

***Comhar* Analysis of Priorities for Review of the National Climate Change Strategy**

1. Context

The National Climate Change Strategy (NCCS) provides for *Comhar* involvement in its review. The interdepartmental Climate Change Team (CCT) is now undertaking 1st biennial review which will lead to the publication of the National Climate Change Strategy Implementation Review (NCCSIR) in early 2003. As part of this process *Comhar* has been invited to prepare an analysis of the key priorities for the review and intensification of climate change measures, reflecting the views and concerns of the 5 pillars of *Comhar*'s membership.

At *Comhar*'s Plenary Meeting on 25th September, 2002, a Working Group was established with a mandate to consider and present initial recommendations on the review of the NCCS at the Plenary Meeting on 4th December. The analysis and recommendations in this paper were developed by the Working Group, following consideration of discussion and process papers prepared by the Department of Environment and Local Government, and discussed at the *Comhar* Plenary meeting on 4th December, 2002.

2. Summary of Analysis and Recommendations

There is broad agreement on the need to strengthen the NCCS and accelerate implementation measures given the current level and projected increase in emissions. The cross-sectoral issues of carbon taxation and emission trading are the only issues where, because of the different perspectives of the various pillars represented on *Comhar*, and given the timescale for making recommendations, it has not been possible to put forward consensus recommendations. The different perspectives are outlined further on in this paper. Otherwise, *Comhar* is agreed on the following analysis and recommendations:

- the Strategy should be strengthened by the development of interim targets or milestones along the path to the Kyoto target;

- the possibility of migrating to a cycle of annual reviews of NCCS should be actively considered by Government;
- the work of the Inventory Data Users Group, Negotiated Agreements and Economic Analysis sub-Groups (IDUG, NAG and EAG respectively) needs to be accelerated, streamlined, integrated and made more available for assessment by *Comhar*;
- the Government should ensure that the structure and implementation of emission trading in its pilot phase meets the criteria set out in the NCCS;
- if "flexible mechanisms" are to be used to meet any of Ireland's commitments, they must be subject to a transparent national vetting mechanism to ensure they promote sustainable development and operate in a manner consistent with national foreign policy and aid policy;
- contrary to the requirements of the NCCS, full quantification of the costs and benefits at sectoral level of implementing the specific measures has not been undertaken, or has been done at a level of detail that is insufficient to assess the competitiveness impacts;
- *Comhar* fully supports negotiated agreements as a mechanism for actually reducing greenhouse gas emissions but costs and quantities need to be carefully framed and implemented;
- one of the most significant avenue open to the government for strengthening NCCS remains a concerted, concentrated and dedicated effort to complete installation in Ireland of sufficient renewable energy supply to allow compliance as a minimum with our commitments under the renewables directive;
- the review of the NCCS should construct projections for a stepped pathway to delivery of the renewables target by 2010, on a similar (and cross-referable) basis to that already recommended for the strategy on the Kyoto target;
- the use of peat for electricity generation, based on a substantial cross-subsidy from less polluting forms of generation, should be phased out in favour of biomass;

- a full analysis needs to be carried out to assess the contribution of road infrastructure currently being developed to future road traffic demand levels and consequent GHG emission levels;
- modelling should be carried out to determine the appropriate level of road infrastructure investment for planned levels of usage which will allow compliance with Kyoto limits and future expected emission limits for subsequent commitment periods;
- further strengthening of Part L of the Building Regulations is needed, not only for housing, but also the setting of more stringent energy performance standards for non-residential buildings, including factories, offices and shops, and places of leisure would be welcome;
- the increasing level of scientific clarity about soil carbon emissions resulting from afforestation means the predictions for carbon sequestration by forestry in the NCCS now need to be completely revised;
- the review should give serious consideration to the issue of the institutional arrangements required to deliver the strategy; and
- the review should focus on increasing awareness of climate change across all sectors and provide practical advice and information.
- a national climate model would provide much needed support for identification of “with” and “without measures” policy development and formation, as well as providing support to awareness and education measures.

