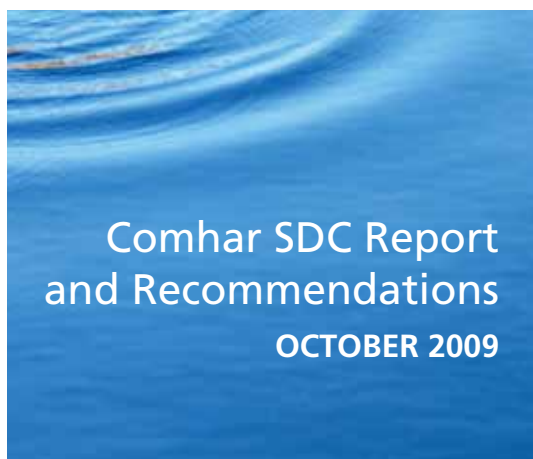




Towards a Green New Deal for Ireland



Comhar SDC Report
and Recommendations
OCTOBER 2009



Comhar
Sustainable Development Council



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Foreword

'Never let a serious crisis go to waste.' Rahm Emanuel's (Chief of Staff in the Obama Administration) famous observation has set the stage for the 'greening' of the various stimulus packages that are being developed and implemented to counter the effects of the financial crisis and the sharp declines in output and employment that most countries in the developed world are experiencing.

'Green New Deal' or GND is how these initiatives are variously characterised. But what precisely does GND mean? Does it make sense for us to embrace it, and if so, what are the policy instruments needed to make it happen? Our choices in Ireland are constrained by the fact that we face a yawning gap in our public finances, which requires that public expenditure be cut, so the option of large new public investment programmes on a business as usual basis is not available.

Given this context, how can we create a paradigm shift in how we produce and consume, so that when recovery comes about, we don't revert to our 'old' patterns of energy use, water consumption, and destruction of nature? We know that the market on its own fails to protect these endowments, so correcting for this market failure while creating new enterprise and employment is what we are about. Sustainable development is about regaining our prosperity and full employment while enhancing our environmental endowments and our social life. Comhar Sustainable Development Council exists to help government and stakeholder in business, society, environment, government and academe move in this direction. We do so by undertaking evidence based analysis, informed by best practise and trends internationally, and by mobilising the interest, support and engagement of our stakeholders as we do so.

The Government has established a *High Level Action Group on Green Enterprise* chaired by Joe Harford to advise it on how to achieve the business dimension of this transition. Our Council decided that it was timely to support the work of this Group, by: clarifying what we mean by 'Green New Deal', assessing the local context and international thinking and actions, identifying some key opportunities, and the incentives and funding and other mechanisms that have to be mobilised if we are to succeed, and the performance metrics to be used to judge progress. Getting the prices right, identifying some key investment opportunities that yield substantial environmental and business payoffs, supporting innovation linked to business, and finding financing mechanisms that allow 'green' business to profit are emerging priorities.

This work has been led by our policy analyst Eoin McLoughlin, and supported by an Advisory group, comprised both of Council Members and external experts. At two workshops, a substantial number of participants engaged with the issues. We are deeply grateful to them for their very useful contributions, but of course they are not responsible for the conclusions reached.

This is work in progress, and we intend to continue to improve the data, the analysis and the scope and imaginative reach of the concept. We look forward to further engagement with our Council and all those in the policy process who have an interest and responsibility to move this agenda forward.

Frank J. Convery

Chairperson, Comhar Sustainable Development Council

Acknowledgements

Comhar SDC would like to gratefully acknowledge and pay recognition to those people that have contributed their expertise and provided valuable input to this report. First of all to the Comhar Council members and the Green New Deal working group (including our colleagues from Northern Ireland), who steered the project on course and supplied useful feedback. Secondly, to all those that attended our workshops and particularly the chairs and expert speakers for these events.

Comhar SDC is particularly grateful to Colin Hines from the UK Green New Deal Group who contributed his expertise to the project, particularly in relation to the financing aspects of the Green New Deal.

Finally, from a personal perspective, I would like to thank all the staff in the Comhar Secretariat for their ongoing commitment to effective and timely delivery of our outputs and activities. Eoin McLoughlin deserves special mention for leading this project and Cathy Maguire for making important contributions to the report.

Noel Casserly,

Director,

Comhar SDC.



Executive Summary

Context

Ireland faces strong challenges over the course of the next few years relating to the sustainability of the economy, our natural environment, and the well-being of society. Failure to address these challenges will put at risk our ability to prosper both as a society and economy in the future. The current global financial crisis has only underlined our need to put sustainability at the heart of our economic recovery.

Comhar SDC welcomes the Government's strategy 'Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal' which was launched by the Taoiseach in December 2008. This strategy, *inter alia*, aims to implement a 'new green deal' to move Ireland away from fossil fuel-based energy production through investment in renewable energy and to promote the green enterprise sector and the creation of 'green-collar' jobs.

To support the implementation of this strategy, Comhar SDC is advocating a Green New Deal (GND) for Ireland which is strongly aligned with overarching sustainable development principles. Such a deal proposes to deliver a programme that not only addresses the economic recession but also environmental and social problems, thereby leading to improvements in overall well-being of the population. While much has been written describing a high level vision, concrete policies are needed at local and national level to progress Ireland to this goal. This report sets out Comhar SDC's position on what a Green New Deal should entail for Ireland and makes concrete recommendations for action.

Defining a Green New Deal for Ireland

In formulating the definition of a Green New Deal for Ireland, Comhar SDC has been guided by the belief that such a deal should be strongly aligned with overarching sustainable development principles. Unless this link is explicitly made then any recovery will only be illusory in the sense that it will return us to the same unsustainable growth path as before.

Instead what is required is fundamentally realigning policy with sustainable development goals at all levels of society. Without this broader vision, reviving the economy will fail to address other imminent systemic risks posed by climate change, peak oil, ecosystem degradation and social inequity.

For these reasons Comhar SDC proposes the following definition of a Green New Deal for Ireland:

- Revive the Irish economy and create job opportunities through building an innovative, low-carbon and resource efficient society
- Protect ecosystems and biodiversity while reducing fossil fuel dependency
- Provide for greater social inclusion through stimulating new green jobs, reducing fuel poverty and delivering better access to transport
- Build ecological resilience and capacity to adapt to climate change

Priority Areas

The emerging global consensus suggests there is a unique opportunity to invest now in the technologies and infrastructures that will be needed to address energy security, prevent climate change, and protect ecosystems. Much work has already been undertaken assessing what the targets should be for green stimulus spending and in many instances 'green sweet spots' have been identified.

Ireland as a country should be looking to develop export markets in green technologies and use our traditional skills base as the foundation for making the transition. Priority should be given to maximising the potential of our resources in sectors where we already have inherent advantages such as wind and wave energy. The agriculture resource in Ireland should be used towards supporting the implementation of a Green New Deal and at the same time enhancing rural development.

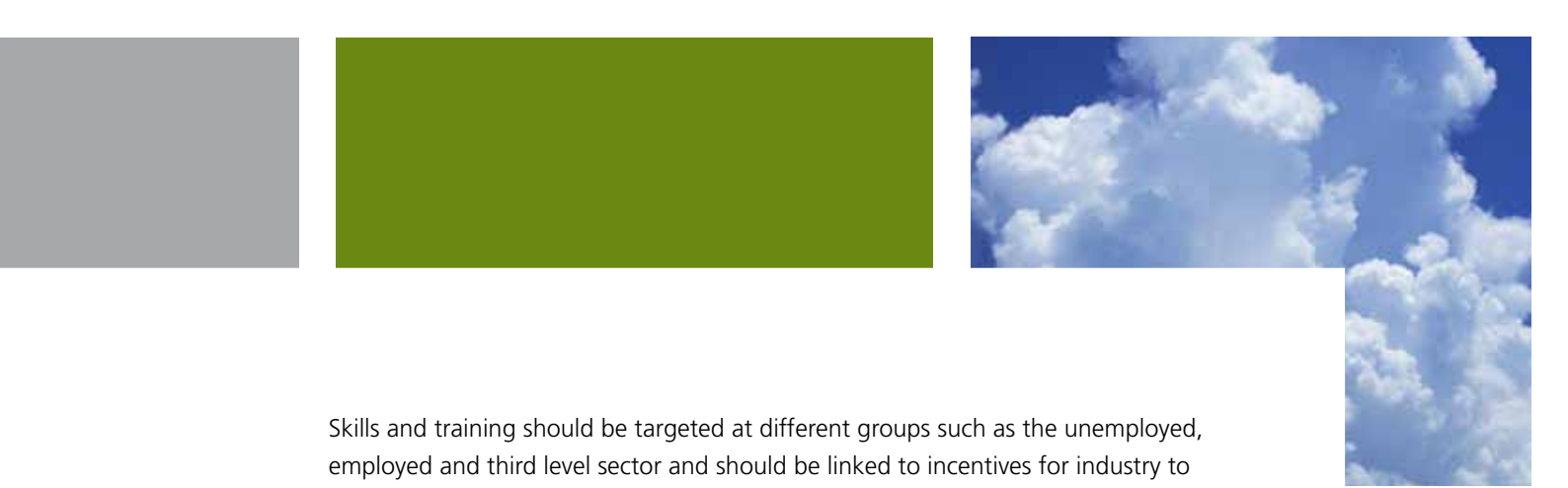
Comhar SDC is proposing that the Irish Government should commit up to 2% of GDP to green stimulus measures over the next two to three years. This is consistent with the levels recommended by the U.N. and Sir Nicholas Stern and will ensure that Ireland is positioned at the forefront of global policy developments in this field. The priority areas for investment should comprise:

- Improve the energy efficiency of existing housing stock
- Renewable Energy
- Transforming the National Grid
- Delivering Sustainable Mobility
- Public Sector Investments
- Skills and Training
- Green Infrastructure

Making it Happen

In order to move the idea of a Green New Deal for Ireland from concept to reality, concrete policy instruments are required that can unlock the door and mobilise the transformation to a more sustainable and resource efficient society. Some of the most effective policy instruments that should be prioritised and mobilised include:

- Green Procurement
- Tax and subsidy reform
- Skills and training
- R&D



Skills and training should be targeted at different groups such as the unemployed, employed and third level sector and should be linked to incentives for industry to engage in schemes. Proposals on the potential role skills and training can play in delivering the Green New Deal objectives in each of the priority areas should be developed.

A gradual shift of the tax base away from labour and on to pollution would also help contribute to a resource efficient and smart green economy. A tax base that derives a greater proportion of revenues from consumption and less from labour will also provide a wider and expanding tax-base than present, thereby contributing to the response needed to offset the tax implications of a declining workforce and an ageing society. In conjunction, existing subsidy schemes in Ireland should be aligned with sustainable development goals with fossil fuel subsidies being phased out.

Financing Options

The use of public and private finance mechanisms have a pivotal role to play in providing the necessary funding to make the transition to a resource efficient economy. Some of the financing options with the most potential that should be considered for implementation include:

- Fiscal policy to provide incentives for green tech and low impact products and services
- Green bonds and pensions as an investment vehicle for Green New Deal programmes
- Setting up an effective financial institutional framework to provide the foundation for focused investment in the Green New Deal. This should take the form of:
 - Establishment of a National Decarbonisation Fund for Ireland
 - Formation of a Green Bank
 - Creation of a green venture capital fund

The National Decarbonisation Fund (NDF) should be managed by the National Treasury Management Agency and funded through environmental revenues raised from climate taxes, auctioning of allowances under the EU's Emission Trading Scheme post 2012 and the issuance of government backed green bonds. The Fund's investment activities should be targeted at climate change related measures and offer good financial returns.

The state controlled Anglo Irish Bank should be reconfigured as a Green Bank and offer innovative financial products such as green mortgages, green loans and green SSIA saving accounts. These would provide loans at favourable lending rates and provide a one stop shop for environmental finance.

1. Context

1.1 Introduction

Ireland faces strong challenges over the next few years relating to the sustainability of the economy, our natural environment, and the well-being of society. Failure to address these challenges will put at risk our ability to prosper both as a society and economy in the future. The current global financial crisis has only underlined our need to put sustainability at the heart of our economic recovery.

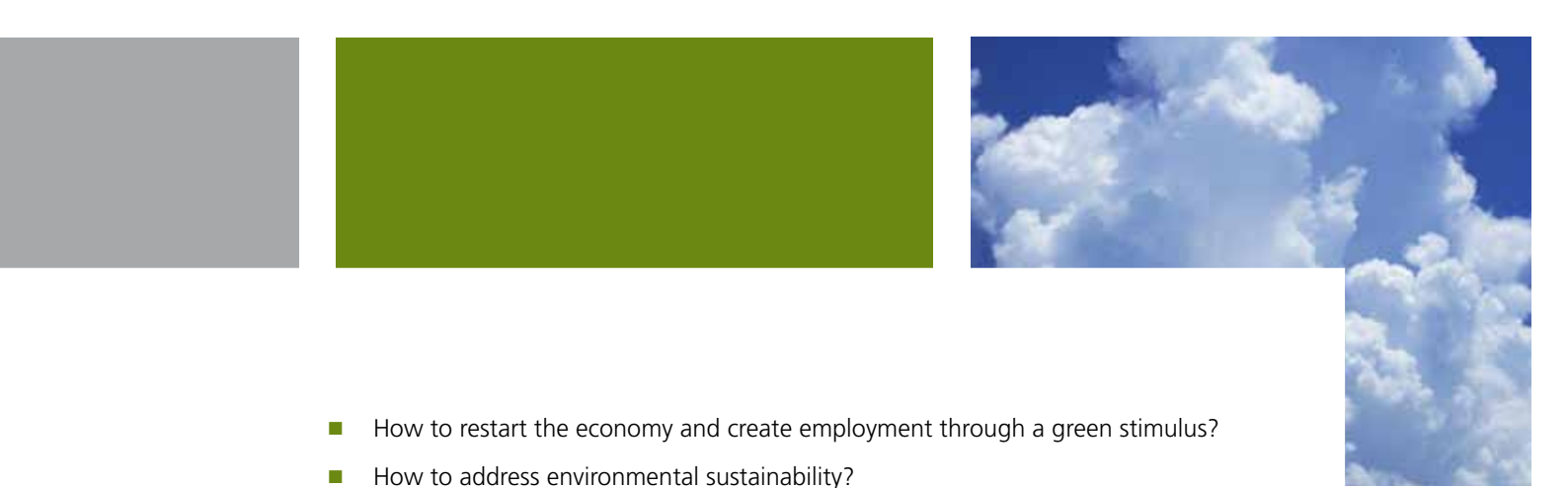
These past fifteen years in Ireland have brought the country unprecedented levels of economic growth that has significantly exceeded that of our European partners. This growth was underpinned, *inter alia*, by access to EU structural funds and international markets, Foreign Direct Investment (FDI) activity driven by a favourable taxation regime and a macroeconomic boon of low interest rates and favourable exchange rates.

But mistakes have been made. As a small open economy, Ireland will always be vulnerable to global cyclical downturns. However, once the world economic recession took hold following the emergence of U.S. sub-prime mortgage lending and the use of credit default swaps to cover up 'toxic debts', the full extent to which the Irish economy was overexposed became quite apparent. The absence of an 'environmental pillar' from the social partnership process has also meant that sustainable development issues were not represented to the same degree as other policy agendas.

Notwithstanding these mistakes of the past, there is now a unique window of opportunity to take decisive action to correct some of the failures that have been made and at the same time to put the Irish economy on the path to sustainable economic recovery. It is all too tempting in times of crisis to provide short-term fixes instead of addressing more fundamental and embedded problems. In fact, addressing long-term problems in parallel with short-term crises is at the heart of the sustainability agenda. Therefore, it is important that social and environmental issues such as fuel poverty and climate change do not become sidelined while we wait for the global financial recovery to materialise.

On this basis, Comhar SDC is advocating a Green New Deal (GND) for Ireland. Such a deal proposes to deliver a programme that not only addresses the economic recession but also environmental and social problems, thereby leading to improvements in overall well-being of the population. Fundamentally, it involves realigning policy with overarching sustainable development goals at all levels of society. It envisages an economy that is clean, clever and competitive and an economic strategy where growth and competitiveness are a means to an end rather than the overriding objectives themselves.

While much has been written describing a high level vision, concrete policies are needed at local and national level to progress Ireland to this goal. This paper sets out Comhar SDC's position on what a Green New Deal should entail for Ireland and makes concrete recommendations for action. The paper is constructed around three key issues:

- 
- How to restart the economy and create employment through a green stimulus?
 - How to address environmental sustainability?
 - How to increase well-being and reduce inequity?

A number of critical issues are analysed in relation to formulating a Green New Deal for Ireland. These include examining the priority areas for green stimulus investment and the policy instruments required to transform it from concept to reality. There is clearly an issue for Government in terms of raising the level of funding required to finance such a programme. Therefore, the paper also explores possible financing mechanisms for long-term funding of a green recovery.

It is intended that this report will provide a roadmap to the development and further consideration of a Green New Deal for Ireland. The report itself is a snapshot of current developments and thinking in an area which is evolving all the time. It builds on existing and future work that has taken place both in Ireland and internationally.

1.2 National Policy Context

The Irish Government's commitment to addressing the current economic challenge is contained in its publication 'A Framework to Sustainable Economic Renewal 2009-2014'¹. This policy document sets out the Government's vision for the next phase of Ireland's economic development. It focuses on creating the 'Smart Economy' which combines elements of the enterprise and innovation economy while at the same time ensuring the delivery of a high quality environment and social cohesion.

One of four key strategic areas identified for prioritisation includes the need to "implement a 'new green deal' to move us away from fossil fuel-based energy production through investment in renewable energy and to promote the green enterprise sector and the creation of 'green-collar' jobs". Specific 'action areas' that have been identified in this regard include the following:

- Ensuring Energy Security and Reducing Energy Costs
- Energy Efficiency
- Green Public Procurement
- Environmental Tax Reform
- Developing the Green Tech Sector
- Integrating the Environment into Measures of Economic Progress

¹ Government of Ireland (2009), *Building Ireland's Smart Economy*.

The Government has since announced the establishment of an innovation taskforce to assist it in making the 'Smart Economy' become a reality. The taskforce is to advise on options to increase innovation and entrepreneurship and to ensure that investment in science, technology and research translates into high-value jobs and sustainable economic growth.

A number of other prominent Irish political parties have also produced their own policy documents setting forward a vision for the Irish economy. Fine Gael recently published their strategy entitled 'Rebuilding Ireland'². This proposes an investment of €11 billion over the period 2010-13 in key technologies and infrastructures. The investments are to be undertaken by new and restructured state companies, operating under a new state industrial holding company and financed in part from the National Pension Reserve Fund. The priority areas identified for investment include: (i) smart grid (ii) smart meters (iii) electricity storage (iv) broadband (v) renewables (vi) water.

The Labour Party produced their economic recovery plan called 'Restoring Confidence' in June 2009³. It views the challenge for Ireland as being to 'manage a transition back to export-led growth, and to build the foundations of a new competitive advantage, focused on smart, ecogrowth.'

