maize which are capable of yielding competitively in Ireland without plastic.

Summary of recommendations

- Government should adopt an ambitious target for conversion to organic production methods.

- Government must introduce incentives for conventional farmers to reduce their climate impacts by adopting some of the low-energy techniques used in organic agriculture, without necessarily becoming fully organic.
- Government should adopt an ambitious target for the uptake of REPS.
- Government ought to consider emissions for which Ireland is responsible, even if they originate outside the State, such as the carbon dioxide emissions which result from the manufacture of chemical nitrogen fertilisers.
- Government must not apply for a derogation from the Nitrates Directive limit on fertiliser application to farmland. At the very least, the rules of a derogation must be so tight as to discourage farmers from applying. Government must ensure that any derogation does not allow the contamination of water, soil or air and should not apply to more than 5% of farms.
- Government ought to phase out support for low trajectory splash plate slurry spreaders and substantially increase grant aid for the trailing shoe method.
- Government must set clear standards for bio-energy crops to ensure a baseline for production, for example on inputs, conservation methods, soil protection and cropping regime. The primary purpose of agriculture, however, is the production of food, not fuel, therefore Ireland ought not to devote huge tracts of land to the growing of biofuels.
- Government must encourage short supply chains, enabling more farmers to service local markets rather than producing food for export.
- Government should encourage the growing of indigenous plant protein (peas, beans and especially lupins) in order to reduce imports of soya and maize.
- Government should identify and promote breeding varieties of maize which are capable of yielding competitively in Ireland without plastic.

9. Waste

Waste management policy has significant potential to influence future greenhouse gas emissions. Emission savings can be gained through implementing waste prevention policies, and emissions will be generated by waste disposal options such as methane from landfill, nitrogen dioxide from composting and NO₂ and CO₂ from incineration or waste to energy.

This is explicitly recognised in the review of the NCCS: “the Government recognises that in overall terms, source separation of MSW followed by recycling (for paper, metals, textiles and plastics) and composting and anaerobic digestion (for putrescible wastes) gives the lowest net generation of greenhouse gases compared to other options for treatment of bulk MSW”.

In climate terms, the focus of the Governments waste management strategy and preferred waste treatment options have the potential to influence the degree of reduction of generation of greenhouse gas emissions from waste that can be achieved. The NCCS review states that “the diversion of biodegradable waste from landfill to waste-to-energy is a primary objective of waste management policy on the grounds of environmental efficiency, but will also contribute to a net reduction in emissions”.

Consideration of GHG emissions from the waste sector in the review focuses on methane from landfill and there is no discussion of carbon dioxide emissions or other greenhouse gases. The assumption seems to be because landfills produce methane, moving material away from landfill will produce a net reduction in emissions, yet this is not supported by analysis of emissions of all greenhouse gases from waste management options. Landfills are poor performers in a climate sense because they generate methane, but generating methane does not necessarily mean that landfills must be poor performers if efficiency of capture of methane is improved. Studies have shown that at best practise rates of methane capture (80%), incineration performs worse than landfill in terms of greenhouse gas emissions³.

It has already been recognised that the best option for reducing greenhouse gases emissions lie at the top of the waste hierarchy, yet Government policy supports the expansion of waste to energy which will generate further climate pollution. ‘Waste to energy’ is a catch all term that refers to a range of technologies with differing impacts on climate change.

A recent research report by Eunomia Research and Consulting Ltd examined the climate impacts of the different waste management options. As the debate around climate change has become intertwined with the discussion around the generation of energy, ‘energy from waste’ technologies were compared to fossil fuel power generation in terms of the amount of fossil fuel derived CO₂ released per unit of energy produced. The analysis was carried out based on current technology and on what is likely to be possible in 2020 (though not including any carbon capture technologies). The results show that electricity-only incinerators emit 33% more

³ HM Customs and Excise (2004) Combining the British Government’s two health and environment studies to calculate estimates for the external costs of landfill and incineration

fossil fuel CO₂ per unit energy generated than gas fired power stations and in 2020 such incinerators will emit 78% more fossil CO₂ than gas fired power stations and only around 5% less than coal-fired power stations.

The study also considered the climate impacts of dealing with residual waste. The best thing to do with residual waste is to phase it out, however residual waste will continue to exist for some time and so must be dealt with. Instead of incineration, a better option from a climate point of view is an Mechanical Biological Treatment process that extracts both the metals and plastics with the stabilised residue going to landfill⁴.