3. The need to strengthen the Strategy

Ireland began to exceed the Kyoto target in 1997 (61.8 Mt CO₂ eq) and given the current level of increases there is a potential to exceed all projections. *Comhar* notes with dismay the latest inventory figures on emissions (See table in Annex 1), particularly in terms of a trend based assessment. The latest EPA figures estimate growth in emissions in 2001 of 3.8% on 2000, amounting to an annual increase in emissions of 2.54 Mt CO₂ equivalent¹. If growth in emissions were to be merely stabilised (in other words, against trend) business as usual (BAU) annual increments of 2.54 Mt per year lead to a figure of 97

¹ DIW Berlin’s estimate is equivalent to 3.8 Mt CO₂ equivalent

Mt by 2012, which equates to +80% on 1990², even though trend is falling. On current trend, the quantified cuts envisaged by the NCS (15.4 Mt) are already inadequate for the purpose of hitting the Kyoto target, since even with full implementation of NCCS measures the target is exceeded by 2004³. The fact that the current trend equates to an overshoot on even the worse case BAU scenario envisaged by the NCCS demands enhanced action.

The challenge facing Ireland, in achieving the Kyoto target compared to other Member States, is significant.

Comhar welcomes the recent statement by the Minister for the Environment and Local Government, which recognises that there is a need to accelerate our efforts to meet our target. Given the longer-term global reductions required and *Comhar's* Principles for Sustainable Development, addressing the underlying causes, as opposed to managing the effects, must be the primary focus with regard to the policies and measures to meet the required reductions.

Comhar believes that the Strategy should be strengthened by the development of interim targets or milestones along the path to the Kyoto target. The requirement to achieve demonstrable progress by 2005 provides an initial target date and 2007 should be the next milestone, prior to the commencement of the commitment period. Specific targets for these dates should be developed, taking account of the emissions reductions outlined in the NCCSIR, including “with” and “without measures” scenarios for emissions projections. Specific targets for these dates should also be set on a sectoral basis within the overall national target. These targets should be used as indicators of progress and inform, guide and measure ongoing implementation, including future reviews, thus ensuring that necessary adjustments are made in advance to achieve the Kyoto target.

With the benefit of hindsight, it might have been similarly prudent of the NCCCS to have created similar biennial targets from the outset, timed to

² Taking DIW Berlin figures, adding 3.8MT each year equates to 112.6 Mt in 2012 or +108% of 1990

³ 2003 under the DIW trend

coincide on-cycle with the scheduled dates for the biennial review. This would also have assisted *Comhar* in carrying out its work on this review through the provision of much greater detail. Similarly it would have provided us with much greater detail on the crucial matter of “with” and “without” measures, and on the matter of sectoral assignment of assignment of responsibilities and possibilities.

Contrary to the requirements of the NCCS, full quantification of the costs and benefits at sectoral level of implementing the specific measures has not been undertaken, or has been done at a level of detail that is insufficient to assess the competitiveness impacts.

The review should address clearly the interrelationship and compatibility between various EU and national initiatives/mechanisms. *Comhar* believes that there must be clarity on how these mechanisms fit together and importantly the timing and costs associated with their introduction.

The review should focus on developing and exploiting all potential emission reduction options, which will offer the greatest flexibility, with least competitiveness impacts, while contributing to real reductions.

The possibility of migrating to a cycle of annual reviews of NCCS should be actively considered by Government. This would facilitate the construction of an actively and coherently assessable pathway to the onset of the 1st Commitment Period (FCP), on a stepped basis. This would provide much more useful detail on the policies and measures which are, (or are not), achieving their desired outcomes, as well as more useful detail on the relative costs of re-assigning priorities on both an inter and intra-sectoral basis.

The work of the Inventory Data Users Group, Negotiated Agreements and Economic Analysis sub-Groups (IDUG, NAG and EAG respectively) needs, therefore to be accelerated, streamlined, integrated and made more available for assessment by *Comhar*. At present, it appears that only the CCT has access to the birds eye view of cross-sectoral implementation of NCCS that any useful assessment so obviously requires.

4. Cross-Sectoral Instruments

4.1 *Comhar* believes that equity requires that equivalent action be taken across all sectors. The Strategy identified two central market-based cross-sectoral instruments to provide across the board incentives to reduce emissions, namely, emissions trading and carbon/greenhouse gas taxation. *Comhar* notes that the Marrakesh Accords requires that the development of international emissions trading and the other Kyoto flexible mechanisms must be supplemental to domestic action, and that action undertaken under national policies must thus constitute a significant element of the effort made to reach our own target.

4.2 Taxation

In view of *Comhar*'s broad representation and multi-stakeholder structure there are different perspectives on the two major cross-sectoral issues of taxation and emissions trading. In particular, the environment and economic pillars have rather different approaches to priorities in the review for these two mechanisms. They are therefore outlined separately in the two following sections.