Labour's proposals for jobs and recovery are focused on six policy areas:

- National Skills Campaign
- Restoring Credit
- Supporting Enterprise
- Investing for Growth
- Reforming Public Services
- Ending 'Crony Capitalism'

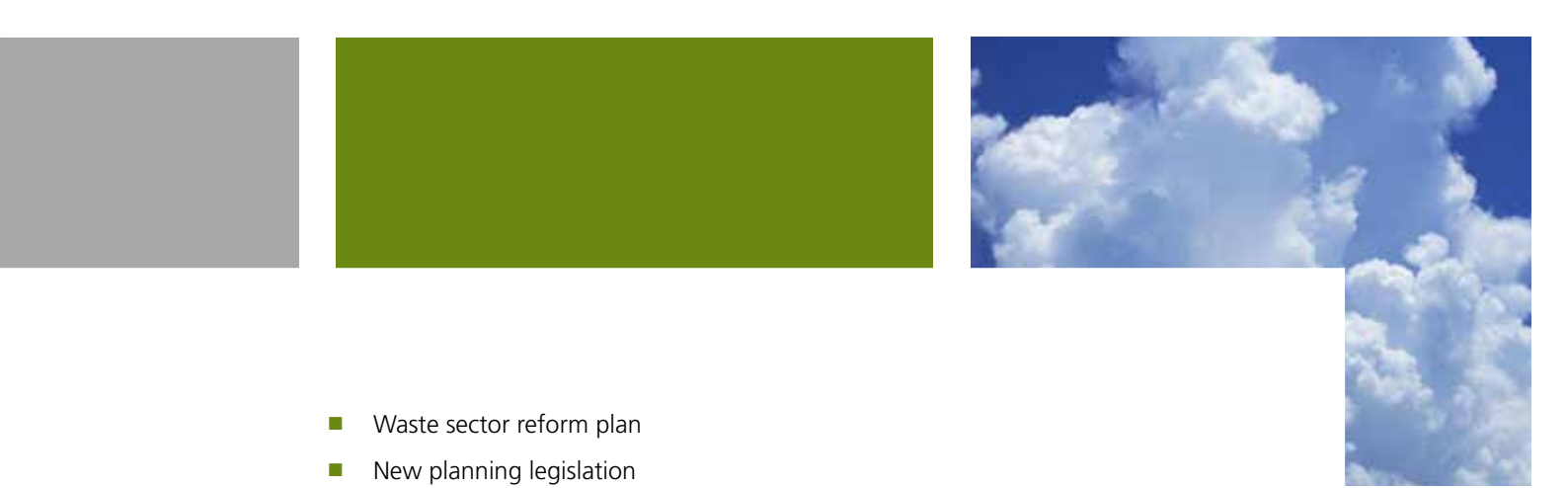
The Green Party produced their version of a Green New Deal in March 2009 which contains a commitment to establish a new action group charged with formulating a green tech plan for Ireland⁴. Some other measures outlined for implementation over the course of the next twelve months include the following:

- Regulatory reform to enable green energy investment
- Taxation reform to incentivise the move to a low carbon economy
- Green public procurement

2 Fine Gael (2009), *Rebuilding Ireland – A "NewERA" for the Irish Economy*

3 Labour Party (2009), *Restoring Confidence – Labour's Proposals for Economic Recovery*

4 The Green Party (2009), *A Green New Deal – Getting Ireland Back on Track*

- 
- Waste sector reform plan
 - New planning legislation
 - Plans for water infrastructure investment
 - Climate change adaptation plan
 - Reform of financial regulatory system

Forfás, the Government's advisory body for enterprise and science, produced a report in October 2008 on the 'Environmental Goods and Services Sector on the Island of Ireland'⁵. This research attempted to:

- estimate the size of the EGS sector on the island of Ireland;
- examine, for the all-Island market, the market drivers, and the strengths and weaknesses of each sub-sector;
- identify the most promising areas in the EGS sector where new opportunities are likely to occur; and
- identify key supports and framework conditions required and desirable to assist EGS companies including the potential to increase communication and collaboration within the sector and between firms and research institutes.

The report estimates that the size of the EGS sector in Ireland is valued at €2.8 billion, with Northern Ireland accounting for an additional €790 million approximately. The numbers directly employed in the sector totals more than 6,500. The sub-sectors with the most potential are:

- Renewable energies
- Efficient use and management of energy
- Waste Management, Recovery, and Recycling
- Water and Wastewater Treatment; and
- Environmental Consultancy and Services

Some of the main areas where policy recommendations in the report are made include: (i) green public procurement (ii) skills (iii) investment in R&D (iv) fiscal instruments (v) access to finance (vi) information.

The Government has established a High Level Action Group on Green Enterprise to take forward a number of the recommendations from this report. This Group is tasked with the responsibility to position Ireland at the forefront of the new global green economy and is due to report to Government in October.

⁵ Forfás (2008), *Environmental Goods and Services Sector on the Island of Ireland – Enterprise Opportunities and Policy Implications*.

1.3 International/EU Policy Context

The context for a Green New Deal is a combination of policy packages on climate change and energy, biodiversity and natural resource use. These are coupled with objectives on poverty, social protection, social inclusion and long-term employment opportunities offered by synchronising the decarbonisation agenda with the need to stabilise and strengthen conventional capital investment markets and frameworks.

The EU reached agreement on its Climate Change and Energy Package on 17 December 2008 with the outcome being the setting of three new legally binding targets each to be achieved by 2020:

- 20% reduction in greenhouse gas emissions based on 1990 levels⁶
- 20% of final energy consumption⁷ to be produced by renewable energy resources
- 20% improvement on energy efficiency

In addition, deals were also brokered on revisions to the emissions trading scheme, the distribution of the reduction effort outside of the emissions trading sector, a legal framework for environmentally safe carbon capture and storage (CCS) as well as on the related proposals on CO₂ emissions from cars and on fuel quality.

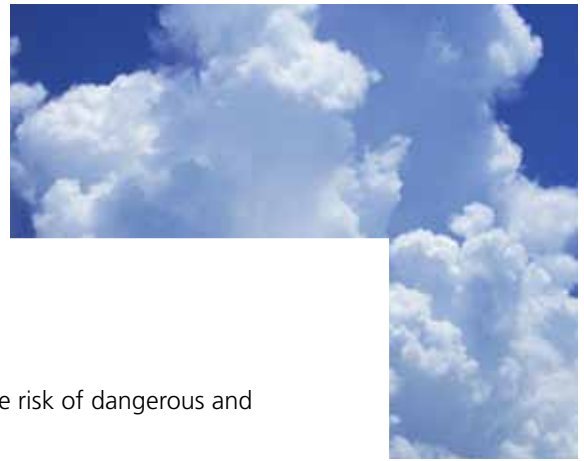
The implications of this package for Ireland are significant. As a member of the European Community, Ireland is legally bound to meeting the new targets that have been set. These targets are without question challenging and cut across all sectors of the economy. The greenhouse gas emissions target is divided between those sectors involved in emissions trading (mainly power generation and large industry) and those sectors outside of the scheme (mainly transport, agriculture, waste and buildings). For the non-trading sector, Ireland has been allocated a demanding reduction target of 20% on 2005 levels to be achieved by 2020. For renewables, Ireland has been assigned an equally challenging target for renewable energy to constitute 16% of final energy consumption by 2020⁸.

On the international front, a new climate change agreement is expected to emerge at the U.N. backed climate change conference (COP 15) taking place in Copenhagen this December. This should provide for the post-2012 Kyoto framework and result in developed countries committing to larger greenhouse gas emission reductions. The findings from the Fourth Assessment Report of the Intergovernmental Panel on Climate Change show that an 80-95% reduction in industrialised countries' greenhouse gas

6 30% reduction if the international community signs up to undertake similar commitments

7 Final Energy Consumption in the Renewables Directive is defined as the energy commodities delivered for energy purposes to manufacturing industry, transport, households, services, agriculture, forestry and fisheries, including the consumption of electricity and heat by the energy branch for electricity and heat production and including losses of electricity and heat in distribution.

8 The latest figures available for 2007 show Ireland currently at 3.3%.



emissions from 1990 levels is required in order to reduce the risk of dangerous and potentially catastrophic climate change⁹.

Ireland is also committed to meeting air quality standards regulated under the Gothenburg Protocol and water quality under the EU's Water Framework Directive. Meeting the objectives of the Water Framework Directive will be particularly challenging and require significant investment in order to reach 'good status' in relation to all waters by 2015.

The overall objective of EU and national policy on sustainable use of natural resources is to break the link between economic growth and resource use and hence between resource use and associated environmental impact – a double decoupling. The EU Thematic Strategy on the Sustainable Use of Resources was published in 2005 with the objective to 'reduce the negative environmental impacts generated by the use of natural resources in a growing economy' and sets out the following actions:

- Improve our understanding and knowledge of European resource use, its negative environmental impact and significance in the EU and globally
- Develop tools to monitor and report progress in the EU, Member States and economic sectors
- Foster the application of strategic approaches and processes both in economic sectors and in the Member States and encourage them to develop related plans and programmes
- Raise awareness among stakeholders and citizens of the significant negative environmental impact of resource use

A review of the European Union Sustainable Development Strategy¹⁰ in July 2009 concluded that the current economic and financial crisis has shown that sustainability is also a key factor for the financial systems and the economy as a whole. Measures to support the real economy and to reduce the social impact of the current crisis must be compatible with long-term sustainability goals and a strategy of green, smart growth. The review invites a reflection on how the EU Sustainable Development Strategy could evolve in the future. Greater alignment with the Lisbon Strategy for growth and jobs and other cross-cutting EU strategies, further streamlining of the Strategy and better monitoring and coordination are examples of points that could be considered. The Report will be complemented by Eurostat's bi-annual monitoring report on sustainable development which will be published later in 2009.

9 IPCC (2007), *Climate Change 2007: Synthesis of the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, Summary for Policymakers*.

10 European Commission (2009), *Mainstreaming Sustainable Development into EU Policies: 2009 Review of the European Union Strategy for Sustainable Development*.

At a national level, the current National Sustainable Development Strategy refers specifically to the 'importance of decoupling economic growth from consumption of environmental resources'. There are currently no targets relating to resource efficiency at European or national level although the Commission is undertaking the necessary technical work to develop detailed material based analysis and targets but no timetable has been specified.

Natural resource use policy is a broad area incorporating production and consumption patterns with two main related policy responses: (1) the integration of resource related considerations into sectoral and other policy areas aimed at increasing efficiency of use and (2) a focus on changing consumption levels and patterns, as technological improvements alone won't deliver reduced resource use due to the rebound effect (where increased efficiency leads to lower prices for products and service resulting in higher demand negating any environmental benefits). A third policy area relates to the outputs to the environment from resource use e.g. discharges to water, emissions to air and waste.

Natural resource use should also be linked to biodiversity policy. The Irish Government is a contracting party to a number of international conventions and agreements relating to biodiversity such as the Convention on Biological Diversity (CBD), the Ramsar Convention and the Bern Convention. Other legislative drivers are European (Birds Directive, Habitats Directive, Water Framework Directive and Plant Health Directive) and national (Wildlife (Amendment) Act 2000). Ireland is also committed to the EU target of halting the loss of biodiversity by 2010. This will require significant action domestically and integration of biodiversity into all other policy areas.

Eliminating social exclusion is also a key aim of the EU. The social inclusion process can be considered within the strategic context of the Social Agenda 2005-2010 and the renewed EU Sustainable Development Strategy. Social Agenda 2005-2010 supports the Lisbon Strategy, advancing the social dimension of economic growth through linking economic, social and employment policies, promoting quality of employment, social policy and industrial relations and progressing social protection systems. The EU Sustainable Development Strategy focuses on the key elements of the economy, social factors and environment in an interdependent and connected way.

As part of the EU Social Inclusion Strategy, National Action Plans must be submitted every two to three years from each Member state. This is synthesised into a Joint Report on Social Inclusion, which provides a detailed account of poverty in the EU. In 2003, Member States (EU15) were obliged to utilise common indicators (Laeken Indicators) in developing their second National Action Plans as part of the EU Social Inclusion Strategy. Member States also compile data on comparable common poverty measures as part of the Community Statistics on Income and Living Conditions (EU-SILC) instrument.



2. Defining a Green New Deal for Ireland

2.1 Background

The concept of a Green New Deal (GND) can be traced back to a report first published by the New Economics Foundation (NEF) in July 2008¹¹. In this report, the authors draw inspiration from Franklin D. Roosevelt's 'New Deal' programme designed to pull the United States out of the Great Depression. The GND that NEF proposes includes structural changes to the financial and taxation systems coupled with a sustained investment programme in energy conservation, renewable energies and demand side management.

The United Nations Environment Programme (UNEP) published their report for a Global Green New Deal in February 2009¹². Their vision for such a deal includes, 'reviving growth, ensuring financial stability and creating jobs'. However, the report goes on to state that 'unless new policy initiatives also address other global challenges, such as reducing carbon dependency, protecting ecosystems and water resources and alleviating poverty, their impact on averting future crises will be short-lived'. Therefore, UNEP proposes that the three key objectives of a Global Green New Deal should be to:

1. Revive the world economy, create employment opportunities and protect vulnerable groups
2. Reduce carbon dependency, ecosystem degradation and water scarcity
3. Further the Millennium Development Goal of ending extreme world poverty by 2025

The UK Sustainable Development Commission (SDC) published their version of a 'Sustainable New Deal' for the United Kingdom in April 2009¹³. The SDC propose that the UK Government should commit up to £30 billion per annum for the next 3 years which would represent around 50% of a total economic recovery package amounting to 4% of the UK's annual GDP. The priority areas identified for spending include:

- Upgrading existing housing stock
- Scaling up renewable energy supply
- Redesigning the national grid
- Promoting sustainable mobility
- Low-carbon investments in the public sector
- Skills for a low-carbon, sustainable economy

11 New Economics Foundation (July, 2008), *A Green New Deal*.

12 UNEP (February, 2009), *A Global Green New Deal*.

13 UK SDC (April, 2009), *A Sustainable New Deal*.

2.2 Proposed Definitions

As can be seen from the preceding analysis, there are different interpretations as to what may constitute a Green New Deal. For instance, are we just talking about creating green enterprise opportunities or also reforming the financial system? Does it address wider social and environmental issues such as poverty alleviation, ecosystem degradation and energy security?

Table 1 below provides a short summary of some of the proposed definitions for a Green New Deal. There is much commonality and convergence around the idea that such a deal should result in job creation, decrease in fossil fuel use and environmental sustainability.

Table 1: Summary Definitions of a Green New Deal

INSTITUTION	GND DEFINITION
Irish Government	To move away from fossil fuel-based energy production through investment in renewable energy and to promote the green enterprise sector and the creation of 'green-collar' jobs.
Green Party	Joined-up action.....Create new jobs and new industries while at the same time addressing the fundamental weaknesses of our economic and governance systems.
New Economics Foundation	Re-regulating finance and taxation plus a transformational policy programme aimed at tackling the unemployment and decline in demand inevitable in the wake of the credit crunch. It involves policies and novel funding mechanisms to substantially reduce the use of fossil fuels.
UNEP	Ensuring that the correct mix of economic policies, investments reduce the carbon dependency of the world economy, protect vulnerable ecosystems and alleviate poverty while fostering economic recovery and creating jobs.
UK Sustainable Development Commission	An economic recovery package aimed at investment in the technologies and infrastructures needed for the transition to a sustainable, low carbon society.
Center for American Progress	Expand job opportunities by stimulating economic growth, stabilising the price of oil, and making significant strides toward fighting global warming and building a green, low-carbon economy.
The Greens/EFA Group	Targeted state investment in activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems.



2.3 Comhar SDC Definition

In formulating the definition of a Green New Deal for Ireland, Comhar SDC has been guided by the belief that such a deal should be strongly aligned with overarching sustainable development principles. Unless this link is explicitly made then any recovery will only be illusory in the sense that it will return us to the same unsustainable growth path as before.

Instead what is required is to fundamentally realign policy with sustainable development goals at all levels of society. Without this broader vision, reviving the economy will fail to address other systemic risks posed by climate change, peak oil, endangered ecosystems and social inequity. It is important to manage these risks and improve resource efficiency not only due to environmental and social concerns but also because this is the only way to achieve long-term sustainable economic development.

For these precise reasons Comhar SDC proposes the following definition of a Green New Deal for Ireland:

- Revive the Irish economy and create job opportunities through building an innovative, low-carbon and resource efficient society
- Protect ecosystems and biodiversity while reducing fossil fuel dependency
- Provide for greater social inclusion through stimulating new green jobs, reducing fuel poverty and delivering better access to transport
- Build ecological resilience and capacity to adapt to climate change

3. Review of International Green Stimulus Commitments

3.1 Introduction

In response to the global economic turmoil, many governments around the world have been urgently putting in place economic recovery programmes in an attempt to stave off the worst of the financial crisis. The aim of these fiscal stimulants is to bolster the economy through a combination of tax cuts, social spending and public investment. A total of around \$3 trillion has been committed so far with the likelihood of more to follow.

Importantly, all of these economic stimulus packages offer a clear potential both for green investment and for fiscal and regulatory reforms to promote sustainability. According to an analysis by HSBC Global Research, out of a total amount of almost \$2.8 trillion committed to economic recovery plans to date, \$436 billion (15.6% of the total) can be characterised as green stimulus¹⁴.

In Ireland, the Government has focused its economic recovery plan around trying to get the public finances in order through a combination of tax increases and spending cuts. It has also attempted to shore up the banking system through a large-scale recapitalisation programme and the commitment to establishing the National Asset Management Agency (NAMA). Such recovery measures as these offer an unprecedented opportunity to contain a 'sustainability' component. For example, direct support for the financial sector should be allied with conditions to ensure that lending is preferentially targeted at sustainable investments. In the case of NAMA, a sustainable development strategy needs to be designed and implemented for the portfolio so that it incorporates environmental, social and economic performance criteria. Such an approach should seek to gain an understanding of the relationship between the commercial value of the NAMA estate and the degree of connectivity (transport links, energy supply, communications infrastructure, schools, hospitals etc.) and the potential contribution this can make towards meeting environmental obligations.

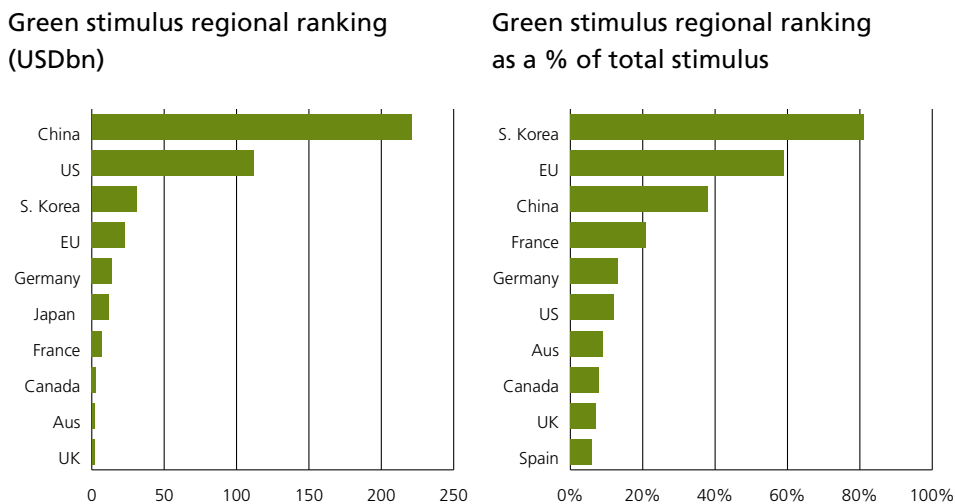
3.2 International Green Stimulus Packages

As part of their respective economic recovery packages, countries around the world have also been committing themselves to pursuing green stimulus measures. Figure 1 provides an indication as to how much money has so far been committed and which countries appear to be leading the way.

As can be seen, the extent of green stimulus varies considerably across countries. Some plans have a minimal green component while others (notably China, the EU package and South Korea) contain green investment measures that represent a significant amount of overall recovery funding. Across the world, approximately 16% of existing commitments are targeted towards green investments.

14 HSBC (February, 2009), *A Climate for Recovery – The Colour of Stimulus Goes Green*

Figure 1: Green Stimulus Spending



Source: HSBC (2009)

The ‘greenest’ recovery package appears to be South Korea’s where over 80% of the stimulus is targeted towards environmental goals. The funding is allocated to four main areas:

- conservation (low carbon vehicles, clean energy and recycling)
- quality of life (green neighbourhoods and housing)
- environmental protection (including flood defence)
- infrastructure (IT and green transport networks)

However, some caution needs to be exercised as certain parts of the South Korea stimulus package could only loosely be termed environmentally sustainable. For example, a major component of the package involves removing sludge from river beds for better navigation and depositing it on the shores for better flood protection. Although this may meet particular economic and social objectives the environment may suffer as a consequence¹⁵. Comhar SDC is mindful in formulating its proposals on a Green New Deal for Ireland to take such ‘greenwashing’ into account¹⁶.

In the US, the Obama administration’s American Recovery and Reinvestment Act 2009 (ARRA) dedicates around \$94 billion (12% of the total recovery package) to what could be characterised as green stimulus measures. This includes \$26 billion for low carbon power (mainly renewables), \$27.5 billion for energy efficiency in buildings, \$4 billion for low carbon vehicles, around \$10 billion for rail and \$11 billion to upgrade the electricity grid.