The Government's policy of expanding the role of incineration styled as 'waste to energy' is unpopular with the public and local authorities. There are other ways of generating energy from wastes (other than incineration) and diverting biodegradable wastes from landfill, which may be more acceptable to the public, such as anaerobic digestion. The methane produced during this process can be captured for combustion. Waste policy is a key part of improving Ireland's sustainability and minimising impacts on the climate. The diversion of biodegradable wastes from landfill to incineration with energy recovery is not the best option in terms of generation of climate pollution. Instead, waste policy which focuses on waste prevention and phasing out of residual wastes, recycling and composting, coupled with anaerobic digestion and MBT for residual wastes and increased capture of landfill gas, will deliver more from both the perspective of decreasing climate pollution and wider environmental sustainability.

Environmental policy is interconnected and there is a need for consistency across different policy areas. There is currently discussion within Europe, on the Commissions proposals for the Thematic Strategy on Waste Prevention and Recycling and the redraft of the Waste Framework Directive. In particular, the issue of what should be defined as recovery has become an issue. To maximise the synergies between delivering a reduction in Ireland's greenhouse gas emissions and reducing resource use, Ireland should support the inclusion of the five step waste hierarchy with clear differentiation between recycling and composting nearer the top and energy recovery lower down. Annex II proposed to redefine certain incinerators as recovery, it is clear from both a resource use and a climate point of view it is more efficient to prevent, reuse or recycle waste, so incineration should not be promoted in this way as it will lead to diversion of waste down the waste hierarchy.

Summary of Recommendations

- The diversion of biodegradable wastes from landfill to incineration with energy recovery should not be "a primary objective of waste management policy". Is not the best option in terms of generation of climate pollution. Instead, waste policy which focuses on waste prevention and phasing out of residual wastes, recycling and composting, coupled with anaerobic digestion and Mechanical Biological Treatment for residual wastes and increased capture of landfill gas, will deliver more from both the perspective of decreasing climate pollution and wider environmental sustainability.

⁴ Eunomia Research and Consulting Ltd (2006) *A changing climate for energy from waste?* A report for Friends of the Earth: www.foe.co.uk/resource/reports/changing_climate.pdf.

10. Sinks

Friends of the Earth welcomes afforestation which is positive for biomass, habitats and biodiversity and for reinstating native broadleaves into the environment. Present afforestation in Ireland has considerable conifer plantation in comparison to broadleaf species. We would like to see increased planting of broadleaved species. Trees are very important to eco-systems in a variety of ways. Schemes to protect and improve forested areas are crucial.

However we are sceptical of the potential of afforestation to yield large scale carbon sequestration because of the lack of guarantees about what happens to the trees in future. It is essential that people are not lulled into thinking that planting trees to offset carbon emissions is a solution to climate change. Planting trees is no substitute for reducing emissions. Some countries, particularly Australia, Canada, Japan and Russia are attempting to avoid international obligations to reduce carbon emissions by planting trees and paying other countries to plant trees. Carbon sinks are not a substitute for reducing carbon emissions in efforts to combat climate change. Trees and other biomass are short term stores and are vulnerable to a changing environment - when trees die, the carbon they have stored will largely be released once again.

Development of domestic forest energy markets

Biomass is carbon neutral and Friends of the Earth supports the development of biomass crops for energy. Commitment in the revised NCCS to deliver on policy to encourage development in biomass energy would be positive. See the chapters on energy and agriculture for more detail.

Sink potential of Article 3.4 Activities

Carbon sinks aren't a substitute for reducing carbon emissions, or suitable for offsetting in efforts to combat climate change. Trees and other biomass are short term stores and are vulnerable to a changing environment. Using grasslands as sinks are too volatile especially with the extreme climate activity which we are already experiencing.

“Based on measurements of ecosystem CO₂ flux, radiation absorption by plants, crop yields and a model simulating the terrestrial biosphere, a multinational team of researchers has found that during July and August 2003, 500 million tonnes of carbon escaped from the forests and fields across Europe as a result of extreme heat and drought” Nature⁵.

Measurements need to be precise to know how much fossil carbon could be claimed to have been 'offset' but this kind of technology doesn't exist at present. Calculations often rely on default values and the ranges of estimates of carbon storage. These vary depending on the default values chosen. Soil carbon monitoring and measurements needs investment in this technology, for figures to be useable in any scheme that would claim to 'offset' fossil fuel emissions.

⁵ Nature, Dennis Baldocchi, After the heatwave, 22/9/05

Summary of Recommendations

- While afforestation is positive for biomass, habitats and biodiversity its use as a carbon sink is no substitute for reducing carbon emissions. Trees and other biomass are short term stores and are vulnerable to a changing environment - when trees die, the carbon they have stored will largely be released once again.