4.2.1 Environment pillar perspective on Taxation

The lack of delivery by NCCS of quantified emission cuts so far can be blamed squarely on lack of implementation of one of the main drivers proposed in the strategy - cross-sectoral greenhouse gas taxation.

The Strategy commits to

- (a) advance notice of implementation,
- (b) the "putting in place of an appropriate framework for greenhouse gas taxation, prioritising CO₂ emissions, from 2002 on a phased, incremental basis"⁴.

Most interpretations of this commitment would take it to mean that CO₂ taxation should have been introduced in the 2002 budget, with advance notice having been given in the 2001 budget.

Thus the initial notification should have been announced over two years ago, in the budget announcement immediately following the adoption of NCCS.

There is thus already a two-year delay on implementation of one of the principal measures in NCCS, even assuming (hopefully) that the advance notice is now expected in the forthcoming 2003 budget announcement.

There are some concerns in relation to any proposals for exemptions from carbon/greenhouse gas taxation. The extra burden would then fall on other stakeholders.

The purpose of such taxes should be to reduce greenhouse gas emissions and to do so as fairly and as cost-effectively as possible. Exemptions from that taxation are likely to result in a number of negative consequences (unless specifically designed to eliminate those consequences in which case they would be little different in effect than the even implementation of the tax).

The negative consequences of exemptions from such taxes could include:

1. Reduction/removal of incentives to reduced greenhouse gas emissions.

It is important that the incentive to reduce emissions continue below any target, which a negotiated agreement would set. This would contradict the general principle of a negotiated agreement.

2. Failure to minimise the burden on the economy as a whole.

The welfare of the economy as a whole is the relevant economic consideration in this case. In any market economy the interests of particular businesses are not necessarily those of the economy as a whole. (Appropriate measures should of course be put in place to deal with any social impacts of declines in particular industries/ industrial sectors should these arise).

3. Lack of equity.

⁴ NCCS p. 27

It would be unjust were certain polluters, by virtue primarily of the size of their emissions to be protected from taxes and market forces which other businesses and indeed consumers are or will be subject to.

4. *Failure to incentivise best practice.*

Any negotiated agreement which set a simple target would fail to incentivise best practice should that be or become a higher standard than the target.

5. *Removal of inter-sectoral and inter-producer incentives.*

Many GHG-intensive products/services compete with less intensive products/services whether in the same or in another economic category, e.g. aviation competes with rail, cement competes with wood. It is vital that the economic incentive, which will help to reduce emissions, be allowed to operate. Negotiated agreements risk becoming in effect a hidden subsidy to more polluting industries.

6. *Removal of incentives for economic conversion.*

Economic conversion to less GHG-intensive production and consumption patterns is an essential aspect of long-term policies to reduce GHG emissions and of bringing about sustainability. A conversion from cement-based to wood-based building is a good example of this type of conversion. Negotiated agreements must not hinder this economic conversion. Instead incentives and information should be put in place to accelerate this conversion for both environmental and economic reasons.

7. *Harder fall in next commitment period.*

IPCC advises that the Kyoto protocol will have a minimal effect on radiative forcing. It is clear that if global warming is to be addressed by international multilateral agreements progressively greater and greater reductions will be required in future commitment periods. It would be foolish to cause the economy to bear the burden of supporting certain highly polluting industries or industrial sectors for the 2008-2012 commitment period only to find a harder fall when this

becomes economically and environmentally impossible in the following commitment period. We must take a long-term view of the policy measures currently being put in place.

8. *Failure to assist in meeting other international commitments.*

Ireland's commitments under the CLRTAP particularly the Gothenburg protocol require drastic reductions in emissions of acidifying pollutants. Many of the measures which will impact on GHG emissions will also help to reduce SO₂ and NO_x emissions. This should be seen and counted as a further benefit of certain GHG reduction measures and that the costs of emissions reduction should not be doubly counted.

There is a lack of clarity as to where in the NCCS process on the issue of subsidies or effective subsidies/ state aids which incentivise GHG emissions is to be dealt with.

Aside from the introduction of appropriate taxation and other economic measures, Comhar believes it is very important that existing subsidies, state aids tax exemptions which incentivise emissions are identified and either phased out or reformulated to remove the undesirable incentives part of the policy.