15 Email correspondence with Hans Vos of the European Environment Agency.

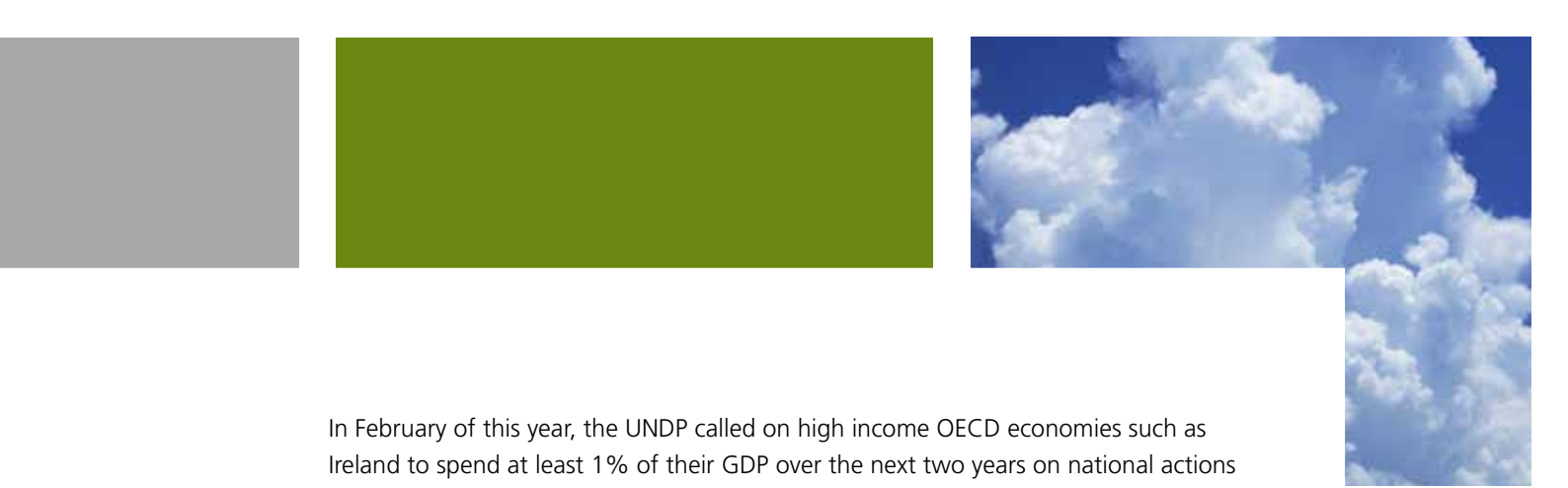
16 See Ecofys & Germanwatch (2009), *How Climate Friendly are the Economic Recovery Packages?*

3.3 Assessment of Ireland's Green Stimulus Package

The Irish Government's current economic recovery plan is contained in the policy document 'Building Ireland's Smart Economy'. This plan includes a range of measures designed to take account of the need for greater sustainability. Some of these measures are summarised in Table 2 below.

Table 2: Summary of Sustainability Measures Contained in 'The Smart Economy'

POLICY SECTOR	MEASURE
Renewable electricity	The Government will increase the production of renewable electricity in a cost-effective manner to meet the new increased target of 40% of electricity from renewable resources by 2020; A framework will be in place in early 2009 to support the development of auto-generation projects by large industry as well as micro-generation in the small business, agriculture and domestic level;
Infrastructure	EirGrid will spend €4 billion between now and 2025 building a new electricity transmission system to tap into renewable energy resources; The East West interconnector will be completed in 2012 while planning further interconnection to the UK and the Continent;
State Bodies	The ESB has set out its own zero emissions corporate plan for 2030 and a related €22 billion long term investment budget; Bord Gáis have set out a €5 billion investment strategy to develop the gas network and clean energy technologies;
Energy efficiency	€30 million will be spent in 2009 helping the installation of better insulation in over 25,000 houses; In the first quarter 2009 the Government will publish its National Energy Efficiency Action Plan including the targeted 33% improvement in energy efficiency in its own services by 2020;
Transport	The Government will publish a National Sustainable Transport and Travel Action Plan early in 2009; The Government will work towards our target of 10% of Ireland's road transport fleet being electrically powered by 2020;
Fiscal policy	An announcement on the issue of a Carbon Levy, assisted by recommendations of the Commission of Taxation, will be made in Budget 2010; The Irish Government will support measures at EU level to have a lower rate of VAT apply to eco-friendly products;
Social policy	Under the Strategic Innovation Fund, priority will be given to flexible learning initiatives that can be targeted at up-skilling people in the workforce; Specific actions include increased Job Search Supports capacity; an initiative to target young people who become unemployed; additional places, predominantly in training for the unemployed;
Natural resource policy	Investment in the agriculture, fisheries and food sectors including environment enhancing schemes, R&D and continued support for sustainable forestry; Continued support for the development of eco and green tourism;



In February of this year, the UNDP called on high income OECD economies such as Ireland to spend at least 1% of their GDP over the next two years on national actions for reducing carbon dependency, including removing subsidies and other perverse incentives and adopting complementary carbon pricing policies.

The Grantham Research Institute in the UK has suggested that an appropriate target for green stimulus should be in the order of 20% of the total economic recovery packages¹⁷. Sir Nicholas Stern is on record as saying that to avoid the worst impacts of climate change we should be spending 1% of global GDP each year. This contrasts with losing 5% of global GDP each year if we fail to act. The Northern Ireland Green New Deal group recently estimated the total cost of a full green recovery package for N.I. to be about £900 million per year or 2% of their GDP.

Based on these figures, the equivalent commitment for Ireland would be in the region of €3.7 billion – significantly less than the amount of money committed by the Irish Government to the recapitalisation of Irish banks and also in the same region as the country’s annual fossil fuel bill. Therefore, a clear argument can be made that Ireland – like many other governments – should be committing more financial resources to a sustainable, low-carbon recovery.

Since July of last year the Irish government has committed to spending approximately €700 million to green stimulus programmes (see Table 3). This amounts to 0.37% of Irish GDP or 10% of the Government’s bank recapitalisation programme. Comparative figures for G20 countries are shown in Figure 2.

Table 3: Irish Government Green Stimulus Spending*

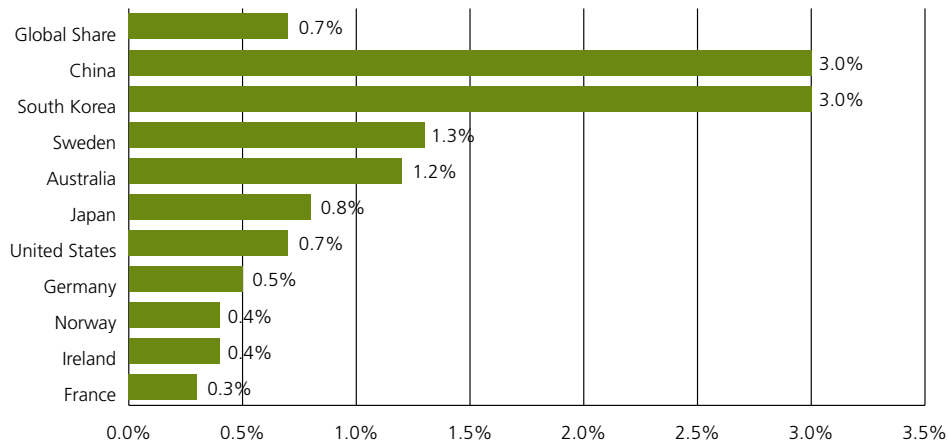
COMMITMENTS POST FINANCIAL CRISIS (JULY 2008)**	MILLION (€)
Water infrastructure	500
Home Energy Saving Scheme	50
Warmer Homes Scheme	50
Low Carbon Housing Scheme	9
Electric Vehicles RD&D	1
Education/Awareness on Litter/Graffiti	1
Market Development of Recyclates	13
Smarter Travel Areas	50
Cycling Infrastructure	18
Total	692

* These commitments vary from being in some cases annual budget allocations to others being multi-annual capital allocations.

** Doesn’t include Accelerated Capital Allowance Scheme, Smart Metering Pilot Programme, REFIT extension and Microgeneration Scheme.

17 Grantham Research Institute (February, 2009), *An Outline of the Case for a ‘Green’ Stimulus*.

Figure 2: Green Stimulus as a Share of GDP



Source: Adapted from Barbier (2009)

In defence of the limited size of the Irish Government's 'green stimulus' to date, an estimated €17 billion investment in the low carbon sector has already been committed or earmarked for the period 2008-2020. This much larger figure includes:

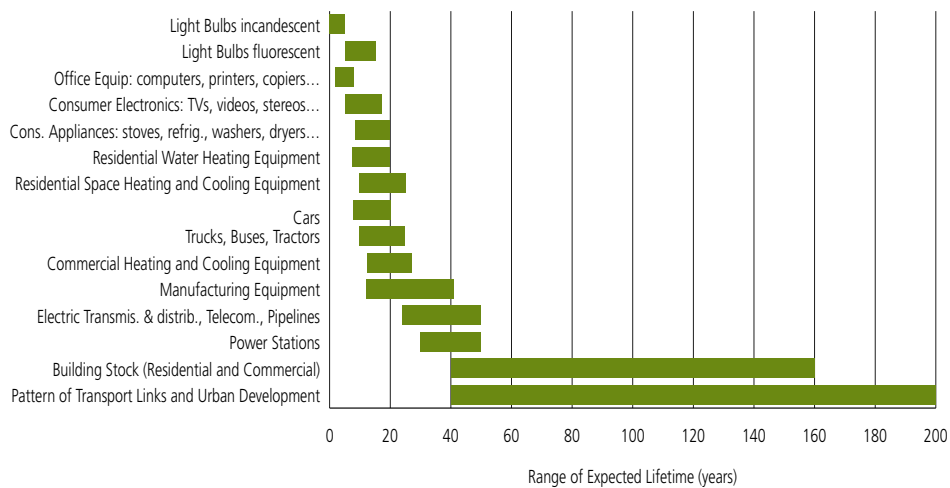
- €400 million in private sector investment in renewables through the REFIT
- €1 billion investment in the electricity transmission and distribution network
- €15.8 billion on public transport and
- €26 million Ocean Energy Programme

However, the case can be made that this commitment, in terms of its contribution to a Green New Deal, should not be factored in since it predates the financial crisis and global economic downturn. There are also doubts over whether in the current economic climate this commitment is ever fully realised.

In our view, there are a number of arguments in support of a much more extensive green stimulus recovery package in Ireland. In the first place, this higher level of investment is required anyway to have any chance of meeting the targets that have been set under the EU Climate Change and Energy Package. It is also prudent for the Government to be taking precautionary measures now against imminent threats to energy security and high energy prices that will undermine our competitiveness and economic development.

Indeed it is the investment decisions made in the next ten years that will play a critical role in defining our long-term emissions trajectory as the infrastructure we finance today will lock in technology for decades to come. This is particularly the case in the energy and transport sectors (see Figure 3). Investing in high-carbon, resource inefficient infrastructures will make it all but impossible to achieve meeting our environmental and energy targets. Now is the time to start carbon proofing our economy and reducing resource consumption.

Figure 3: Average Life-Spans for Selected Energy-Related Capital Stock



Source: IEA (2002)

4. Priority Areas for Green Stimulus Investment

4.1 Introduction

The emerging consensus is that there is a unique window of opportunity to invest now in the technologies and infrastructures that will be needed to address energy security, prevent climate change, and protect ecosystems. For instance, 'The Stern Review' estimated that if the global community fails to act then the overall costs and risks of climate change will be equivalent to losing at least 5% of global GDP each year. Much work has already been undertaken to assess what the targets should be for green stimulus spending and in many instances 'green sweet spots' have been identified.

A key element in all the discussion to date has been around the need to transition to a low carbon economy. As the Director General of the Environmental Protection Agency stated at the launch of the Annual Highlights 2008 report for Ireland in April, 'fundamental changes will be required to ensure that economic recovery, when it comes, is low carbon economic recovery which is sustainable both economically and environmentally'¹⁸.

4.2 Proposed Methodologies for Assessing Target Areas

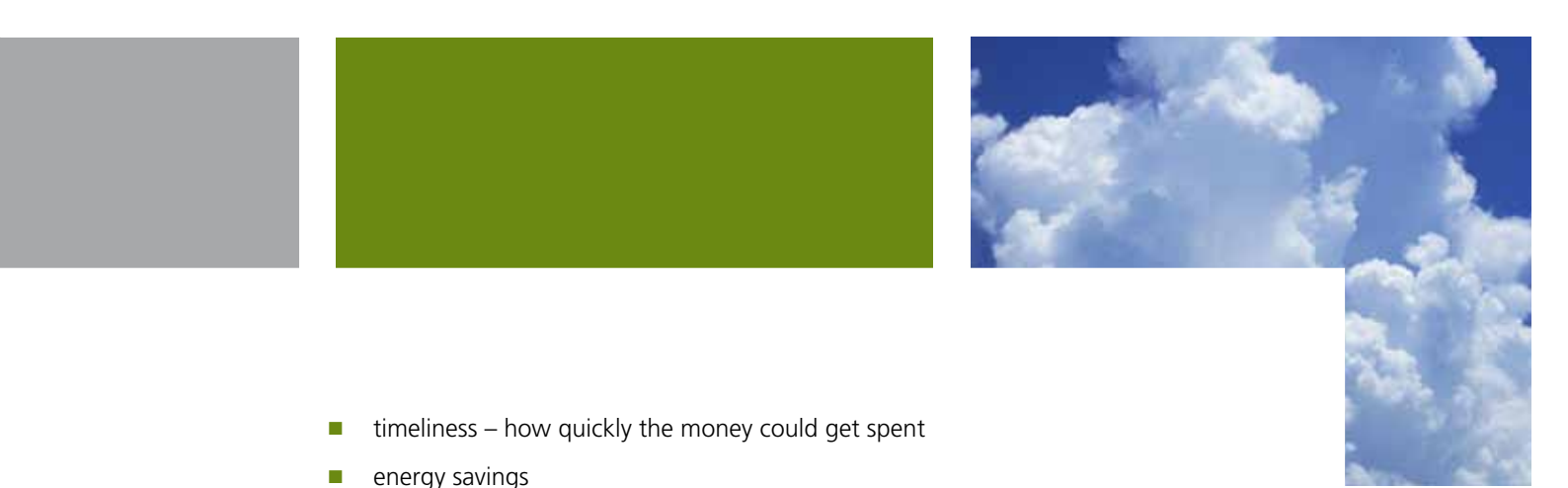
In a report published at the end of last year, Deutsche Bank identified a 'green sweet spot' for stimulus spending, consisting of investment in energy efficient buildings, the electricity grid, renewable energy and public transportation¹⁹. One of the reasons that the 'green sweet spot' is an attractive focus for an economic stimulus is the labour-intensity of many of its sectors.

Both the Grantham Research Institute and World Resources Institute provide a useful range of criteria against which targets for green recovery should be assessed²⁰. These include:

18 Environmental Protection Agency, *Press Release* (2nd April, 2009).

19 Deutsche Bank (2008), *Investing in Climate Change 2009*.

20 World Resources Institute (2009), *A Green Global Recovery? Assessing US Economic Stimulus and the Prospects for International Coordination*.

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- timeliness – how quickly the money could get spent
 - energy savings
 - energy security
 - emission savings
 - job creation and ‘multiplier’ effects

As the HSBC report makes clear, not all of these factors are easy to assess. In particular, key questions remain over the potential for job creation, environmental effectiveness and possible multiplier effects. There are also ambiguities over what actually constitutes a green job. Therefore, robust quantitative analysis needs to be undertaken in order to provide a more rigorous assessment of the full impacts of green stimulus measures.

The work by the Grantham Research Institute provides a useful qualitative evaluation of different proposals to combat climate change. A number of these proposals score well and serve as a good guide as to what should be the main focus of policy activity in this area. Most of the high-ranking options are grouped in the areas of energy efficiency in buildings, renewable energy, the electricity grid and public transportation. It includes measures such as residential and public sector energy efficiency programmes, renewable heat and electricity deployment, upgrade to smart electricity grid and integrated public transportation systems and schemes. Another area that scores well is afforestation and expanding and developing green infrastructure such as parklands, wetlands and rural ecosystems.

The World Resources Institute evaluated twelve potential energy related programmes in the U.S. and Table 4 below shows the qualitative results of their analysis. As can be seen, energy efficiency and retrofitting of public sector buildings rank well in terms of speed. The employment impacts are greatest for tax credits that support investment in renewable energy and cleaner vehicles. Investment in battery storage R&D scores well in terms of energy savings and security as well as emission reductions.

Table 4: World Resources Institute Analysis

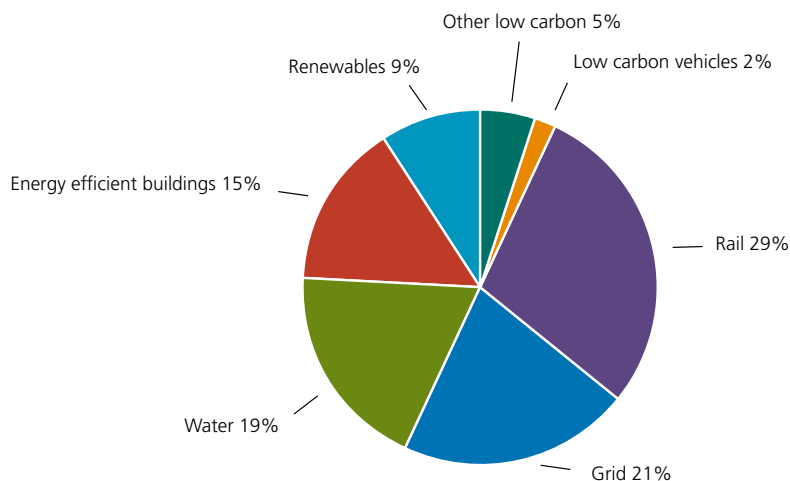
A GREEN RECOVERY: IMPACTS PER BILLION DOLLARS OF GOVERNMENT SPENDING						
		Speed	Employment	Energy Savings	Energy Security	Climate Change
Green Programmes	Approximate impact	How quickly the money gets spent	Job-years created	Long-term energy cost reductions	Reduction in U.S. oil imports	Direct emission reductions
Household Weatherisation	Weatherise 377,000 homes	●	●	●	●	●
Federal Building Retrofits	Reduce Federal energy consumption by 8 trillion BTU	●	●	●	●	●
Green School Construction	Improve efficiency of all new schools by 33 per cent	●	●	●	●	●
Production Tax Credit Extension	Incentivise 1,500 megawatts of additional wind generation capacity	●	●	●	●	●
Investment Tax Credit Increase	Incentivise 300 megawatts of additional solar power	●	●	●	●	●
Carbon Capture and Storage Demo Projects	Fund the CCS component of a 500 MW demonstration project	●	●	●	●	●
Cash for Clunkers	500,000 vehicles traded in	●	●	●	●	●
Hybrid Tax Credit	Incentivise the purchase of 190,000 hybrids	●	●	●	●	●
Battery Research & Dev.	FreedomCAR objectives met	●	●	●	●	●
Mass Transit	Decrease vehicle-miles travelled by 18 million per year	●	●	●	●	●
Smart Grid	Install smart meters on 4.4 million homes	●	●	●	●	●
Other Programmes						
Tax Cuts	Increase consumer spending by \$333 million	●	●	-	-	-
Road Investment	Increase vehicle-miles travelled by 11 million per year	●	●	●	●	●
● High impact	● Low impact					
● Moderate impact	● Negative impact					

Source: World Resources Institute (2009)

4.3 Targets for International Green Stimulus Spending

The evidence base provides us with a useful indication as to where countries have focused their efforts to date in terms of channeling green recovery funds. The spread of these investments across the existing portfolio of commitments (amounting to \$436 billion) is shown in Figure 4. The highest level of commitment thus far has been in the rail network (27%), though this is heavily influenced by the large investment by China in this area. Following this, the upgrading of the electricity grid, water and ecosystem protection and improving energy efficiency in buildings are seen as key priority areas by many countries.

Figure 4: Priority Areas for Green Stimulus



Source: HSBC (2009)

4.4 Priority Areas for Ireland

In determining what should be the priority areas for a Green New Deal in Ireland, the analysis has been informed by the work of the Grantham Research Institute and other like-minded bodies as well as the work of the Northern Ireland Green New Deal group. The latter of these is particularly important in terms of addressing the all-island aspect of the Green New Deal. For instance, in areas such as renewable energy, grid development and skills provision, all-island dimensions have significant potential. With this in mind, the paper identifies seven key priority areas for Ireland which should form the basis of any green stimulus programme. These seven are by no means exhaustive, but they demonstrate clearly where the policy focus should be concentrated.

For Ireland, as in many other countries, there is a clear need to bridge the gap in terms of linking R&D and emerging technologies to commercialisation. The country should be looking to develop an export market in green technologies and use our traditional skills base as the foundation for making the transition. The Industrial Development Authority should also have a focus in attracting foreign direct investment to Ireland in this area.

In the first instance, priority should be given to maximising the potential of our resources in sectors where we already have inherent advantages such as wind and wave energy. The agriculture resource in Ireland should be used towards supporting the implementation of a Green New Deal and at the same time enhancing rural development. This includes investing in such activities as afforestation, renewable energy production and environmental protection. Agri-food and tourism sectors are important for the economy and offer significant potential for green jobs.

Related work in this field is being conducted by the government appointed 'High-Level Action Group on Green Enterprise'²¹. This group is due to report in October with recommendations on how to move forward in positioning Ireland at the forefront of global developments in this sector. The focus of this group's work is very much on new business opportunities in the green enterprise sector whereas the Green New Deal manifesto also seeks to address the environmental and social dimension.