4.2.2 *Economic pillar perspective on taxation*

The economic pillar is firmly opposed to taxation and suggests that studies have shown that the imposition of taxes would have serious competitiveness implications for Irish Business (particularly energy intensive enterprises), without accruing any environmental benefit. The impact of a tax will damage competitiveness, increase inflationary pressure and in the extreme, drive firms to close or relocate outside Ireland.

The economic pillar believes that an energy tax would hit Irish business hard because:

- the low level of energy elasticity found in industrial sectors;

- the fact that Ireland has one of the most energy efficient industrial sectors in the EU; and
- there is little scope for change in energy intensive industries, as they will be working to BAT (Best Available Technology).

The economic pillar considers that taxation is definitely not a tool to encourage behavioural change for companies that engage in negotiated agreements and/or emissions trading. There is little logical rationale in the imposition of such additional costs on companies who actually abate greenhouse gas emissions.

Recent independent studies in Ireland have recommended a series of exemption criteria to accompany the introduction of any proposed taxation measures.

Other EU states that have imposed taxation have a range of exemptions for companies seeking to abate emissions.

The NCCS states that taxation should not unduly impact the competitiveness of “firms using high levels of energy in sectors open to international competition from firms not paying comparable levels of tax” and that “due regard will be had to the fact to the fact elasticity’s vary from sector to sector”.

4.3 Emissions Trading

Comhar agrees that where flexible mechanisms are to be used to meet any of Ireland's commitments, they must be subject to a transparent national vetting mechanism to ensure they promote sustainable development and operate in a manner consistent with national foreign policy and aid policy. Money must not be diverted from the aid budget to these mechanisms.

There is broad support for the concept of emissions trading as a key flexible mechanism to assist in achieving Ireland’s obligations under the Kyoto Protocol and the EU burden sharing agreement. However, as is the case with taxation, the environment and economic pillars see priorities for the review in rather different terms as set out below.

4.3.1 Economic pillar perspective on emissions trading:

The economic pillar believes that since the initial strategy was published there have been developments in the Emissions Trading Directive, which give cause for serious concern for Ireland. The EU pilot scheme is now mandatory and as Ireland will be a net buyer in a non-liquid market, this will have a significant impact on; the sites included in the scheme. This non-liquid market is important because

- Large scale expected power generation fuel-switching from coal fired plant to gas fired CCGT has not occurred due to market conditions.
- The anticipated injection of cheaper credits via the JI/CDM mechanisms will not be available until approximately 2007-2014.
- German Proposal for a Pooling Arrangement will increase the price of credits by not allowing for the identification of the least cost solution per installation and negatively affect liquidity by reducing the number of participants.
- The UK intention to opt out all industries subject to it's climate change Levy and domestic Emission Trading system.

The draft Directive proposes that an excess emissions penalty of equivalent emitted by the installation for which the operator has not surrendered allowances.

In the Irish context, in a non-liquid market, this would actually translate into a penalty. In a worst case scenario, the net bill for Irish industry and power generation engaged in the EU Emissions Trading Scheme, would be approximately in the order of billions in excess emissions penalties in the pilot phase alone.

This would significantly damage the competitiveness of those 35 Irish industrial sites, currently included in the mandatory scheme, who are not

insulated from such increases and are unable to reflect them through to customers, in the form of price increases.

Such rates of penalty could also have a significant upward pressure on electricity pricing going forward.

The review should examine the current proposal against the criteria outlined in the NCCS, which states that an emissions trading system should be:

- Environmentally effective
- Economically efficient
- Transparent and open in operation.

Clearly the current proposed system will not meet these criteria and the penalties and not the cost of carbon will determine the market price.

4.3.2 Environment pillar perspective on emissions trading:

The environment pillar believes that, while there are likely to be difficulties with the EU emissions trading regime---particularly during the pilot phase---this is a) to be expected and b) part of the “learning by doing” strategy under which the scheme was explicitly designed. Irish emissions are not unduly handicapped under the current proposal, other than to the extent that Ireland as a whole is so far off target vis-à-vis its Kyoto commitment. The fact that under the directive, Irish industry and businesses have access to flexible mechanisms even in the absence of Kyoto-required complementarity (see section below) should be considered a highly advantageous outcome, given lack of domestic implementation of NCCS so far.