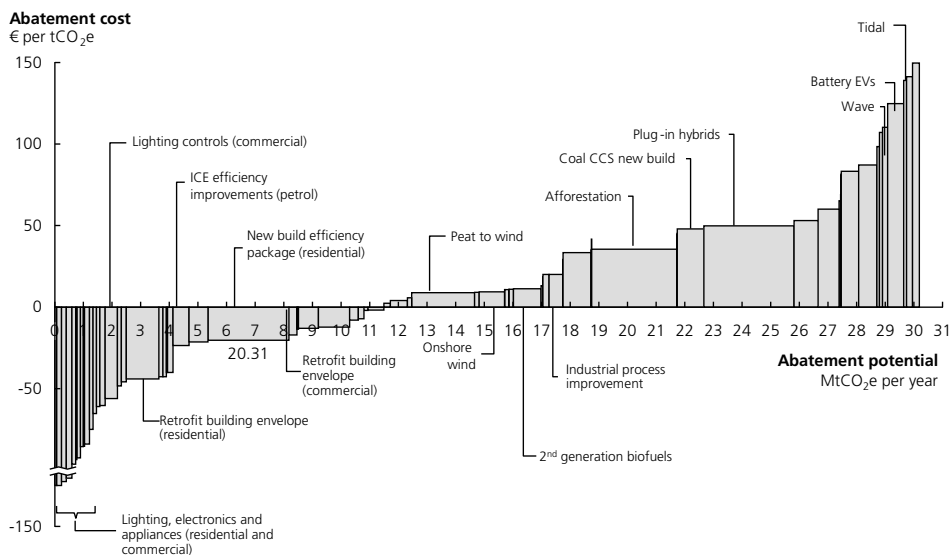
The State energy agency Sustainable Energy Ireland has also been leading a project with McKinsey consultants to develop marginal abatement cost curves for Ireland²². This work provides guidance on what should be the priority sectors for Ireland in terms of implementing cost effective mitigation measures. Figure 5 demonstrates some of the outputs from this work.

As can be seen, considerable carbon abatement potential exists across the economy totaling around 30 million tonnes of carbon dioxide equivalent (CO₂e). Of this, about 40% of the abatement potential is estimated to have a negative societal cost. This means that the cost of abatement is less than the savings generated over time. This includes abatement measures such as lighting and retrofitting of the existing building stock. There is also considerable low-cost abatement potential available, including a significant contribution from renewable electricity generation.

21 <http://www.entemp.ie/press/2009/20090521.htm>

22 SEI (2009), *Ireland's Low Carbon Opportunity*

Figure 5: Ireland 2030 GHG abatement cost curve



Source: SEI (2009)

In addition, there are a number of persuasive proposals coming from Non-Governmental Organisations for government to think again about new ways of stimulating the economy and addressing energy and environmental issues. The Spirit of Ireland campaign is one such group that proposes to make Ireland more energy independent and create new employment by undertaking a large-scale project to generate clean electricity through a combination of wind energy and pumped hydro storage. The group plans to bring their proposal before government in October of this year.

Bearing in mind these various outputs and also our own analysis formulated through stakeholder workshops, Comhar SDC is proposing that the Irish Government should focus on the following seven priority areas in terms of implementing a Green New Deal for Ireland:

- Improve the energy efficiency of existing housing stock
- Renewable Energy
- Transforming the National Grid
- Delivering Sustainable Mobility
- Public Sector Investments
- Skills and Training
- Green Infrastructure

Such a programme would:

- Make a significant contribution towards creating an innovation led 'smart green economy'
- Substantially reduce greenhouse gas emissions and improve energy security
- Create new jobs quickly and for the long-term benefit of the economy
- Reduce social exclusion by stimulating new green jobs and addressing the problems of fuel poverty and poor transport accessibility
- Develop opportunities for Irish businesses to compete strongly on the world stage for a share of the global market in green technologies
- Build ecological resilience and capacity to adapt to climate change



Priority Area One – Improve the energy efficiency of existing housing stock

The residential sector accounted for just under a quarter of all the energy used in Ireland in 2007 and after transport it was the second largest energy using sector²³. The sector was responsible for 24% of energy related CO₂ emissions. In 2007 the “average” dwelling consumed a total of 25,899 kWh of energy with 79% of this being in the form of direct fossil fuels.

In Ireland, 50% or roughly 730,000 of the existing housing stock was built before the first thermal insulation requirements came formally into effect in 1979²⁴. Therefore it can reasonably be assumed that pre-1980 housing stock has a poorer standard of insulation than those built after the introduction of the thermal building requirements. Taking an average cost for retrofitting households to high energy performance standards to be around €12,000 per dwelling, a programme to retrofit all pre-1980 housing would cost in the region of €8.8 billion²⁵.

Fuel poverty remains a persistent social problem in Ireland despite the wealth the country has enjoyed prior to the current economic recession. Sustainable Energy Ireland has estimated that around 60,000 households are in persistent (chronic) fuel poverty, with a further 160,000 experiencing intermittent (occasional) fuel poverty. With oil prices once again on the rise many householders will find it increasingly difficult to afford to heat their homes to an adequate temperature over the coming winters.

The work done both by the Grantham Research Institute and World Resources Institute show that investment in energy efficiency measures offer one of the most cost effective and timely ways to tackle greenhouse gas emissions, reduce fossil fuel use and eliminate fuel poverty. As a labour intensive activity it also has the potential to create significant employment opportunities at a time when increasing numbers of people are joining the live register.

In February 2009, the Government launched the National Insulation Programme for Economic Recovery. This committed a total amount of €100 million for this year to be divided between the Home Energy Saving Scheme and the Warmer Homes Scheme. This provides a good starting point for the further expansion of the programme over future years. However, the scale of the challenge is such that larger levels of funding will be required as otherwise, based on current figures, it could take up to 90 years to upgrade the older housing stock to meet suitable energy performance standards. The use of innovative financing instruments such as ‘pay as you save’ has the potential to play an important role in this area.

23 SEI (2008), *Energy in Ireland 1990 – 2007*.

24 SEI (2008), *Energy in the Residential Sector*.

25 This assumes that no retrofitting has already taken place in such houses which is unlikely to be the case. It also doesn't fully take into account cost-efficiencies and economies of scale that could result from programmatically targeting retrofit programmes (e.g. retrofitting a pre-1980 housing estate all at once).

Priority Area Two – Renewable Energy

Ireland has been set an ambitious target under the EU Renewables Directive for 16% of its final energy consumption to come from renewable sources by 2020. The latest figures available for 2007 show Ireland currently at a level of 3.3%. It is envisaged that a large proportion of this share would be met by electricity rather than from heat or transport energy modes. Separately, the Irish government has set a target for 40% of its electricity to come from renewable sources by 2020 with a current penetration level of around 12%. The majority of this renewable electricity is expected to come from onshore wind energy.

The implications of this for Ireland are that to meet its targets this will require a large increase in the penetration of renewable energy across the economy over a relatively short period of time. This will result in investment being needed to develop the appropriate infrastructure (grid, interconnection, electric vehicle charging points) which enable renewable energy to reach its maximum potential and also putting in place and delivering the necessary policy support mechanisms such as feed-in tariffs, grant programmes and biofuels obligation scheme etc.

In addition to infrastructure and policy supports, planning the optimal generation plant mix for Ireland to accommodate large shares of intermittent renewables will also be critical to the long-term development of the sector. Currently, there are 3,900 MWs of renewable generation awaiting connection under the Gate 3 Process. There are also 3,400 MWs of conventional generation that is seeking connection within the same timeframe. The regulator and TSO must consider the most effective way to integrate this connection process such that it balances cost efficiency with the need to provide more flexible plant on the system.

These types of enablers are important as there are signs that the current financial crisis has resulted in a falloff in the amount of clean energy projects coming to market. Although the supply bottlenecks for wind turbine deliveries have subsided, project developers are now faced with the situation where it has become increasingly difficult to access finance for their projects. The economics of clean energy projects has also been undermined recently by falling fossil fuel and carbon prices.

Currently, the main support mechanism on offer for renewable electricity in Ireland is the renewable energy feed-in tariff (REFIT). The REFIT is a government backed scheme that provides fifteen year supports to renewable energy project developers through the imposition of special tariff prices for their electricity output. The prices are differentiated by renewable energy type and the scheme was recently extended to include new technologies.

The potential exists to develop an indigenous renewable energy industry in Ireland. Although the wind turbine market has largely been captured by Denmark, Germany and Spain, other business opportunities remain in the areas of ocean energy, bioenergy²⁶, small-scale renewable production and the use of ICT technology. The recent job announcements by both Biospark and C&F in times of severe economic difficulty show precisely the possibility that exists for the renewables sector to grow in Ireland.

²⁶ For biofuels it is important to ensure that they meet strict sustainability criteria as advanced by the European Union and as a result avoid any adverse impacts on biodiversity and food production.



Priority Area Three – Transforming the National Grid

A significant barrier to developing a low-carbon economy in Ireland is the electricity grid. The grid and its associated infrastructure were historically not designed with renewable energy or dynamic demand side response in mind. Although the grid has been enhanced over the years, it was originally designed essentially to connect large point-source producers to largely passive users. Generally speaking, it is weakest in the areas where the best renewables resources are located – in western parts of the country.

The role of the Commission for Energy Regulation, as the national regulator of Gas and Electricity Markets, has been primarily to create a stable and secure energy market and to keep prices down for consumers. Comhar SDC believes the need to decarbonise the electricity system should be at the heart of the regulatory framework. This is a critical success factor for achievement of the Government's emissions and renewable energy targets.

The Government's current policy for the development of the national grid is contained in its strategy document 'Grid 25'²⁷. This Strategy involves upgrading the high voltage system with an investment of approximately €4 billion over the period to 2025. The Strategy reflects the output of the All-Island Grid Study and is consistent with the Gate 3 process for connection of wind generation.

Comhar SDC is supportive of the strategy in ensuring that the National Grid is adequate for the critical role it has to play in securing a low-carbon future for Ireland. The National Grid should be transformed into a 'Smart Grid'. This would enable electricity consumers and producers to communicate pricing, supply, and demand information in real time and thus purchase, sell and use power more efficiently. Essentially it would have the following main attributes:

- It would enable distributed generation, thereby empowering consumers into becoming energy producers in their own right, feeding into the grid through micro-generation
- It would allow for the rapid connection of large-scale renewables such as wind, tidal and wave, particularly through strengthening weak parts of the grid
- It would enable active participation by consumers in demand side response by accelerating the roll-out of smart meters and other appropriate technology
- It would provide the regulatory environment for both investment in low-carbon innovation and flexible generation plant
- It should enable the development of new products, services, and markets for smart grid technology

²⁷ EirGrid (2008), *Grid 25 – A Strategy for the Development of Ireland's Electricity Grid for a Sustainable and Competitive Future*.

Comhar SDC welcomes the recent announcement²⁸ that the European Investment Bank is to provide a €500 million investment package in the Irish electricity sector. This investment covers €300 million in loans for the Ireland-Wales electricity interconnector and €200 million in loans to encourage the development of wind farms. This is the first time a loan sanctioned under the EU's economic recovery plan has been used for an energy project, and the first EIB loan for renewable energy in Ireland.

28 28th September 2009 - <http://europa.eu/rapid>



Priority Area Four – Providing Sustainable Mobility

The transport sector in Ireland is a significant fuel consumer, accounting for 34% (5,487 ktoe) of Ireland's primary energy demand in 2006²⁹. The sector was responsible for 36% of Ireland's energy related CO₂ emissions in 2007, higher than any of the other sectors, namely industry, residential and services sectors. Energy use in the transport sector has grown by 182% (6.3% per annum on average) between 1990 and 2007. A key characteristic that distinguishes energy use in transport is the almost total dependence on oil as a fuel and on import dependency, over 99% in both cases. While other sectors may have shown some decoupling of energy use from economic growth, transport has maintained a strong correlation and CO₂ emissions have continued increasing as a result.

In addition, there are other significant external costs associated with transport. These include:

- Air quality (NO_x, PM, VOCs)
- Congestion
- Noise
- Safety (road accidents)
- Health (obesity)

Comhar SDC made recommendations to Government in May 2008³⁰ urging prioritisation of sustainable transport policy in the following key areas:

- Incentives (fiscal measures)
- Integration with planning
- Infrastructure
- Institutional arrangements
- Information

The Government has since published its sustainable transport policy, 'Smarter Travel', earlier this year³¹. It contains 49 actions grouped under the five key strategic goals: (i) to reduce overall travel demand (ii) to maximise the efficiency of the transport network (iii) to reduce reliance on fossil fuels (iv) to reduce transport emissions (v) to improve the accessibility to transport. It has also published for the first time a 'National Cycle Policy Framework' that seeks to make cycling in Ireland more accessible and a much safer activity.

29 SEI (December, 2007), *Energy in Transport*.

30 http://www.comharsdc.ie/_files/Comhar%20STAP%20report.pdf

31 Government Publications (February, 2009), *Smarter Travel – A Sustainable Transport Future*

As a critical element of any Green New Deal, the Government should commit to the full implementation of both 'Smarter Travel' and the 'National Cycle Policy Framework'. This would help people to both avoid the need to travel, and to find more efficient, and lower-carbon ways of making essential journeys. It would lead to a reduction in the negative externalities resulting from transport activity and create a healthier and better living environment for its citizens.

'Smarter Travel' needs to be reinforced through further measures; including fiscal incentives (road pricing), redesigning road space (bus priority lanes, cycle lanes), and regulatory measures (re-allocating car parking space for bicycle and car clubs).



Priority Area Five – Public Sector Investments

The public sector should serve as a driver and exemplar for best practice in terms of sustainability. As the biggest landowner, property owner and tenant in the State, it must lead by example in demonstrating and adopting stringent energy efficiency standards and practices that can be replicated across the wider community and private sector. This responsibility has been recognised in the recent National Energy Efficiency Action Plan where the public sector has been set a higher target of 33% energy savings by 2020³².

One way to achieve this goal is through Green Public Procurement. This can play a crucial role in creating markets and supply chains for renewable technologies and energy efficiency products. On 16 July 2008, the European Commission adopted its 'Communication on public procurement for a better environment.' The Commission proposes an indicative target of 50% Green Public Procurement (GPP) to be reached by Member States by the year 2010. Despite a commitment in the National Climate Change Strategy, the Irish Government has yet to publish its Action Plan for Green Public Procurement. The development of 'forward procurement commitments' where the public sector sets specifications for low carbon, resource efficient products and services it seeks to purchase in the longer term can drive up standards and innovation and unlock investment while guaranteeing future markets.

As the largest owner of a vehicle passenger fleet in Ireland, the State can also play a key role in delivering sustainable transport solutions. In March 2009 the Council of Ministers adopted a new Directive promoting clean and energy efficient road transport vehicles that are in use by public authorities³³. The Directive aims to stimulate the market for clean and efficient vehicles and to stimulate developments and investments by the industry. The new measures extend to all purchases of road transport vehicles by public authorities or by transport operators charged with public service obligations. The Directive requires that energy and environmental impacts linked to the operation of vehicles over their whole lifetime be taken into account in purchase decisions.

The appraisal of Central Government capital projects in Ireland is another area where Government can show leadership. Comhar SDC made recommendations in 2008 proposing a methodology to factor in the price of carbon emissions in the CBA process used in Central Government capital project appraisal in Ireland³⁴. Government has since made a commitment to amend current capital appraisal and cost-benefit analysis guidelines in early 2009 to incorporate best practice in reflecting the cost of CO₂ emissions in cost benefit analyses.

Public sector investment in water and waste infrastructure will ensure that Ireland is able to provide adequate services for its citizens and meet its obligations under various EU directives. In particular, meeting the objectives of the Water Framework Directive will be challenging and require significant public investment.

32 Department of Communications, Energy and Natural Resources (2009), *The National Energy Efficiency Action Plan 2009-2020*.

33 EC (2009), *Directive on the promotion of clean and energy-efficient road transport vehicles*.

34 Comhar SDC (2008), *Carbon Pricing for Central Government Cost Benefit Analysis in Ireland*.

Priority Area Six – Skills and Training

This proposal supports the other priority areas and without it the full positive impact of a Green New Deal programme will not be realised. A framework needs to be put in place to advance the skills and training required for the sustainable jobs of the future. This is important if the country has aspirations to be at the forefront of the new wave of green technology. Forfás have already identified skills shortages as having the potential to impede growth of the environmental goods and services sector in Ireland.

Skills and training should be targeted at different groups such as the unemployed, employed and third level sector and should be linked to incentives for industry to engage in schemes. Proposals on the potential role skills and training can play in delivering the Green New Deal objectives in each of the priority areas should be developed. Although some of the proposals can be met by existing capacity, many others will definitely require reskilling and upskilling. Therefore, the skills sector will need to be able to design the courses and provide the required training within a short period of time.

For each of our proposals this means:

- identifying the skills and resources needed in consultation with the relevant government departments, agencies, and industry
- engaging with professional bodies and national training authorities on the range of the skills required
- determining if training providers (whether colleges, private sector training companies, or employers themselves) are able to supply the training needed and if not consider setting up a National Skills Academy for Environmental Industries like in the U.K.
- determining how best to foster awareness amongst companies of the opportunities this kind of 'Green New Deal' could create for them, so that they create demand for skilled employees
- identifying the need for any additional financial support to the extent that there is demand for skilled labour but shortage of funds means this does not translate into demand for courses.



Priority Area Seven – Green Infrastructure

Green infrastructures and the protection and enhancement of ecosystem goods and services should be viewed as critical infrastructure for Ireland in the same way as our transport and energy networks and as vital to sustainable development. The development of green infrastructure includes multifunctional green spaces in urban areas as well as ecological connectivity in the wider landscape and is an integrated approach to spatial planning and development.

Our natural environment directly supports diverse industries such as agriculture, pharmaceuticals, pulp and paper, horticulture, construction and waste treatment. Biodiversity also provides society with free ecosystem services such as water purification, flood protection, climate regulation and pollution regulation. The loss of biodiversity threatens our food supplies, opportunities for recreation and tourism, sources of medicines and energy. Also the loss of biodiversity denies future generations the range of cultural, scientific and commercial opportunities from new biotechnologies and sources of raw materials for pharmaceuticals.

Continued degradation of ecosystems in Ireland would impact directly on sectors such as agriculture, forestry, fisheries, aquaculture, water services and tourism. It will also limit our ability to adapt to climate change and build ecological resilience. Investing in environmental protection will provide the foundation for long term progress. Building Ireland's Smart Economy identified investment in the agriculture and food sectors especially environment enhancing schemes and continued support for sustainable forestry as measures contributing to economic recovery.

Further analysis will need to be undertaken to identify what should be the priority actions in this area but in the first instance this could include investment in afforestation, realignment of agricultural subsidies with ecosystem enhancement and investment in job creation in the area of environmental protection which would also ensure targeting of rural communities. Farmers should be rewarded for the delivery of public goods such as social cohesion and employment in rural areas, ecosystem services, landscape and nature protection and contributing to a healthy diet. This could be initially facilitated under an extended REPS programme before moving to a properly funded environmental scheme. Development of green infrastructure will also contribute to the growth of eco and green tourism through protection and enhancement of the landscape.

4.5 Job Potential

Much work has already been undertaken relating to the job impact potential of a Green New Deal programme. These job benefits are in addition to other social returns such as economic savings from lower fuel bills, reduced congestion and pollution and improved quality of life through healthier lifestyles and lower levels of obesity.

It's been estimated that a large-scale programme to deploy renewable energy in the EU in order to meet the 2020 target could create up to 410,000 new jobs and add 0.24% additional GDP³⁵. The South Korean Green New Deal estimates that it will create almost one million new jobs. A recent study by the Irish Wind Energy Association estimated that the Irish wind energy sector alone to 2020 could sustain more than 10,760 jobs³⁶.

Numerous other recent studies have made similar calculations on the employment potential arising from green stimulus measures. One such report is that done by the Political Economy Research Institute (PERI)³⁷. It identifies six priority areas for investment: retrofitting buildings, mass transit/freight rail, smart grid, wind power, solar power and next generation biofuels. The study calculates that spending \$100 billion on these measures over a two year period would create two million new jobs. By contrast, the same money if directed at the oil industry would generate fewer than 600,000 jobs.

However, there remain uncertainties over the precise potential for job creation from a green stimulus – as there are for job creation from any recovery package. Estimates differ from country to country and also from sector to sector. Ideally, what is required is a sectorally disaggregated model of potential employment to assess the precise impacts in Ireland.

In the absence of such an assessment, Table 5 summarises a number of the estimates for job creation from studies and recovery packages around the world. It shows what the money is being spent on, the estimated job creation potential, the amount of investment and the investment cost per job. The final column shows the (pro rata) employment benefit from a fiscal package worth €4 billion.

35 European Commission (2009), *The Impact of Renewable Energy Policy on Economic Growth and Employment in the European Union*.

36 IWEA (2009), *Jobs and Investment in Irish Wind Energy*.

37 Political Economy Research Institute (2008), *Green Recovery – A Program to Create Good Jobs and Start Building a Low-Carbon Economy*.

Table 5: Estimated job potential of green stimulus package

PROGRAMME	JOB CREATED OR SAVED	INVESTMENT BILLION €	INVESTMENT COST PER JOB €/JOB	JOB CREATION POTENTIAL FROM €4B
Renewables and energy efficiency (PERI/CAP study)	2,000,000	79.0	39	102,600
Renewables, grid, energy efficiency, public transport (ARRA)	2,500,000	89.0	35	114,300
Energy efficiency (Apollo Institute, US)	21,500	1.1	51	78,400
Renewables, energy efficiency, public transport, water and waste (South Korea)	950,000	24.5	26	153,800
Renewables, energy efficiency, public transport, ecosystems (UNEP)	30,000	0.8	26	153,800

Source: Adapted from the UK SDC (2009)

Although in the absence of robust modeling it is difficult to say with a high level of certainty, there is a reasonable consensus from these estimates that a stimulus package of up to €4 billion a year could theoretically create at least 100,000 direct and indirect new jobs. This could be underpinned by procurement policies that promote quality jobs and sustainable enterprises encouraging companies to uphold social, labour and environmental policies.

Examples of the type of areas where new jobs will be created include:

- Civil, chemical and structural engineering
- Plant maintenance and operation
- Research & Development
- Insulation and home energy appliances
- Plumbing, electrical work
- Software programming, ICT sector
- Forest maintenance and timber processing

Table 6 attempts to identify where green enterprise opportunities may exist for Ireland across the different priority areas. This is only indicative with further work required to assess the precise enterprise potential.

Table 6: Green Enterprise Opportunities across the Priority Areas

PRIORITY AREA	GREEN ENTERPRISE OPPORTUNITIES
Building Retrofitting	Supply and manufacture of energy efficiency equipment and products e.g. boilers, insulation materials, heating controls
Renewables	Ocean energy, bioenergy, small-scale renewables, ICT technology, nanotechnology, solar PV materials, wind offshore devices, R&D, logistics, electricity exports
Smart Grid	Grid infrastructure, demand side management technology and devices, R&D
Sustainable Mobility	2nd generation biofuels, ICT technology for electric vehicles, R&D
Green Infrastructure	Supports employment in agriculture, forestry, food and tourism sectors
Green Public Procurement	Supply of low carbon, resource efficient products and services



5. Making it Happen

5.1 Introduction

In order to deliver the idea of a Green New Deal for Ireland from concept to reality, concrete policy instruments are required that can unlock the door and mobilise the transformation to a more sustainable economy and society. Some of the most important policy instruments to be considered include the following:

- Fiscal Instruments
- Green Procurement
- Grants/Subsidies
- Regulation
- R&D
- Information
- Skills/training
- Bonus/malus schemes

Institutional arrangements also have a very important role to play and need to be structured and aligned with policy instruments if they are to prove effective. The following section provides an assessment of the different policy levers to determine the extent to which they are currently being deployed in Ireland.

5.2 Assessment of Policy Instruments

Fiscal Instruments

A basic principle underpinning all other policies is that economy-wide prices should reflect overarching sustainability goals. It is well-established that to reduce the externalities resulting in environmental and social impacts, there will need to be a radical change in people's behaviour. Consumers need guidance in the form of pricing to make the right purchasing decisions in their daily lives. Regulations can force manufacturers to produce efficient products and services but if they are not priced in a certain way then there may be no incentive for their purchase.

Examples of such instruments in operation in Ireland include the accelerated capital allowance scheme and the CO₂ based vehicle taxation system. The latter is a prime example, along with the plastic bag levy, of how effective fiscal instruments can be in changing consumers' behaviour. Following the introduction of the new taxation system in July 2008, the share of newly purchased vehicles in the three lowest emissions bands accounted for 84% of total registrations compared to 41% of registrations in 2007³⁸.

³⁸ It has been not been possible to separate out the effect between the introduction of the new taxation system and the impact of the global recession on the car market. This will become clearer once a longer time series of data becomes available.

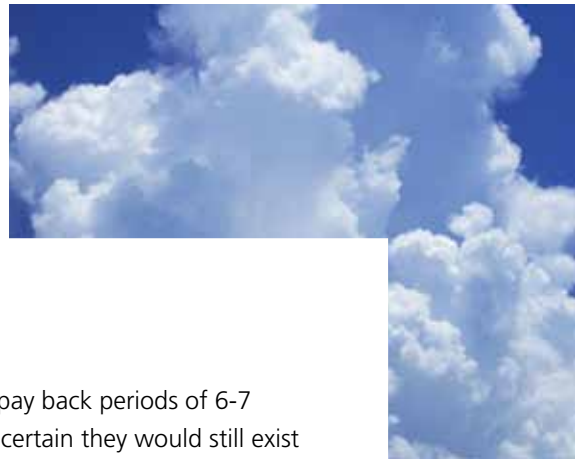
Comhar SDC has made previous recommendations for the consideration of other fiscal instruments such as road pricing, Cap and Share and carbon taxation to be applied to other areas of the economy. Careful consideration needs to be given when applying such instruments as to how they may interact with other policy measures so as to avoid any potential market distortions.

Tax reform can contribute to the objectives of a Green New Deal. A gradual shift of the tax base away from taxing what we want more of such as investment and labour, towards taxing what we want less of such as pollution and inefficient use, would also help to internalise environmental costs into service and product prices. This would in turn create more realistic market price signals. A tax base that derives a greater proportion of revenues from consumption and less from labour will also provide a wider and expanding tax-base than present, contributing to the response needed to offset the tax implications of a declining workforce and an ageing society.

Further measures that could be taken include applying a reduced rate of VAT on all low-carbon goods and services. The Irish Government has already committed to pursuing such a policy at EU level. The use of metered water charges, charges for final disposal of domestic and industrial waste and tax credits and capital allowances for energy efficiency measures and renewable energy supply in the residential and commercial sectors are other possible considerations.

The use of fiscal policy instruments can also generate a revenue stream for tackling some of the current social problems such as fuel poverty and poor transport accessibility in rural areas. Without such hypothecation such problems as these are likely to persist into the future. In fact, hypothecation is crucial not only for these reasons but also in gaining widespread public acceptability and support.

The tax-based measures currently available in Ireland, such as those under the Business Expansion Scheme (BES) and Section 486b, both have limitations that have restricted their effectiveness. BES relief is available only to individual investors and 486b relief is available to corporates only. Neither instrument is suitable for large investment projects as caps are set at an extremely low level and both are overly complex. The changes that are required include some form of positive discrimination in favour of the renewable energy sector. This could include increasing the caps available for investment under existing reliefs and also extending 486b relief to individuals. Other possibilities include extension of the R&D tax credit to renewable energy projects and some mechanism to attract a percentage of pension fund investment to this sector. The current barriers to such changes include the current economic environment, state aid clearance, and the need to have tax clients who want this form of relief.



The issue of pay back time for companies is important and pay back periods of 6-7 years would be unattractive to companies who may not be certain they would still exist at the end of that period. Taxes and capital allowances could be used to shorten the pay back time of investing in energy efficiency and green technologies.

Green Procurement

Green Public Procurement (GPP) is the approach by which the public sector integrates environmental criteria into all stages of their procurement process, thus encouraging the spread of environmental technologies and the development of environmentally sound products. The EU is promoting the use of public procurement across Member States in order to stimulate the market for eco-innovative goods and services and to assist it in achieving its environmental goals in a cost-efficient manner.

It's been estimated that public sector spending in the EU is worth around 16% of EU GDP or about €2,000 billion. Greening public procurement rules at EU and national level is seen as a means of substantially reducing unsustainable production and consumption patterns and could serve to place new environmental technologies on the market.

On 16 July 2008, the Commission adopted an ambitious set of targets for green public procurement as part of a broader action plan for 'sustainable consumption and production'. It proposed an indicative target of 50% GPP to be reached by Member States by the year 2010. As part of the agreement Member States are required to draft an Action Plan on GPP. By the end of 2006, 10 Member States had adopted draft national action plans and 10 more were working towards it. Ireland is one of those countries still in the process of putting together its action plan.

According to research carried out for the European Commission, only seven EU countries currently manage a large amount of Green Public Procurement (GPP). These are: Austria, Denmark, Finland, Germany, Netherlands, Sweden and the UK. Other EU countries lag significantly behind and in many cases do not practice any GPP at all.

There are a number of priority sectors that have been identified for GPP on the basis of their importance in terms of the scope for environmental improvement, public expenditure, potential impact on the supply side, existence of relevant and easy-to-use criteria, market availability and economic efficiency. These are: construction, food and catering services, transport and transport services, energy, office machinery and computers, clothing, uniforms and other textiles, paper and printing services, furniture, cleaning products and services and health sector equipment.

Green Public Procurement should not be limited to small changes in existing specifications. Greater opportunities exist if GPP is combined with the development of 'forward procurement commitments' where the public sector sets specifications for low carbon, resource efficient products and services it seeks to purchase in the longer term. These will unlock investment in the development and supply of new products while guaranteeing future markets for low-carbon, resource efficient goods and services. This will drive up standards and stimulate innovation. As companies will still compete for the business this new approach need not cost more and could even cost less.

In March 2009 the Council of Ministers adopted a new Directive promoting clean and energy efficient road transport vehicles that are in use by public authorities. The Directive aims to stimulate the market for clean and efficient vehicles and to stimulate developments and investments by the industry. The new measures extend to all purchases of road transport vehicles by public authorities or by transport operators charged with public service obligations. The Directive requires that energy and environmental impacts linked to the operation of vehicles over their whole lifetime are taken into account in purchase decisions.

Grants/Subsidies

The use of subsidies and preferential pricing schemes to support national policy objectives is commonplace throughout much of the world. In many cases these are not specifically aligned to sustainable development goals and therefore can have a detrimental effect on the environment and society at large.

As shown in Table 7, there are a number of subsidies and grants available in Ireland from the Government via organisations such as Sustainable Energy Ireland (SEI) and the Environmental Protection Agency (EPA). These schemes are mainly designed to encourage lower greenhouse gas emissions and stimulate market development. However, there are also a number of existing subsidies that have negative impacts on sustainable development such as those for peat generation and internal flights. The current mileage rate system in Ireland also rewards larger engine sized vehicles which often have higher carbon emissions.

Table 7: Selected subsidy and price support schemes in Ireland

POLICY SUPPORT	PRICE SUBVENTION	GRANT	DISPENSING AGENCY
Positive Subsidies			
Renewable Energy Feed-In Tariff	Y		DCENR
Renewable Energy RD&D Programme		Y	SEI
Rural Environmental Protection Scheme		Y	DoA
Rural Transport Programme	Y		DoT
Combined Heat and Power Scheme		Y	SEI
Public Transport (CIE) ³⁹	Y		DoT
Bioenergy Establishment Scheme		Y	SEI
Low Carbon Homes Programme		Y	SEI
Greener Homes Scheme		Y	SEI
Cleaner Greener Production Programme		Y	EPA
Home Energy Saving Scheme		Y	SEI
Negative Subsidies			
Peat Burning	Y		DCENR
Internal Flights	Y		DoT
Motor Travel Rates (based on engine size)	Y		DoF

There is evidence that Ireland has taken cognisance of best practice abroad through the recent change in government policy towards implementation of a feed-in tariff support mechanism for renewable energy. This type of support scheme has been shown to be successful in achieving significant penetration of renewable energy in countries operating under such a framework. However, a feed-in tariff is generally only of use to those technologies that have already reached a certain stage of maturity. For less mature technologies other finance support measures are required to stimulate market pull.

Ideally renewable support mechanisms should be gradually phased out as the technologies mature to a level where they are able to compete directly with conventional generation. In Ireland, onshore wind energy is now largely competitive against fossil fuel based electricity generation. However, support is still required due to the risk premium attached to such projects.

39 Although this subsidy supports public transport provision it can have negative effects in terms of encouraging monopolistic behaviour and preventing rural transport providers from competing on a level playing field.

The REFIT scheme provides support to renewable energy by technology based on its level of maturity. These prices are shown for Ireland and other EU countries in Table 8. It is difficult to compare these prices directly as most countries, unlike Ireland, offer a declining tariff premium in order to drive cost efficiency and technological innovation. Of the other supports available, most of the grant programmes offer financial assistance in the range of 30%-40% of total capital costs.

Table 8: Existing Feed-In Tariff Rates Across EU (€/MWh)

	ONSHORE WIND	OFFSHORE WIND	BIOMASS LFG	OTHER BIOMASS	HYDRO	WAVE	PV	GEOHERMAL
Ireland	57	140	70	72	72	220	0	0
Germany	90	150	68	95	82	0	461	111
France	82	130	48	49	76	0	300	120
Denmark	57	68	80	80	0	0	225	0
Spain	69	69	0	69	69	0	440	69
Portugal	95	95	0	105	77	260	380	0
Greece	73	90	73	73	73	0	425	73

The current patchwork of support schemes in Ireland could justifiably be classified as being fragmented. A more effective approach would be to employ fewer mechanisms designed as a more co-ordinated and coherent support system aimed at providing much needed policy certainty for both government and investors. This should be supported by a carbon tax operating within an overall revenue-neutral ambition and would address the same policy requirements at lower cost.

It is also important that existing subsidies in Ireland be aligned where possible with sustainable development objectives. For example, subsidies for peat generation (currently costing €85 million per annum⁴⁰) should be phased out with the funding used instead to support sustainable energy production. The peat subsidy currently acts as a barrier to the co-firing of electricity generation stations with biomass as there is no economic incentive. The burning of peat is not only a source of emissions due to its high carbon content but peatlands themselves are carbon stores and also a scarce natural habitat.

⁴⁰ Commission for Energy Regulation (2009), *Public Service Obligation Levy 2009/2010*.



Regulation

Putting in place the regulatory structure to provide the right price signals for investment is critical in the development of any Green New Deal. The investment decisions made in the next ten years will play a critical role in defining our long-term emissions trajectory as the infrastructure we finance today will lock in technology for decades to come. Policy certainty is required to enable investors to make rational decisions based on likely economic returns. The timely implementation of environmental legislation and EU directives at national, regional and local level is a key driver towards greater sustainability.

In the energy sector, it is crucial that the regulators and transmission system operators provide the necessary policy environment and support that can help Ireland meet its ambitious goals for renewable energy. This includes removing any technical, economic, planning and regulatory barriers that are hindering the development of the sector.

The Environmental Protection Agency has an equally important role to play in overseeing implementation of key EU Directives such as the Water Framework Directive, National Emissions Ceiling Directive and Emissions Trading Directive. These Directives, along with the Energy Performance of Buildings Directive provide the framework for driving the country towards greater environmental sustainability.

Regulation has an important role to play in pushing up standards domestically and at a European level. The Irish Government is currently committed to implementing revised Building Regulations to ensure an improvement in energy performance and a reduction of CO₂ emissions of 40% in new domestic dwellings, relative to current standards. These Building Regulations will be reviewed again in 2010 with a view to improving energy performance by 60% relative to current standards. This review should also incorporate efficiency of water use.

R&D

The role of research and development is crucial in attempting to make the transition to a more sustainable economy. With the EU having approved the Climate Change and Energy Package, the legislative platform is now in place to provide a stimulus and signal to the research community to pursue activities and programmes that will result in the Irish economy becoming more sustainable. Innovation will be the key with new business opportunities and markets developing in all sectors.

For example, in the area of renewable energy, R&D will play a leading role in developing technologies in the fields of ocean and solar energy. Although Ireland is likely to be a technology taker in electric vehicles it is ideally placed to serve as a test centre for demonstration projects. It can also be a leader in the development of second generation biofuels, intelligent energy systems and renewable heat technologies.

The climate change targets, particularly for the non-trading sector, will without question require a transformation in current policies and processes and provide Ireland with an unprecedented opportunity to position itself at the forefront of international developments. The greening of the agriculture and transport sectors will call for new ideas and innovative technologies to be produced that can better align economic growth with environmental sustainability.

The energy efficiency target can provide the incentive for the development of smart solutions to avoid unnecessary wastage and increase the productivity of the Irish economy. Demand and supply side measures are required and the possibilities for R&D in this area are limitless.

To support this activity, greater funding should be made available for research in the energy and environmental field. In doing so it is important that we bridge the gap in terms of linking R&D and emerging technologies to commercialisation. Enterprise Ireland and other state agencies have a key role to play here and ensure that public funds have an innovation dimension that taps in to the ingenuity of the business and research community in Ireland.

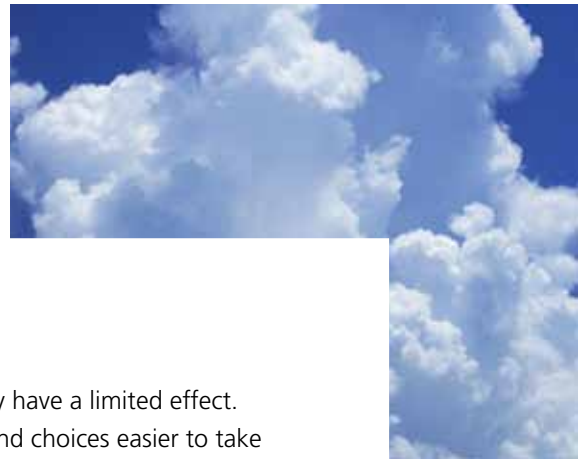
Some of the current research and development programmes in Ireland include the following:

- EPA STRIVE Programme 2007-2013
- SEI Renewable Energy Research Development and Demonstration (RERDD) Programme;
- SEI Ocean Energy Prototype Development Fund
- DCENR Charles Parsons Energy Research Awards
- SFI Sustainable Energy and Energy-Efficient Technologies

Information

The provision of information to consumers and businesses which they can then use in determining their investment and purchasing decisions is another crucial component in delivering a Green New Deal. Fiscal measures will not have the desired effect unless supported by good information to make people aware of the choices they face.

Worldwide, labeling has been used to rank domestic energy-using products such as refrigerators, washing machines, cookers, dishwashers and so on in terms of energy efficiency. This format has now been applied both to the automotive industry and the built environment and allows consumers to take greenhouse gas emissions and energy efficiency into consideration in making large purchase decisions.



However, information in the form of labeling alone will only have a limited effect. Supporting ‘choice editing⁴¹’ will make sustainable habits and choices easier to take up. Choice-editing is done by manufacturers and service-providers when they decide which products and services to offer, and to what specification; by retailers when they decide what to put on their shelves; and by governments in the product standards which they set. Choice-editing happens every day according to a wide range of criteria. A combination of product policy measures, and ‘choice editing’ by retailers, has helped to make a significant shift in the market towards more efficient white goods. Choice editing can be promoted and supported by Government through policies and public procurement and this has the potential to grow the market for low carbon, resource efficient goods and services and associated employment opportunities.

As well as vehicle and product labeling, there are other means to use information to effect positive behavioural change. For example, ecodriving training for private and commercial drivers should be obligatory at the time of first licensing. Ecodriving is a low cost policy measure to reduce CO₂ emissions from transport. Also, all firms with a large number of employees should be obliged to provide workplace travel plans. These plans work by focusing on the user at the centre of trip generation to induce travel behaviour change within the existing transport context. The objective is to maximise use of existing transport resources and reduce single occupancy car use. Allied to this is the need for real-time information to be rolled out for all modes of public transport in order to improve the attractiveness of public transport.

The Government launched a public awareness campaign in September 2005 designed to promote energy efficiency in Ireland. Called the ‘Power of One’ campaign, its goal is to achieve real and measurable change in consumer awareness and behaviour regarding energy efficiency. Additional goals of the campaign are:

- To build awareness on types and sources of energy, costs and environmental impacts
- To inform consumers about the impact that inefficient energy use has on driving up costs and the environment
- To empower Irish people as individuals to recognise how they can collectively use energy efficiently and consequently make a big difference to their own pockets and the environment

The Economic and Social Research Institute recently carried out an evaluation of the ‘Power of One’ campaign to determine the campaign’s effect on residential gas consumption⁴². The results showed that the campaign had increased self-reported interest in energy efficiency and awareness of behaviours that curb natural gas

41 UK Sustainable Consumption Roundtable (2006), *I Will if You Will – Towards Sustainable Consumption*.

42 ESRI (2009), *Advertising to Boost Energy Efficiency: The Power of One Campaign and Natural Gas Consumption*.

consumption. However, the authors failed to find any positive effect of the campaign on self-reported energy-saving behaviours.

Since 2008 the Department of Environment, Heritage and Local Government have been providing funding for the National Climate Change Awareness Campaign. The 'Change Campaign' is designed to raise public awareness about climate change including its causes, impacts and implications for Ireland. It does this through an interactive website and advertising publicity campaigns. The further expansion of the scheme plans to see the development of a carbon management tool for businesses which provides information on carbon management.