From the perspective of the review, attention now has to turn as a matter of urgency to the question of allocation of permits and caps to both inter- and intra-sectoral participants in the scheme. Comhar appreciates the difficulty involved in reconciling the twin demands of equity and cost-effectiveness within the overarching framework of the requirement to deliver achievable and quantified cuts in overall emissions.

Given that the pilot phase for the EU scheme commences a matter of weeks after the now confirmed introduction of carbon taxation, great care must now be applied to identifying realistic and achievable cuts in emissions both within the reach of participants in the emissions trading regime and its associated penalty price (40 euro) and non-participants within the reach of the taxation regime (now unlikely to be as expensive in 2005 as non-compliance to the emission trading regime), as well as the requirement to not dis-incentivise potential cuts that come at a cost intermediate to the two regimes.

Given the disconnect between the likely prices in the two regimes (at least in the short term) there is scope for properly configured negotiated agreements to cover the gap between the two cross-sectoral measures (see section below). These, however, will similarly have to be exceptionally carefully crafted.

The emphasis, however, has to remain squarely on capturing effective action in achieving real, identifiable and quantifiable emissions reductions. From the perspective of the review, therefore, there is an added onus to have both targets and opportunities fully identified and carefully accounted for before either taxation or emissions trading commence, (as well as having opportunities remaining for voluntary agreement equally carefully accounted for) before the end of 2004.

Given the range of uncertainties about abatement opportunities lying both within and between the three regimes, this makes a further substantial case for migrating to a series of annual reviews and projections.

4.3.3 Emissions Trading and Complementarity

The figures in paragraph 3 of this paper, relate to one of the fundamental provisions in the Kyoto Protocol, that access to the flexible mechanisms is dependent on cuts achieved through these being “supplemental” to domestic action.

Quantified emission reductions obtained through the flexible mechanisms, however, must be backed as a minimum by equivalent quantified reductions already achieved by domestic implementation.

As can be seen from the figures previously given, the Department's Discussion Paper's BAU-based estimate of a + 60% overshoot is equivalent to **25.1 Mt** over target, the EPA BAU base increase of + 80% is equivalent to **36.1 Mt** over target, and the DIW Berlin BAU base increase of +108% is equivalent to **51.7 Mt** over target.

It is important to note therefore that, in terms of quantified action, full domestic implementation of NCCS (15.4 Mt) qualifies Ireland for access to the mechanisms only in the first case; on the current pathway, a further **2.8 Mt** of domestic reductions are required additional to NCCS in order to qualify for trading in the EPA case; and, a further **10.5 Mt** additional to NCCS for the DIW Berlin case, even if it is considered appropriate (or even possible) to obtain 50% of the required total reductions on the market.

Even allowing for possible access to trading on a tonne for tonne basis, these are still substantial reductions to apply on top of an already stretched NCCS.

In addition, the fact that the larger the overshoot becomes, the more expensive the marginal cost of abatement of the last tonne in becomes, means almost inevitably that the marginal cost of the additional domestic reductions is likely, at that stage, to be exceptionally high - whatever about the price of the remainder on the open market.

There are therefore substantial grounds for concern at the current time that lack of progress on domestic implementation of NCCS is storing up trouble for future flexibility in meeting the Kyoto target if the current pathways result in the inventory being out of compliance on requirements for supplementarity.

This is likely to be a particularly critical consideration for the early stages of the FCP, when, on current evidence, few enough domestic reductions appear likely to be available as collateral for purchases on the market.

This is therefore a further reason to initiate an annual cycle of stepped and quantified approaches to the onset of the FCP, as recommended earlier.

Since emissions trading is frequently assumed to be a least-cost measure, the review should therefore also attempt to assess the opportunity costs of lack of progress in domestic implementation leading to the loss of efficiencies available through the flexible mechanisms.

This is a subject that the review needs to address in a quantified manner.

4.3.4 Negotiated Agreements:

Comhar fully supports negotiated agreements as a mechanism for actually reducing greenhouse gas emissions. The review should accelerate the delivery of agreements to as wide a range of business sectors as soon as possible.

However, due to the exceptionally high levels of information required for adequate implementation and enforcement, transaction costs for negotiated agreements can represent inefficiencies which may exceed the cost of achieving equivalent action through either the taxation or emissions trading regimes. Again, costs and quantities need to be carefully framed and implemented, with the added onus of accounting for the sunk cost to the government of achieving consensual agreement. Penalties for non-compliance therefore have to be similarly realistic and enforceable.

5. Sectoral Instruments

5.1 Energy

Comhar notes that the energy supply sector accounts for the highest of all quantitative indicative reductions in the NCCS (5.65 Mt CO₂) with the measures for the higher reductions ranging from fuel switching to less carbon intensive fuels and increasing energy generation from renewable sources.

The NCCS states that: “progress in attaining the targets for the increase in renewable capacity will be an important aspect of the biennial review of this

strategy. Additional targets will be set for 2005-2010, having regard, inter alia, to targets at EU level”⁵

In the light of both this commitment and the foregoing analysis, it seems self-evident to *Comhar* that the most significant avenue open to the government for strengthening NCCS remains a concerted, concentrated and dedicated effort to complete installation in Ireland of sufficient renewable energy supply to allow compliance as a minimum with our commitments under the renewables directive.

The fact that the recent AER VI announcement gives confidence that the NCCS target of an additional 500MW by 2005 can now be achieved on time (possibly ahead of time) is to be welcomed.

However, *Comhar* notes that even full delivery of this programme still leaves a substantial shortfall on the renewables target - 937 MW installed renewables capacity in 2005 only amounts to 3.75% of projected TPER in 2005⁶.

Even in the (unlikely) absence of further growth in TPER over the rest of the decade, this still implies that there is a need for the installation of a further 3,000 MW of renewables capacity in order to comply with the Directive in 2010 - equivalent to an annualised installation of over 600 MW.

This is a substantial challenge, but one which could be met if appropriate measures were to be taken. The recent statement by the Minister for Communications, Marine and Natural Resources in this regard is a welcome development, as is his determination to substantially increase incentives for offshore wind capacity.

Comhar also believes that only a fraction of the vast potential for renewable energy has so far been tapped and harnessed for electricity production. *Comhar* would like to see more ambitious targets set in the medium term. For example, Sustainable Energy Ireland (SEI) believes that wind energy capacity

⁵ NCCS p.33

⁶ Green Paper on Sustainable Energy, p.124

penetration alone could conceivably rise to 16% by 2010 (which would be roughly equal to 10% of Ireland's total electricity consumption). Ambitious targets for all renewables post-2005 must be set in the National Climate Change Strategy, in the light of evolving targets at EU and other levels (e.g. arising from the outcome of WSSD) and relevant research findings.

Comhar welcomes the move to quantify the wave energy resources of Ireland's coastline and would like to see early development of a plan for the strategic development of an Irish wave industry.

Given that (as a very approximate estimate) 3,000 MW of renewable energy is equivalent to 6 Mt of avoided emissions in Ireland, it seems axiomatic that compliance with the EU renewables directive would appear to be one of the strongest policies to recommend for the strengthening of NCCS, given that NCCS itself seems to underestimate the reductions possible from this policy.

In the light of this, *Comhar* recommends that the review should construct projections for a stepped pathway to delivery of the renewables target by 2010, on a similar (and cross-referable) basis to that already recommended for the strategy on the Kyoto target.

Revenue from any CO₂ taxation should be explicitly protected for support of these objectives.

Comhar believes that there should be greater encouragement of development of Combined Heat and Power. The current pricing policy in relation to purchase of excess power generated does not make this as attractive a proposition as it should be and this needs to be changed.

There should be encouragement for greater use of biogas including digesters for farm and other wastes. This would have the dual advantage of increasing energy production and reducing pollution.

Comhar is disappointed that in the first Progress Report there is no clear identifiable progress with fuel switching.

There is an urgent need to integrate greenhouse gas emissions policy into the electricity policy and regulation. This will require clear policy directions to the regulator current policy including:

- design and management of electricity grid infrastructure to facilitate and favour renewable sources, and
- net metering being available for small scale renewable generators.

Comhar is concerned that the use of peat for electricity generation is foreseen to continue into the future, based on a substantial cross-subsidy from less polluting forms of generation, including renewable sources. The use of peat should be phased out in favour of biomass.

In addition, there is an urgent need for improved energy conservation measures. *Comhar* is concerned that the existing power generation sector continues to promote energy consumption and recommend that this practice be reversed to a policy of promoting conservation.

5.2 Infrastructural investment in Transport

Comhar is concerned that considerable infrastructural investment is being undertaken at the moment with no regard to short or long-term impact on energy demand or greenhouse gas emissions. While Government policy commits to a substantial modal shift through the development of public transport generally”, far more money is being invested in private transport infrastructure. The modal shift, which is resulting, is in the wrong direction.