Skills/training

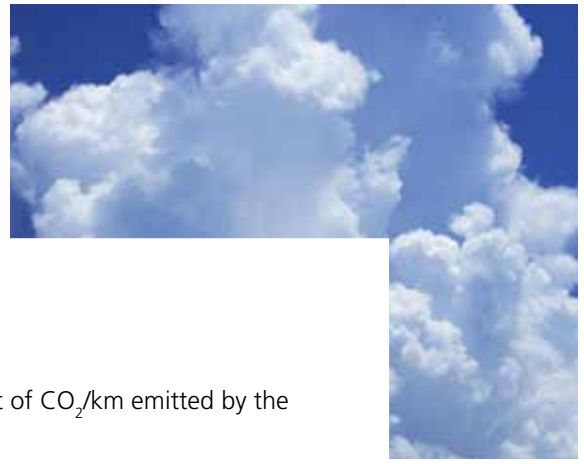
The implementation of a Green New Deal will require significant investment in providing the training and upskilling that will be necessary to fill identified skill gaps. The Government has stated that The National Training Fund (NTF) will provide support for a targeted upskilling programme for industry to address identified skills gaps and enhance the skill base necessary to attract and retain investment.

Skills and training need to be targeted at different groups such as the unemployed, employed and third level sector. These should be linked to incentives for industry to engage in schemes. A good example is a scheme in the Netherlands where companies who have had to downsize to a four day week send their employees on training courses for the fifth day and this is funded by the Government so the employee salary doesn't change and they gain new skills that are needed for the transition.

Bonus/malus Schemes

The term bonus-malus (Latin for good-bad) is used for a number of schemes which alternately reward (*bonus*) or penalize (*malus*). In insurance, a Bonus-malus system (BMS) is a system that adjusts the premium paid by a customer according to his individual claim history. Bonus usually is a discount in the premium which is given on the renewal of the policy if no claim is made in the previous year. Malus is an increase in the premium if there is a claim in the previous year. Bonus-malus systems are very common in vehicle insurance.

France announced in December 2007 that it was introducing a Bonus-malus scheme (now in operation) for new car purchases. A financial reward (*bonus*) is given to purchasers of environmentally friendly new cars and a financial penalty (*malus*) for those buying cars emitting high levels of CO₂. The purpose of the scheme is to speed up the removal from French roads of old polluting vehicles and incentivise their replacement by new more environmentally friendly ones. The scheme should also encourage vehicle manufacturers to develop ever greener vehicles and concentrate their sales efforts on these.



The amount of the bonus or malus depends on the amount of CO₂/km emitted by the vehicle. The rates applicable are:

- bonus: €200-1,000 for vehicles emitting a maximum of 130g CO₂/km and €5,000 for those emitting no more than 60g CO₂/km. It will be higher still for even greener vehicles
- malus: €200-2,600 for those emitting over 160g CO₂/km and even more for the least green vehicles

As Ireland already has mechanisms in place to incentivise purchases of environmentally friendly vehicles, such a bonus-malus scheme as applied in France may not be required. However, the theoretical framework could be used in other ways such as green insurance premiums for example.

5.3 Prioritisation of Policy Options

The policy options presented above all have a significant role to play if Ireland is to make the transition to a smart green economy. Unless these instruments are aligned and working in the same policy direction then their overall effectiveness is severely weakened. Although each policy lever is critical, Comhar SDC has attempted to provide further guidance to policymakers by prioritising those instruments that need to be mobilised most urgently in order to kick-start developments. Such policy levers can be targeted at those applications at the earlier development stage of innovation and the more established technologies that are ready for deployment.

Comhar SDC's multi-stakeholder workshop on the Green New Deal identified the most effective policy instruments that should be implemented as soon as possible as:

- Green Procurement
- Tax and subsidy reform
- Skills and training
- R&D

6. Financing the Green New Deal⁴²

6.1 Introduction

Along with pursuing the right policy instruments and institutional arrangements, the other key aspect to delivering a Green New Deal for Ireland is providing both public and private financing mechanisms that can fund the transition to a more sustainable resource efficient economy. There is clearly an issue for government in terms of raising the level of funding required to finance a green recovery programme. Therefore, the report also addresses other possible financing mechanisms that are considered potentially to have a key role to play. These instruments are listed in Table 9.

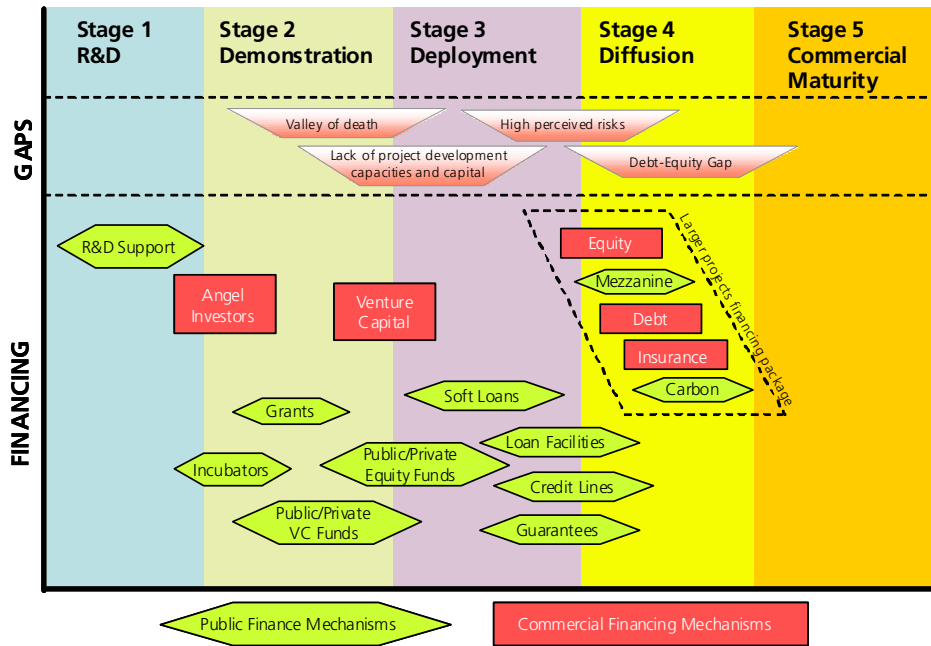
Table 9: Financing Mechanisms

PUBLIC MECHANISMS	PRIVATE MECHANISMS
Direct expenditure	Project finance
Fiscal policy	Venture capital
Auctioning revenue	Equity finance
Green bonds	Micro-finance
Asset-backed finance	Insurance
Carbon finance	Angel investors

Each instrument addresses a different aspect of the innovation pathway as shown in Figure 6. This figure demonstrates what financing is typically available through commercial sources and also some of the public finance mechanisms that can be used to fill common financing gaps. It is critical that the right finance mechanisms be fully aligned so as to provide the optimal financing framework for the delivery of a Green New Deal.

⁴³ Comhar SDC wishes to gratefully acknowledge the contribution made by Colin Hines, member of the UK Green New Deal Group, to this section of the report.

Figure 6: Finance Innovation Pathway



Source: UNEP (2008)

6.2 Assessment of Financing Options

Direct Expenditure

For a Green New Deal to work, significant capital needs to be mobilised towards low-carbon and resource efficient solutions. The most obvious option in this regard is conventional public expenditure though in the short-term at least the level of funding available appears to be limited. However, the mobilisation required is not so much a problem of capital per se, but one of capital flow⁴⁴. Existing money needs to be directed towards the solutions needed for a sustainable economic recovery. The challenge ahead is about capital reallocation and timing: How do we steer capital away from high-carbon investments and channel them towards the low-carbon economy in the timeframe required to avoid dangerous climate change?

On this basis, the revision of the National Development Plan must be consistent with the 'Smart Economy' thesis outlined in the Government's economic recovery plan. Climate change and energy security challenges will not be met if we lock ourselves in to a high carbon infrastructure for decades to come. Therefore, a sustainable approach to economic development must be pursued at all costs that recognises and internalises these future risks.

⁴⁴ Climate Change Capital (2009), *Catalyzing Capital Towards the Low-Carbon Economy*.

Government expenditure and green stimulus measures are also likely to help mobilise private sector investment through the multiplier effects that government expenditures have on the wider economy. This government intervention generates employment, income and saving, and the associated tax revenues contribute to repaying the exchequer.

Fiscal policy

Before considering any new fiscal policies, it is first important to look at the existing taxation system and consider how it could be aligned more closely with sustainable development policy goals. In doing so, there is a need to ensure that measures do not impact adversely on employment, including the need to protect current jobs as well as job creation. As an organising principle the tax base should be gradually shifted away from taxing what we want more of such as investment and labour to greater taxing of what we want less of such as pollution and inefficient use of natural resources.

The Programme for Government agreed in July 2007 states that: 'Appropriate fiscal instruments, including a carbon levy, will be phased in on a revenue-neutral basis over the lifetime of this Government.' The environment subgroup of the Commission on Taxation was established in March 2008 to investigate fiscal measures to protect and enhance the environment including the introduction of a carbon tax.

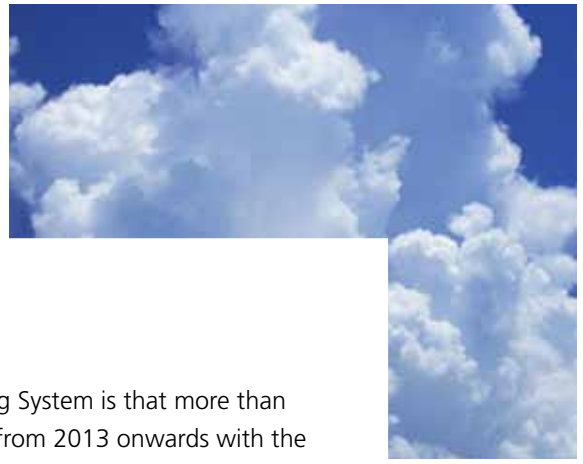
Comhar SDC made recommendations previously that the carbon tax should be phased in immediately for the non-trading sectors exclusive of agriculture at rates approximately comparable to the price of allowances faced in the trading sector, with revenues used to support a national programme of fuel poverty reduction, to support further reductions in emissions where it is clear that (a) the benefits of doing so exceeds the costs and (b) the market on its own will fail to achieve such reductions, and to fund research and development and innovation that enhances business opportunities in energy efficiency, abatement and adaptation⁴⁵.

The likely revenue scale of a carbon tax has been estimated at around €500 million per annum. There is no clear indication from Government whether in the event of a carbon tax being introduced this revenue would be ring-fenced or instead put into general government coffers. For many different reasons including public acceptability and transparency, Comhar SDC strongly advocates full hypothecation of carbon tax funds towards the uses outlined above.

Auctioning Revenue

The EU Climate Change and Energy Package not only reached agreement on setting binding targets for greenhouse gas emission reductions, renewable energy and energy efficiency, it also brokered deals on other related policy areas such as revisions to the Community emissions trading scheme.

⁴⁵ ESRI (2009), *Budget Perspectives 2009 – Mobilising Market-Based Instruments for Climate Change in Ireland*.



One of the main revisions made to the EU's Emission Trading System is that more than 50% of allowances are to be auctioned by Member States from 2013 onwards with the proportion rising each year. Specifically, the provisions include:

- Although there is an option for transitional free allowances that most new Member States could apply for, the rule for power companies is that they will have to buy all their allowances from 2013
- Industry installations not subject to carbon leakage will be required to buy 20% of allowances in 2013 rising to 70% in 2020 and 100% in 2027
- Operators at risk of carbon leakage that invest in the most efficient technologies will receive allowances for free in accordance with a benchmark based on best available technology

Therefore, as a result of this agreement, Member State governments will now receive a new revenue source. However, the Directive stipulates that Member States should use at least half of their auctioning revenues on measures to combat climate change. Based on certain assumptions about carbon prices, auctioning revenues could provide a revenue pot in the order of €500 million to governments.

Green Bonds

The Government should consider the option of funding specific elements of a Green New Deal through the issuance of 'green bonds' (see Box 1). These are bond issues which are targeted directly at low-carbon investments of the kind identified in Section 4. The returns on the bonds are linked to revenues from the investment. This idea has a strong rationale under current conditions for a variety of reasons.

The energy crunch will focus minds on mobilising alternatives to oil and gas as fast as possible. There is a large amount of money tied up in pensions and other savings, plus a recognised need by Government for people to save more. Guaranteed investments via a Green New Deal type programme will help provide the upfront funding needed for making the transition to a low-carbon future. It should also prove attractive to ethical savers and pension funds looking for safe returns from environmental investments. Additionally, such a scheme would help remove the dependency on the private sector where the financial crisis has reduced the amount of debt capital available for funding projects. Having the government guaranteeing the bond also acts as a strong incentive in ensuring it puts in place the policies and measures required to give business the certainty it needs to invest in environmental measures.

Box 1: World Bank Green Bonds

In January 2009, the World Bank launched its first “green bonds” designed to raise additional funding for projects or programmes that support mitigation and adaptation projects in developing countries. In partnership with SEB (Skandinaviska Enskilda Banken), the World Bank raised approximately US\$350 million via several key Scandinavian institutional investors. The bond issue responds to growing interest from sustainable or socially responsible institutional investors, as well as some individual investors, who wish to support climate change-related projects in developing countries.

The first issue of green bonds was denominated in Swedish kronor (SEK) for a total amount of SEK 2.325 billion and has a maturity of six years. The bonds are World Bank Aaa/AAA-rated and SEB is the sole lead manager. The interest rate payable annually is 0.25 percent above Swedish government bond rates, for a yield to investors of 3.15% per annum. A special “green account” is used for proceeds from these green bonds and funds are deducted from this account at the end of each quarter. Funds are then added to the World Bank’s lending pool in an amount equal to that quarter’s new, green disbursements to support eligible projects. In April of this year the State of California purchased \$300 million of these green bonds in furtherance of California’s climate change mitigation policies.

EU Funding

There is the possibility for the Government to secure funding through EU sources and to channel this money towards sustainable investments. The European Investment Bank (EIB) provides funding for energy and climate change activities and has established a Clean Transport Facility (CTF). The CTF supports investments targeting research, development and innovation in the areas of emissions reduction and energy efficiency in the European transport industry.

The EIB disburses loans through two main facilities – direct loans and intermediate loans. Direct loans are used to invest in large-scale projects requiring funding in excess of €25m. Intermediate loans provide funding to small and medium-scale projects (particularly to SMEs) via national and regional intermediary banks. Examples of recent EIB direct loans in environmental projects include €300m for an offshore wind power project in Belgium, over €100m to waste water and treatment projects in the Czech Republic and Romania and an agreement to finance an integrated sustainable urban development project in Cyprus. There is no reason why Irish projects should not be competing for funding from the EIB in these areas and the Government and state agencies should be supporting their case and actively promoting this funding avenue.



The Irish Government has already been successful at securing funds from the European Commission which is another source of possible finance. Earlier this year, under the EU's Recovery Plan, Ireland received €100m towards the development of the East-West Interconnector. This fits with the Commission's own strategic goals of having a stronger Europe and greater energy security. Further eligible projects that meet these criteria could potentially receive similar funding support.

Other relevant EU funding initiatives under the European Commission that the Irish Government should look to promote include the following four programmes:

- JASPERS – Joint Assistance to Support Projects in European Regions to prepare projects supported by EU Structural and Cohesion Funds
- JEREMIE – Joint European Resources for Micro-to-Medium Enterprises in the regions to encourage more business start-ups and new ventures. Managed by the EIF
- JESSICA – Joint European Support for Sustainable Investment in City Areas for investment in sustainable urban development
- JASMINE – Joint Action to Support Micro-finance Institutions in Europe. Still on the drawing board. Managed by the EIF

Equity Finance

Equity funds invest in projects and companies such as equipment manufacturers, project developers and ESCOs, independent power producers and energy utilities. Typically these funds are set up to invest equity in private transactions (i.e., in companies that are not listed on public stock exchanges), termed private equity⁴⁶.

Companies usually seek equity to start up or grow their businesses, activities that can seldom be bank financed. For projects, equity is generally needed to increase the level of investment to a level that meets lender debt-to-equity requirements. More equity means a lower risk of loan default. Compared to project loan facilities, equity funds assume significantly higher risks by assuming an ownership stake and taking a subordinated position in profit distribution.

In Ireland, Novus Modus is an example of private equity investment. They provide capital, support and knowledge to companies, projects and management teams in the clean energy and energy efficiency sectors. Currently, Novus Modus is the investment adviser to ESB Novus Modus, a €200m investment fund established by ESB. ESB are the sole investors in the fund and provide Novus Modus with support and know-how.

⁴⁶ UNEP (2008), *Public Finance Mechanisms to Mobilise Investment in Climate Change and Mitigation*.

Project Finance

Project Finance involves debt provided by banks to distinct, single-purpose companies, whose energy sales for example are sometimes guaranteed by power purchase agreements (PPA). This form of structured finance is often known as off-balance sheet or non-recourse finance since the financiers rely mostly on the certainty of project cash flows to pay back the loan rather than the creditworthiness of the project sponsors. Such a type of finance as this is most practical for mid to larger scale projects⁴⁷.

One of the key issues for project financiers is that the project developer has in place a fuel supply and off-take contract to reduce market risk. Policy mechanisms have an important role to play in reducing the risk profile of such projects through providing the right type of incentives. Banks generally look to have a steady stream of large projects in order to justify the time spent on due diligence and other procedures.

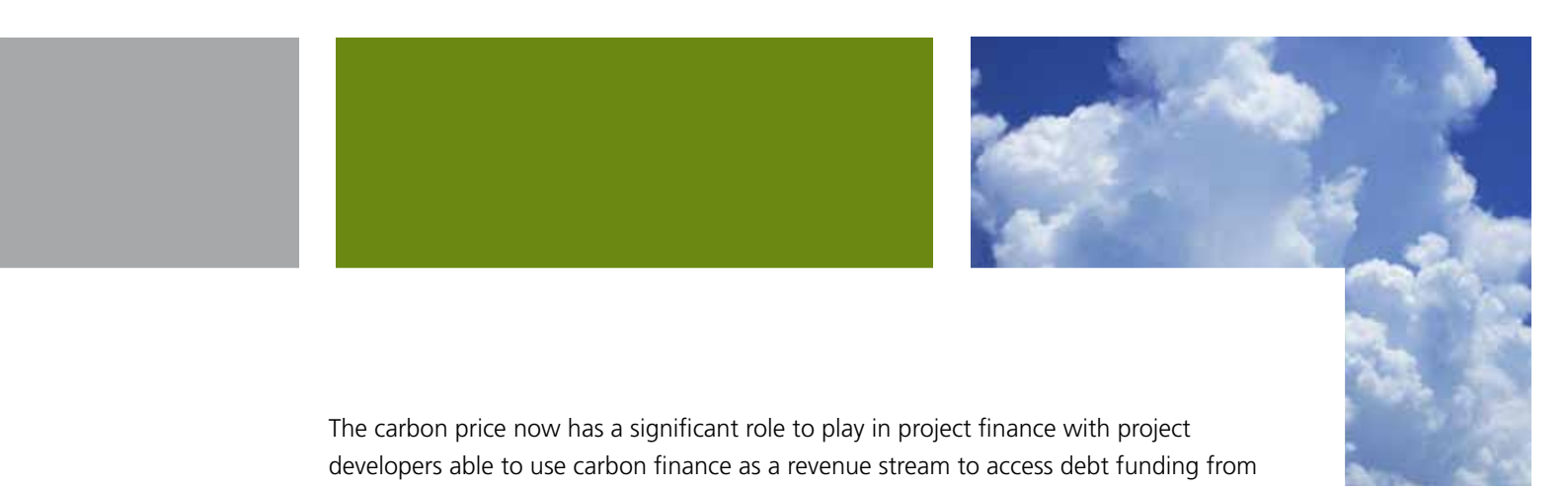
Due to the poor capital liquidity at present, international banks are more reluctant to finance such projects in Ireland with the result that this places greater dependency on Irish banks. Bank of Ireland currently has a €4bn project finance book of which €1bn is invested in waste, water and renewable energy projects. Additionally, the bank has now established a dedicated €100m fund for investing in renewable energy projects which was launched in February 2009. Further initiatives such as these would greatly assist project developers now faced with a situation where it has become increasingly difficult to access finance for their projects.

Carbon Finance

Carbon finance is a new branch of environmental finance and is generally applied to investments in greenhouse gas emission reduction projects and the creation of financial instruments that are tradable on the carbon market. The main driving forces behind the carbon market have been the Kyoto Protocol and the EU Emissions Trading Scheme (EU ETS). Both of these institutional frameworks have created a demand for emission reduction credits generated by projects that can be used for compliance purposes with mitigation targets. The Kyoto Protocol allows for Certified Emission Reductions (CERs) created by eligible projects under the Clean Development Mechanism and Emission Reductions Units (ERUs) created by eligible projects under the Joint Implementation mechanism to be used toward meeting national emission reduction targets. The EU ETS allows for EU Allowances (EUAs) and Kyoto units to be used for installations to meet their reduction targets under the scheme.