A full analysis needs to be carried out to assess the contribution of road infrastructure currently being developed to future road traffic demand levels and consequent GHG emission levels.

In addition, modelling should be carried out to determine the appropriate level of road infrastructure investment for planned levels of usage which will allow compliance with Kyoto limits and future expected emission limits for subsequent commitment periods.

This modelling can be expected to lead to a shift in investment from roads to public transport.

5.3 Built Environment and Residential Sector

Comhar notes that the revisions to Part L of the Building Regulations are expected to achieve 300 kT of the 900 kT projected for reductions by 2012 in the strategy. This is welcome. However, action should be further strengthened in this area, as it appears to be one avenue where the costs of regulation appear to be well justified by comparison with likely costs of market-based measures. Enhanced promotion of timber-frame construction would also advance the move to more energy efficient building stock.

Attention should now be given to the existing housing stock, in addition to new stock covered by the revised regulations. Active measures to incentivise retro-fitted energy efficiency should be integrated into the strategy, with fiscal support provided by revenue from CO₂ taxation if necessary. Similarly, progress on changing the fuel mix could be cost-effectively achieved by encouraging installation of small-scale, locally-appropriate renewable energy supplies. Huge progress could be achieved in this area with the introduction of net-metering, also supported by CO₂ tax revenues if necessary.

Possible reductions and costs of these measures should be estimated within the previously recommended annualised pathway to target.

5.4 Industry, Commercial and Services Sector

Proposals to set more stringent energy performance standards for non-residential buildings, including factories, offices and shops, and places of leisure are welcome. However, they should reflect the recommendations for higher energy performance for the residential sector and be appropriately strengthened, given the established higher rate of refurbishment and turnover in the sector⁷.

⁷ NCCS p.50

The fact that disaggregation of emissions between the residential and commercial/services sectors appears to be currently not possible⁸ constitutes a major hindrance to identification and prioritisation of cost-effective emissions reductions potentially available to the strategy from energy use and energy performance within the built environment.

This is a substantial information deficit, and one which the review should address within the framework of future projections for policies and measures within and between the two sectors.

Work on the inventory therefore needs to be strengthened accordingly.

5.5 Forestry

The increasing level of scientific clarity about soil carbon emissions resulting from afforestation means the predictions for carbon sequestration by forestry in the NCCS now need to be completely revised.

6. Implementation

The review should give serious consideration to the issue of the institutional arrangements required to deliver the strategy. Many of the sectoral and cross-sectoral instruments will need institutions to manage, verify and regulate various functions. To date it is not clear what institutions will perform these functions. Topics to be addressed under this heading will be:

1. Drawing up the National Allocation Plan
2. Emissions Trading monitoring, verification and compliance
3. Registry functions
4. Agreeing the rules and tracking Joint Implementation and Clean Development Mechanism projects
5. Agreement of Negotiated Agreements
6. Assistance and support to participants in the cross-sectoral and sectoral instruments.

⁸ NCCS p.46

7. Awareness Raising

The review should focus on increasing awareness of climate change across all sectors and provide practical advice and information.

A publicly accessible National Climate Model and scientific data base, incorporating inventories, measures, and impacts projections, would provide a public awareness service as value-added to the policy support that such an investment would generate in any case as supplemental to a “with” and “without measures” evaluation of policy development and formation, as well as providing support to awareness and education measures.

A “private” key could be provided to information in the model that may be deemed sensitive for public purposes, but which would nevertheless be essential for evaluation of “with measures” stepped pathways towards achievement of both the strategy and the FCP (and subsequent) Kyoto targets.

Annex 1 – Growth in Emissions

Year	Quantity, Mt	Mt excess 1990	% of 1990	Mt excess of target	Mt excess of target + NCCS measures
2000	67.0	13.1	+24.0%	6.1mt	-----
2001 (DW Berlin)	70.8	16.9	+31.3%	9.9mt	-----
2001 (EPA)	69.5	15.6	+29.0%	8.6mt	-----
2012 (DOELG)	86.0	32.1	+60.0%	25.1mt	9.7mt
2012 (DW Berlin trend)	112.6	58.7	+108.0%	51.7mt	36.3mt
2012 (EPA trend)	97.5	43.6	+80.8%	36.6mt	21.2mt