The result has been that for the first time a price has been established for carbon that provides a signal to companies that there is a cost attached to environmental pollution. This in turn should incentivise businesses to move to cleaner forms of production and provide a level playing field between conventional fossil fuel based energy production and renewable energy providers.

47 UNEP (2005), *Public Finance Mechanisms to Catalyze Sustainable Energy Sector Growth*.



The carbon price now has a significant role to play in project finance with project developers able to use carbon finance as a revenue stream to access debt funding from lending institutions. Many government agencies such as the Carbon Trust in the UK are also using the carbon price as justification for many of their schemes. For Ireland, the Government should examine closely the possibility for setting up a domestic carbon offsetting scheme that extends the carbon price and asset into the non-trading sectors of the economy such as in transport or agriculture. Government itself should also be factoring in the price of carbon in the appraisal of all publicly financed capital projects.

Asset-Backed Finance

Asset-backed finance is often described as “partnership finance through the sharing of risk and reward.” It usually is implemented within the structure of a Limited Liability Partnership (LLP), offering a hybrid form of community-enterprise financing, which brings the stakeholders into one partnership. It is fundamentally different from the familiar ‘deficit-based’ finance, meaning credit or ‘time to pay’ which arises in the context of a transaction between buyer and seller with delayed payment (i.e. ‘trade credit’); or a loan created by a ‘credit institution’ such as a bank or building society.

Despite the name, an LLP is not legally a partnership but like a company is in fact a corporate body with continuing legal existence independent of its members. Also like a limited company, an LLP has the benefit of limitation of liability, so that members cannot lose more than they invest. In taxation terms, an LLP is ‘tax transparent’ – in other words it is not taxed in its own right, but revenues pass straight through it to the members who are then taxed individually. Crucially, in an LLP it is possible for other stakeholders beyond the investors to be members. This quality of openness combined with infinite flexibility (since the LLP member agreement is not prescribed and need not even be in writing) may mean that an LLP is an optimal vehicle for investment allowing the problems of existing legal vehicles to be transcended.

Proportional shares in such asset-owning LLP’s constitute an entirely new asset class not dissimilar to units in a unit trust, but simpler, tax transparent, and arguably optimal in the way that stakeholders’ interests are aligned. The possibilities of ‘asset-based finance’ as a technique are not limited to the private sector. There is no reason why public assets – such as new schools and hospitals – should not be financed by pension investors interested in a secure index-linked revenue stream using this technique.

Box 2: Limited Liability Partnership Example

The community of Clare Island wishes to acquire 4 second-hand 250 kiloWatt wind turbines at a total cost installed of €400,000. The wind is such that the turbines will each produce an average of 600 MegaWatt/hours of electricity each year, so that over ten years the four turbines will generate in total 24,000 MegaWatts/hours.

At a sale price of €50.00 per MW/Hour it is necessary to sell 8,000 MW/hrs (or 33% of production) to raise the necessary €400,000 from investors. So a total of 16,000 MW/hrs or 66% of production remains with the community of Clare Island from which a developer/operator receives 16% in return for managing and operating the installation.

And 50% of energy produced is available to the community as an 'energy dividend'. They agree to distribute 20% of this to retired community members and the balance equally to all, thereby reducing their bills.

Venture Capital

The main private equity investment option for technology innovation is venture capital (VC). The investment typically carries a high level of risk, but also provides an above-average return on investment due to the company's growth and success potential. Venture capital investors obtain equity shares in the start-up company and generally play a significant role in the management and technical aspects of the company, including obtaining a seat on the board. VC has been a driver for technology start-ups in many innovation sectors. VC investments in technology innovation must meet investment exit expectations. Without clear exit paths, typically through re-sale or initial public offerings (IPOs), VC investors cannot easily commit to the deal, even when they are convinced of the investment potential⁴⁸.

Governments' understanding of the role of venture capital as a market-growth catalyst in the development of the smart green economy is important. Government institutions need to support efforts that increasingly engage private investment in sustainable, resource efficient ventures. Some government agencies have been experimenting with venture capital mechanisms as part of their overall industrial and economic development policy aimed at turning promising research into new products and services. A new innovative example is the capitalisation of venture funds with public resources leveraged by energy taxes, auctioning revenues or departmental budgets earmarked for the GreenTech sector. Publicly driven venture capital funds have emerged in the United States, Australia and the UK.

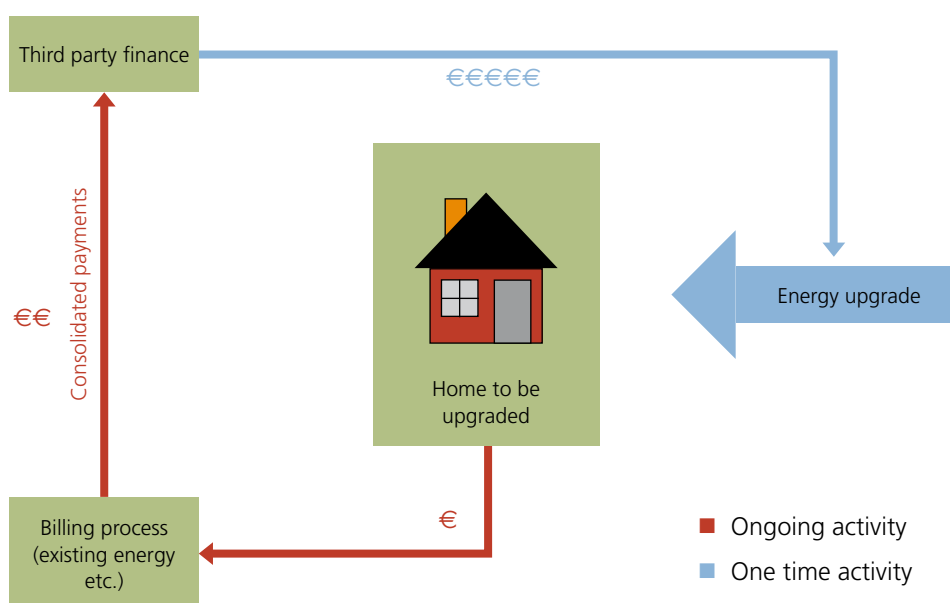
48 UNEP (2005), *Public Finance Mechanisms to Catalyze Sustainable Energy Sector Growth*.

The Irish VC market is currently worth around €1bn with €242m of new funding coming in 2008. Most of the investments to date in technology have been in the internet, mobile, communications, software and life sciences area. Irish VC's are only at an early stage of involvement in green and clean technologies. One of the main reasons for this is that these technologies are not a short-term play and VCs need to apply a longer time horizon to such investments. Due to the different nature of these investments there is a case for establishing a dedicated Irish GreenTech VC fund.

Innovative Mechanisms

The implementation of a 'pay as you save' type scheme in Ireland (see Figure 7) is one way to reduce exchequer costs while continuing to improve the energy efficiency of the national housing stock. The scheme is predicated on the concept of third party financing the upfront capital costs repaid via a charge on the property rather than the individual. This enables the costs to be spread over a sufficient period so that repayments are less than energy cost savings. The third party financing could come from a financial institution such as a government owned bank or instead from a semi-state energy utility such as ESB or Bord Gais. The savings on energy bills, a 'standing charge' is then used to repay the loan each month until the original lump sum (plus some interest) has been paid off. The scheme could be further developed by relating stamp duty and/or property tax to home energy performance. The main benefits of the scheme are that it overcomes two of the biggest hurdles to energy efficiency improvements – namely the upfront capital costs and principal-agent problems between landlord and tenant.

Figure 7: 'Pay as you save' scheme



Source: Adapted from UK SDC (2009)

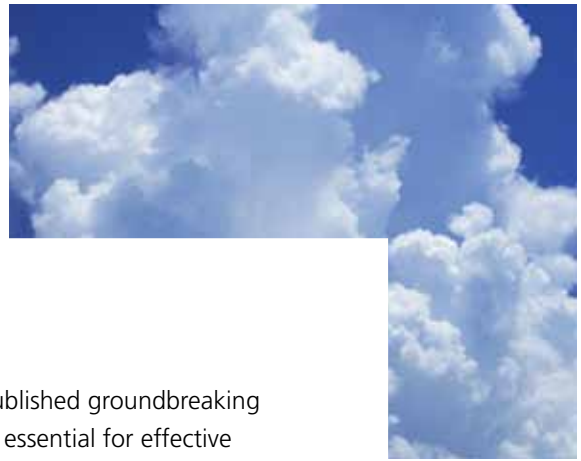
Other innovative mechanisms that should be considered for Ireland include a green SSIA type saving scheme along with green mortgages and car loans. Green SSIA could be a saving product similar in nature to the original SSIA scheme but this time mandating the banks to ring-fence the funds for environmental projects with strong sustainability credentials. Green mortgages are already being offered by some financial institutions and offer more substantial loans to homeowners who undertake energy efficiency improvements in their home. Such a product could be tied in with the Building Energy Rating scheme which requires homeowners and landlords to obtain an energy rating certificate. In Ireland, Permanent TSB provides discounted green loans to individuals purchasing qualifying energy efficiency equipment or renewable energy systems.

Pension Funds

A further financial vehicle for supporting the Green New Deal lies in the potential for mobilising the capital entrusted in pension funds to finance the investment required for environmental measures. These pension funds are governed by the obligation of fiduciary duty to pursue the best interests of their members. But two pressures are forcing pension funds to re-evaluate this duty. The first is the tightening regulation on pension fund disclosure and valuation across the Western world, which is prompting pension funds to more clearly match their liabilities (in terms of making out future payments to their members) with their mix of underlying assets. One recent study from a European investment bank estimated that tightening rules in the UK, the USA, France, Germany and the Netherlands would shift pension assets out of risky assets, such as equities, into relatively risk-free, long-term bonds to the tune of \$2,000 billion.

The second pressure is that of climate change. Along with leading sustainable investors, many leading pension funds – such as ABP in the Netherlands, CALPERs in the USA and USS in the UK – have been at the forefront of efforts to encourage the investment community to acknowledge the systemic threat posed by climate change to their ability to pay out future pensions. As universal investors, pension funds deploy their assets across the market. This means their returns are an output of the wider economy. With climate change threatening to reduce global economic output by as much as 20%, according to the *Stern Review*, pension funds face a further threat to their financial viability.

So far, leading pension funds have supported voluntary initiatives, such as the Carbon Disclosure Project, to raise awareness in the marketplace. Along with the UN Principles for Responsible Investment, such initiatives have served to drive up standards across a range of environmental and social issues. A number of institutions have also dedicated portions of their assets to specialist clean-energy funds – invested in both private and public equity.



The Institutional Investors Group on Climate Change has published groundbreaking research showing that incorporating climate change is now essential for effective investment strategies. But no pension fund has yet digested the full implications of the 2007 climate consensus – that emissions need to be at least halved by 2050, with upwards of 80% cuts in the industrialised world. The implications are clear: avoiding catastrophic climate change will require an unprecedented shift in investment capital by pension funds and other holders of long-term assets.

These twin challenges converge on a common solution. Pension funds have a rising demand for relatively risk-free assets to match their liabilities in ways that also avoid the severe threat of climate disruption and put their portfolios on the right side of the low-carbon transition. The solution lies in the investment of pension funds in a new generation of Green New Deal-type ‘climate or green bonds’ raised by national government and international financial institutions.

6.3 Institutional Framework

If the financing mechanisms listed above are to be effective in leveraging capital for a resource efficient economy then it is crucial that also the right institutional framework be put in place. This can provide the platform and serve as a suitable investment vehicle for delivering and driving forward a Green New Deal.

In many countries, consensus is emerging around the need to create specialised facilities geared toward investments in the infrastructure and technologies required for a sustainable future. The American Clean Energy and Security Act (ACES), the mainstay of Obama’s climate change strategy, proposes the establishment of a Clean Energy Bank for the U.S. (see Box 3). This institution would be housed within the Department of Energy and provide finance for clean energy and energy efficiency technologies.

Box 3: Clean Energy Bank

Momentum is building in certain countries for the need to establish a Green Bank in order to finance the transition to a resource efficient economy. In the U.S. a group called Coalition for the Green Bank (CGB) has been set-up and is dedicated to the stimulus of green energy assets for clean and sustainable energy and jobs. Policy institutes such as the Center for American Progress have also identified such a bank as having a critical role to play in an integrated strategy for broad-based economic growth and prosperity⁴⁹.

The American Clean Energy and Security Act 2009, also known as the Waxman-Markey Bill, proposes to reduce US carbon emissions by over 80 per cent below 2005 levels. The most prominent feature of the Bill, still yet to be approved by Congress, is the implementation of a federal cap-and-trade system. However, the Bill also contains details that would see the establishment of a Clean Energy Bank for the U.S. Referred to as the Clean Energy Deployment Administration (CEDA) it would be housed within the Department of Energy and provide finance for clean energy and energy efficiency technologies.

Due to the recapitalisation of Irish banks the Government now has an unprecedented opportunity to direct the financial community in Ireland to support Green New Deal type activities. To some extent this has already happened with the establishment of the €100m Bank of Ireland renewable energy fund providing one such example. However, this needs to take place on a much larger scale if it is to have any significant impact.

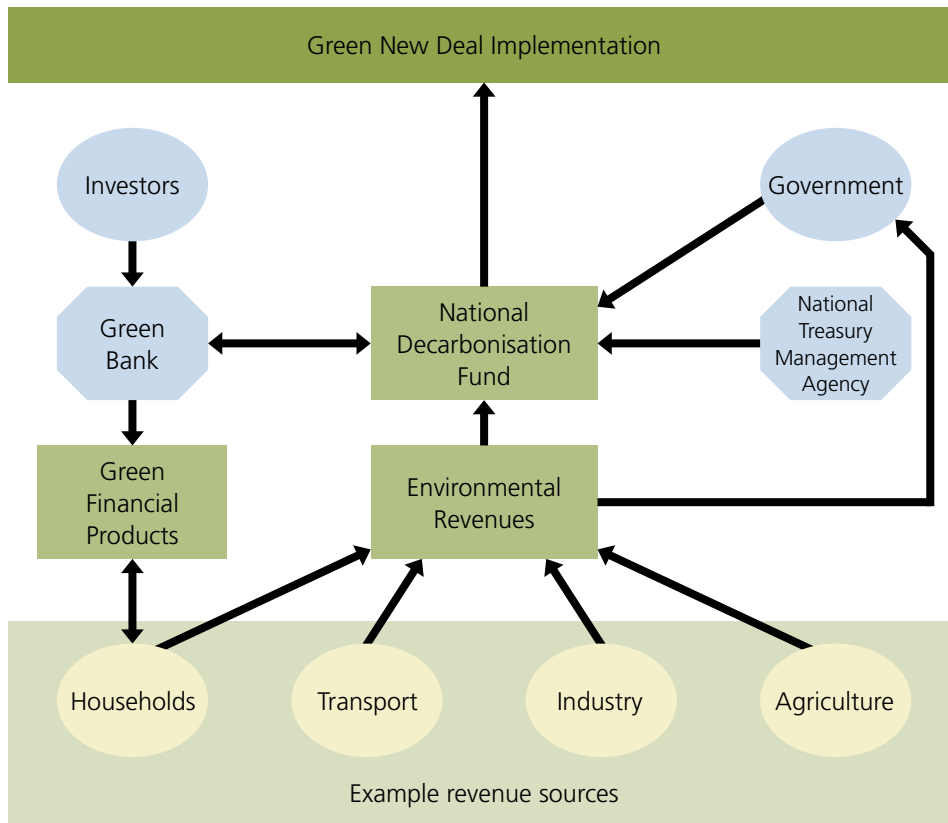
On this basis, Comhar SDC proposes the establishment of a National Decarbonisation Fund⁵⁰ (NDF) for Ireland to be managed by the National Treasury Management Agency (see Figure 8). The NDF should be funded through environmental revenues raised from climate taxes, auctioning of ETS allowances and the issuance of government backed green bonds. The Fund's investment activities should be targeted at climate change related measures and offer good financial returns.

Additionally, the state controlled Anglo Irish Bank should be reconfigured as a Green Bank and offer innovative financial products such as green mortgages, green car loans and green SSIA saving accounts. These would provide loans at favourable lending rates and provide a one stop shop for environmental finance. Rationalisation and coordination of state agencies providing finance in this area should also be considered to ensure there is no duplication of resources and to reduce overall levels of bureaucracy.

49 Center for American Progress (2009), *The Green Bank – Financing the Transition to a Low-Carbon Economy Requires Targeted Financing to Encourage Private-Sector Participation*.

50 The concept of a National Decarbonisation Fund for Ireland was first put forward by Grian in *Recommendations on the Proposal for a Carbon Tax in Ireland (2003)*.

Figure 8: Green New Deal Financing Framework for Ireland



6.4 Prioritisation of Financing Mechanisms

The above analysis indicates the vast range of financing options both public and private that are relevant to the funding of Green New Deal activities. As each instrument addresses different aspects of the finance spectrum it is critical that the right framework be applied that bridges the gaps across the many varied stages of the market development process.

Although each finance mechanism has a key role to play, Comhar SDC has attempted to provide further guidance to policymakers by prioritising those financing instruments that need to be mobilised most urgently in order to support the Green New Deal.

Comhar SDC’s multi-stakeholder workshop on the Financing of the Green New Deal identified the most effective instruments to be implemented as soon as possible are:

- Fiscal policy (carbon tax, tax reliefs)
- Green bonds and pensions
- Institutional arrangements (National Decarbonisation Fund and Green Bank)

7. Performance Indicators

7.1 Background

In order to establish the impact of any Green New Deal it is necessary to identify a set of performance indicators that can be used to set the baseline and measure progress in the priority areas of the Green New Deal. Building Ireland's Smart Economy highlighted the need to integrate the environment into measures of economic performance reflecting the shortcomings of macroeconomic indicators such as GDP which is measure of mainly market production but over time has become established as a measure of economic well-being. The Central Statistics Office (CSO) first published an initial set of national economic and social progress indicators in 2003 however, with the exception of the 'Measuring Ireland's Progress' series of reports there has been little progress in the development and application of a indicator set that measures sustainable development in Ireland.

Comhar SDC has previously commissioned research projects identifying, evaluating and recommending both national and sub-national indicator sets. Comhar SDC is currently carrying out research developing an integrated sustainable development indicator (SDI) set for Ireland. It is intended to maximise synergy and ensure coherence amongst Comhar SDC's recommendations by aligning the performance indicators for a Green New Deal with the proposed SDI set where relevant.

Building Ireland's Smart Economy identified four types of interdependent capital that drive economic and social progress namely:

- Human or knowledge capital – the skills, knowledge, ingenuity and creativity of people
- Physical capital – the stock of infrastructure that is used to produce goods and services e.g. machinery, buildings, transport and communications networks
- Natural or environmental capital – naturally-provided assets and the quality of the surrounding environment within which people live and work
- Social capital – the networks, connections, mutual trust and shared values and behaviours of the population

In addition to these, there is also financial capital like stocks, bonds and currency deposits. Sustainable development is development that ensures that the stocks of human, physical, natural and social capital are conserved as they are the assets on which current and future development relies.

7.2 Green New Deal Performance Indicators

A set of performance indicators for a Green New Deal will be a combination of measurements of these important assets and indicators linked to policy recommendations for each of the priority areas of the Green New Deal. In this way the set of performance indicators will be able to measure the impact of the Green New Deal in the short term and place these in the wider context of sustainable development.

An indicative set of performance indicators for each of the priority areas is shown in Table 10. These would be coupled with indicators on the resource efficiency and intensity of the economy.

Table 10: Indicative Performance Indicators

PRIORITY AREAS		PERFORMANCE INDICATORS
1	Retrofit existing housing stock	<ul style="list-style-type: none"> ■ GHG emissions from the residential sector ■ Households in fuel poverty
2	Scale up renewable energy	<ul style="list-style-type: none"> ■ Share of electricity from renewable energy ■ Combined heat and power generation ■ Final energy consumption from renewable sources
3	Transform national grid	<ul style="list-style-type: none"> ■ Dwellings with smart meters
4	Sustainable mobility	<ul style="list-style-type: none"> ■ Car share of inland passenger transport ■ Freight share of inland passenger transport ■ Emissions of air pollutants from transport ■ Energy consumption by transport mode
5	Public sector investments	<ul style="list-style-type: none"> ■ R&D expenditure ■ % green public procurement ■ Patent applications ■ Investment to GDP ratio
6	Skills and training	<ul style="list-style-type: none"> ■ Unemployment rate ■ Total at-persistent-risk-of-poverty rate ■ Employment by economic sector
7	Green infrastructure	<ul style="list-style-type: none"> ■ Afforestation rates ■ Designated areas ■ Built up areas ■ Population connected to waste water treatment services
	Resource efficiency of economy	<ul style="list-style-type: none"> ■ GDP/Direct Material Input and GDP/Direct Material Consumption
	Resource productivity of economy	<ul style="list-style-type: none"> ■ Direct Material Input/GDP and Direct Material Consumption/GDP

8. Conclusions and Recommendations

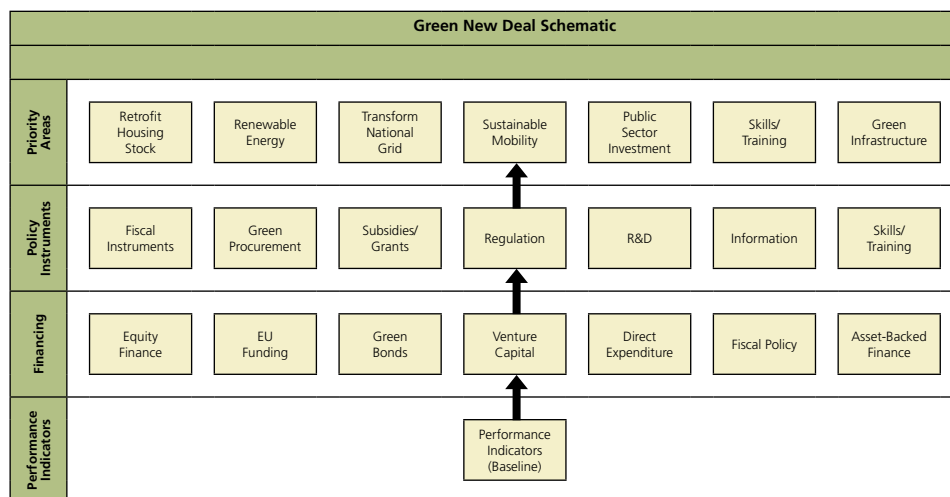
8.1 Introduction

The Irish Government has already identified the Green New Deal as a key component in its plan for sustainable economic recovery. Only recently the Tánaiste commented that ‘a smart economy is a green economy’ and that Ireland needed to protect itself from ‘the inevitable rise in the cost of energy ‘inputs’ and the pollution ‘outputs’ arising from our economic activity’⁵¹.

To realise a Green New Deal for Ireland will require not only strong political commitment but also fundamentally realigning policy with sustainable development goals at all levels of society. This involves putting in place a number of mutually reinforcing delivery mechanisms that will direct the economy on to a more sustainable path. Figure 9 demonstrates schematically how this is to be achieved. Essentially, there are three critical elements to this process:

1. Clearly identifying what should be the ‘priority areas’ for Ireland
2. Implementing cost-effective policy instruments to move us in this direction
3. Providing an integrated and dedicated financing framework

Figure 9: Delivery Framework for a Green New Deal



51 Department of Enterprise, Trade and Employment, *Press Release* (26th June, 2009).

This work has demonstrated how a Green New Deal in Ireland could be implemented. It makes the case for a number of priority areas that Comhar SDC believes are vital to a sustainable future for this country. Policy instruments that have a key role to play in unlocking the door have been identified along with appropriate financing mechanisms. Table 11 provides a summary of the key priority areas and identifies some of the most important policy levers and financing mechanisms in each case.

Table 11: Green New Deal Matrix

PRIORITY AREAS		MAKING IT HAPPEN	FINANCING INSTRUMENTS
1	Retrofit existing housing stock	Skills/training Fiscal measures Regulation	'Pay as you save' Green bonds Fiscal revenues
2	Renewable energy	Green procurement Regulation R&D Subsidy	Project finance Venture capital Equity finance Asset-backed finance
3	Transform national grid	Regulation Skills/training R&D	Green bonds Auctioning revenue Direct expenditure
4	Sustainable mobility	Regulation Fiscal measures Information	Fiscal revenues Green bonds Auctioning revenue
5	Public sector investments	Green procurement Regulation Skills/training	Green bonds EU Funding Fiscal revenues
6	Skills and training	Information Subsidies/Grants Regulation	Green bonds Direct expenditure Fiscal revenues
7	Green infrastructure	Regulation Subsidy Skills/training	Green bonds Direct expenditure

8.2 Summary Recommendations

Policy:

The Irish Government should implement a 'Green New Deal' for Ireland. Such a deal should encompass the following objectives:

- Revive the Irish economy and create job opportunities through building an innovative, low-carbon and resource efficient society
- Protect ecosystems and biodiversity while reducing fossil fuel dependency.
- Provide for greater social inclusion through stimulating new green jobs, reducing fuel poverty and delivering better access to transport
- Build ecological resilience and capacity to adapt to climate change

As the investment decisions made in the next ten years will play a critical role in defining our long-term emissions trajectory, the Government should ensure that all future infrastructure projects fully account for the cost of carbon in their capital appraisal. This is consistent with the 'Smart Economy' thesis and will ensure we do not lock ourselves in to a high carbon and resource inefficient infrastructure for decades to come, jeopardising our climate change commitments, energy security and economic prosperity. At the same time, potential adaptation impacts need to be integrated into decision-making at both a national and local level.

The Government should be prepared to commit up to 2% of GDP to green stimulus measures over the next two to three years. This is consistent with the levels recommended by the U.N. and Sir Nicholas Stern and will ensure that Ireland is positioned at the forefront of global policy developments in this field.

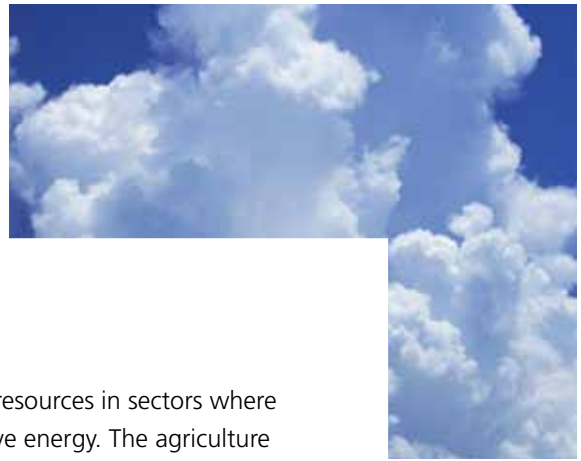
Priority Areas:

The Irish Government should focus on the following seven priority areas in terms of a Green New Deal for Ireland:

1. Improving the energy efficiency of existing housing stock
2. Renewable Energy
3. Transforming the National Grid
4. Delivering Sustainable Mobility
5. Public Sector Investments
6. Skills and Training
7. Green Infrastructure

Bottlenecks will need to be identified for these priority areas, particularly in the building sector. Well-targeted policy instruments and interventions should be used to overcome existing barriers and release current capacity. It is also important to ensure that schemes and incentives already in place deliver to their full potential. One option would be for the Government to establish a task force of key stakeholders to identify how best to advance a national programme of upgrading the existing building stock while reducing unemployment.

For Ireland, as in many other countries, there is a clear need to bridge the gap in terms of linking R&D and emerging technologies to commercialization. The country should be looking to develop an export market in green technologies and use our traditional skills base as the foundation for making the transition. The IDA should also have a focus in attracting foreign direct investment to Ireland in this area.



Priority should be given to maximising the potential of our resources in sectors where we already have inherent advantages such as wind and wave energy. The agriculture resource in Ireland should be used towards supporting the implementation of a Green New Deal and at the same time enhancing rural development. This includes investing in such activities as afforestation, renewable energy production and environmental protection. Agri-food and tourism sectors are important for the economy and offer significant potential for green jobs.

More work is required to evaluate the precise impact potential from green stimulus measures. This includes parameters such as job creation, carbon reductions and energy savings. Comhar SDC will commission research identifying the impact of our recommended green stimulus measures to provide the evidence base to support the proposed Green New Deal.

Policy Instruments:

In order to move the idea of a Green New Deal for Ireland from concept to reality, concrete policy instruments are required that can unlock the door and mobilise the transformation to a more sustainable and resource efficient society. Some of the most effective policy instruments that should be prioritised and mobilised include:

- Green Procurement
- Tax and subsidy reform
- Skills and training
- R&D

Skills and training should be targeted at different groups such as the unemployed, employed and third level sector and should be linked to incentives for industry to engage in schemes. Proposals on the potential role skills and training can play in delivering the Green New Deal objectives in each of the priority areas should be developed.

A gradual shift of the tax base away from taxing what we want more of, such as investment and labour, towards taxing what we want less of, such as pollution, would also help contribute to a resource efficient and smart green economy. A tax base that derives a greater proportion of revenues from consumption and less from labour will also provide a wider and expanding tax-base than present, thereby contributing to the response needed to offset the tax implications of a declining workforce and an ageing society. In conjunction, existing subsidy schemes in Ireland should also be aligned with sustainable development goals with fossil fuel subsidies being phased out.

Finance

The use of public and private finance mechanisms have a pivotal role to play in providing the necessary funding to make the transition to a resource efficient economy. Some of the financing options with the most potential and that should be considered for implementation include:

- Fiscal policy to provide incentives for green tech and low impact products and services
- Green bonds and pensions as an investment vehicle for Green New Deal programmes
- Setting up an effective financial institutional framework to provide the foundation for focused investment in the Green New Deal. This should take the form of:
 - Establishment of a National Decarbonisation Fund for Ireland
 - Formation of a Green Bank
 - Creation of a green venture capital fund

The National Decarbonisation Fund (NDF) should be managed by the National Treasury Management Agency and funded through environmental revenues raised from climate taxes, auctioning of allowances under the EU's Emission Trading Scheme post 2012 and the issuance of government backed green bonds. The Fund's investment activities should be targeted at climate change related measures and offer good financial returns.

The state controlled Anglo Irish Bank should be reconfigured as a Green Bank and offer innovative financial products such as green mortgages, green loans and green SSIA saving accounts. These would provide loans at favourable lending rates and provide a one stop shop for environmental finance. Rationalisation and coordination of state agencies providing finance in this area should also be considered to ensure there is no duplication of resources and to reduce overall levels of bureaucracy.

Marketing and Communications

Stakeholder support will be required to deliver a Green New Deal. A plan should be developed to advance the Green New Deal in cooperation with colleagues in Northern Ireland and Great Britain so as to build momentum and consensus around the actions required. As part of this process, a dedicated section of the Comhar SDC website will be developed to support this process and act as a resource on Green New Deal initiatives in Ireland.



8.3 Conclusions

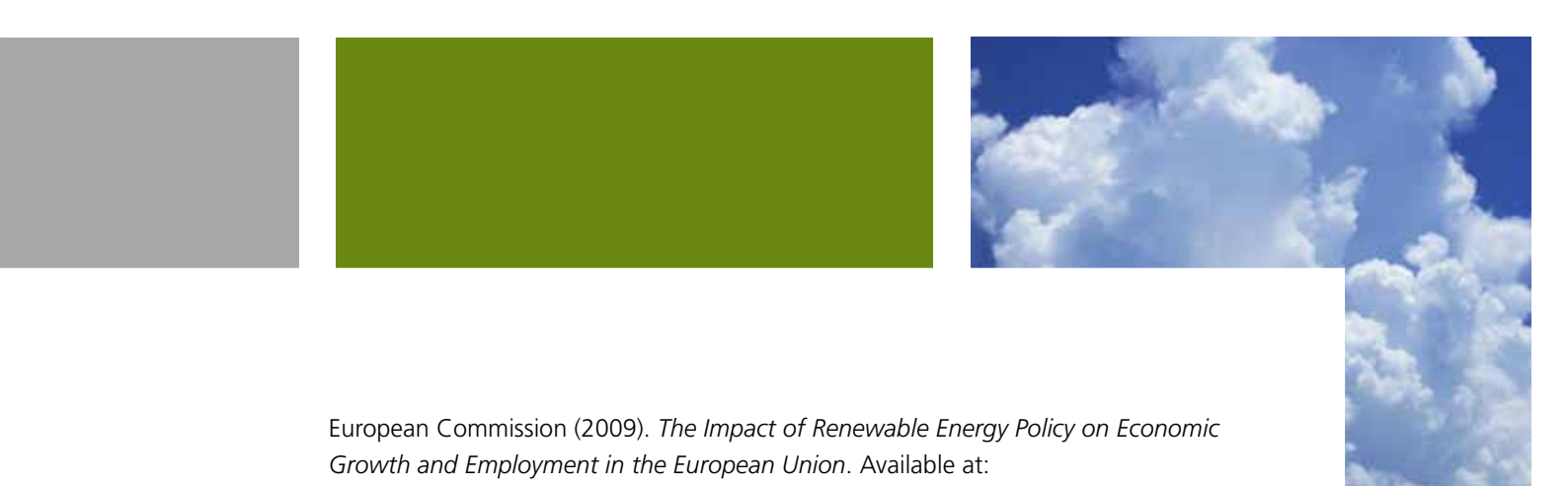
Ireland faces strong challenges over the next few years relating to the sustainability of the economy, our natural environment, and the well-being of society. Failure to address these challenges will put at risk our ability to prosper both as a society and economy in the future. The current global financial crisis has only underlined our need to put sustainability at the heart of our economic recovery.

On this basis, Comhar SDC is advocating a Green New Deal for Ireland. Such a deal proposes to deliver a programme that not only addresses the impact of the economic recession but also tackles environmental and social problems, thereby leading to improvements in overall well-being of the population.

Comhar SDC believes that a Green New Deal for Ireland should be strongly aligned with overarching sustainable development principles. Unless this link is explicitly made then any recovery will only be illusory in the sense that it will return us to the same unsustainable growth path as before. Without this broader vision, reviving the economy will fail to address other systemic risks posed by climate change, peak oil, ecosystem degradation and social inequity.

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Appendix 1: Membership of Green New Deal Working Group

Frank Convery	Chairman, Comhar SDC
Eoin McLoughlin	Comhar SDC
Cathy Maguire	Comhar SDC
Noel Casserly	Comhar SDC
Niamh Kirwan	Comhar SDC
Pat Finnegan	Grian
Jonathan Healy	Forfás
Emer Dunne	Irish Creamery Milk Suppliers Association
David Korowicz	Feasta
Robert O'Shea	IBEC
Vincent O'Flaherty	NUI Galway

Appendix 2: Agenda and Attendees at Green New Deal Workshops

Green New Deal Workshop

Half-day workshop at Isaac's Hotel, 16th June, 2009

Final agenda

- 9.45 Coffee/Registration**
- 10.00 Welcome and Introduction**
Frank Convery, Chairman, Comhar SDC
- 10.15 Towards a Green New Deal for Republic of Ireland**
Eoin McLoughlin, Comhar SDC
- 10.30 Green New Deal for Northern Ireland**
John Woods, Friends of the Earth, Northern Ireland
- 10.45 Making Innovation Happen**
Paul Killeen, UCD Earth Systems Institute
- 11.00 Research and Innovation for the Green Economy**
Micheal Lehane, Environmental Protection Agency
- 11.15 Discussion**
- 11.30 Tea/Coffee Break**
- 11.45 World Café Session**
Session One – Priority Areas
Session Two – Making it Happen
Session Three – Financing Options
- 13.00 Rapporteur Session – Reports Back/Discussion**
- 13.30 Close followed by light lunch**

Workshop Participants

NAME	ORGANISATION
Aidan Kinch	DoEHLG
Bartley O'Connor	PriceWaterhouseCoopers
Hugh Campbell	PriceWaterhouseCoopers
Ronan MacNioclais	PriceWaterhouseCoopers
Eoin McLoughlin	Comhar SDC
Cathy Maguire	Comhar SDC
Noel Casserly	Comhar SDC
Frank Convery	Comhar SDC
Paschal Stephens	Comhar SDC
Fergal Naughton	Glendimplex
Frank Groome	EirGrid
Fred McDarby	Enterprise Ireland
Jessica Benson	Enterprise Ireland
Graham Clarke	ECO Unesco
Jim Kitchen	UK SDC N.I.
Jonathan Healy	Forfás
Joseph Curtin	IIEA
Mark Bennett	Dublin City Council
Micheal Lehane	EPA
Lisa Sheils	EPA
Pat Finnegan	Grian
Paul Killeen	UCD
Raymond Sexton	Tangible.ie
Robert O'Shea	IBEC
Therese Murphy	SEI
Tom Fitzgerald	Department of Finance
Tony Owens	CleanTech Network
Frank Corcoran	An Taisce
Duncan Stewart	Earth Horizon Productions
Emer Dunne	Irish Creamery Milk Suppliers Association
Davie Philip	Cultivate
Walter Bruton	ERM

Total Attendees: 32

Financing the Green New Deal

Half-day workshop at Comhar SDC, 17th July, 2009

10.00 Chairman's welcome

Peter Brennan, Managing Director, EPS Consulting Ltd

10.10 Financing the Green New Deal

Eoin McLoughlin, Comhar SDC

10.25 The role of venture capital in financing a green economy

Alex Hobbs, Dublin Business Innovation Centre, (AIB Seed Capital Fund)

10.40 Project financing the low carbon economy

Donal Murphy, Global Project Finance Bank of Ireland

10.55 Tax based measures for a Green New Deal

Hugh Campbell, PriceWaterhouseCoopers

11.10 Discussion

11.30 Coffee

11.45 CleanTech funding supports

Gabrielle Garland, Enterprise Ireland

12.00 Carbon finance and domestic offsetting scheme

Paul Harris, Bank of Ireland Global Markets

12.15 Asset-backed finance for risk management

David Korowicz, FEASTA

12.30 Discussion

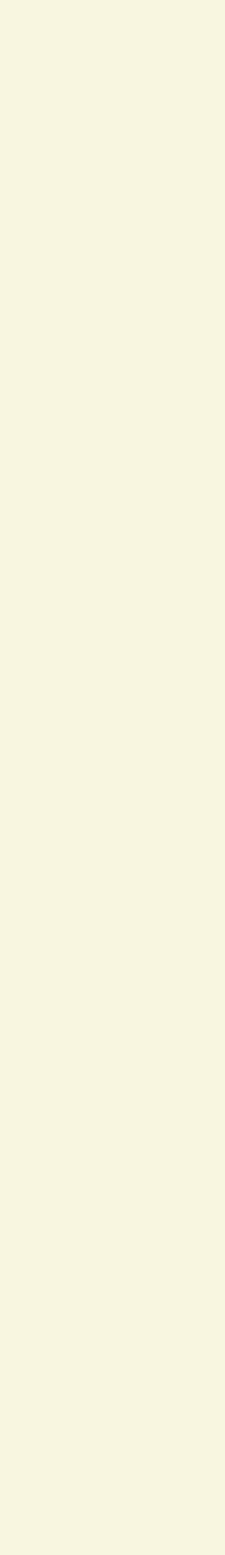
13.00 Close followed by light lunch



Workshop Participants

NAME	ORGANISATION
Peter Brennan	EPS Consulting Ltd
Bartley O'Connor	PriceWaterhouseCoopers
Hugh Campbell	PriceWaterhouseCoopers
Valerie Mulrooney	PriceWaterhouseCoopers
Eoin McLoughlin	Comhar SDC
Cathy Maguire	Comhar SDC
Noel Casserly	Comhar SDC
Frank Convery	Comhar SDC
Niamh Kirwan	Comhar SDC
Gabrielle Garland	Enterprise Ireland
Niamh Roddy	Enterprise Ireland
Eoghan O'Briain	Forfás
Paul Harris	Bank of Ireland
Donal Murphy	Bank of Ireland
Louise Fennelly	Bank of Ireland
Pat Finnegan	Grian
Alex Hobbs	Dublin Business Innovation Centre
David Korowicz	FEASTA
Neil Walker	SEI
Matthew Kennedy	SEI
Peter Daly	CleanTech Network
Tony Owens	CleanTech Network
Tom Wall	ICTU
Mark Bennett	Dublin City Council

Total Attendees: 24





About Comhar Sustainable Development Council

Comhar Sustainable Development Council⁵² (Comhar SDC) was established in 1999 as the forum for national consultation and dialogue on all issues relating to sustainable development. Its terms of reference are to:

- Advance the national agenda for sustainable development
- Assist in devising suitable mechanisms for sustainable development
- Advise on the implementation of these mechanisms
- Contribute to the formation of a national consensus in these regards

Comhar SDC works in three-year cycles and began its fourth term in January 1st 2009 under the Chairmanship of Professor Frank Convery.

Comhar SDC is comprised of 25 council members who are drawn from five pillars: the state sector, the economic sector, environmental NGOs, social/community NGOs and the professional/academic sector. The broad representation allows Comhar SDC to arrive at informed and balanced conclusions.

Comhar SDC is supported by a full-time secretariat, which undertakes evidenced based policy analysis and research, and is based in the Irish Life Centre, Lower Abbey Street, Dublin 1. Comhar SDC publishes its reports, opinions, and other products, using a range of relevant means for their dissemination, including electronic media.

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⁵² Previously the National Sustainable Development Partnership; the name was changed in 2006.



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