Greening the Economy And Creating Sustainable Employment

Environmental Pillar
WORKING FOR A SUSTAINABLE FUTURE

Greening the Economy and Creating Sustainable Employment

Abstract

The Action Plan for Jobs 2012 includes a commitment to produce a Green Economy Plan during the third quarter of 2012.

This paper asserts that all policy oriented towards the creation of employment should be in the context of a Green Economy. It offers working definitions for a Green Economy, and for green jobs, placing both in the context of Ireland's move towards "Our Sustainable Future". It outlines policies which will contribute towards green job creation, as well as policies and actions in those sectors where there is great potential for the creation of green jobs. Specific green job proposals are described under these sectors.

The establishment of a Green Economy Plan requires a baseline assessment of what green jobs already exist, and a vision of where new ones can be created. It is proposed that this baseline be developed using the methodology developed by UNEP. It is asserted that the narrow understanding of what constitutes a Green Economy, as presented as an adjunct to the Action Plan for Jobs 2012, will greatly restrict the potential for the creation of long term sustainable jobs that provide multiple goods to society. Sectors, such as Nature Conservation, with proven employment potential are absent.

The case is made that all government decisions regarding capital spending, taxation, subsidies, and monetary policy should be subjected to a rigorous "employment impact assessment" in the context of developing a sustainable green economy, and in order to avoid destroying future job creation potentials. It is also argued that for the development of the Green Economy, cross-departmental solidarity in Government must be the order of the day, with the public good taking precedence over sectoral economic gains.

Environmental Pillar
WORKING FOR A SUSTAINABLE FUTURE

The Environmental Pillar was included as the fifth pillar of national Social Partnership in April 2009, and is made up of the 26 national environmental NGOs, acting together as one social partner alongside the Trade Unions, the Employers, the Farmers and the Community and Voluntary Pillars. Although the national arrangements of Social Partnership are in some disarray at present, the Environmental Pillar is actively working with the other social partners and with government at the national and local levels to promote the protection and enhancement of the environment. The primary message of the Pillar is that:

> The continuing success of human society and social systems depends fundamentally on the preservation of the overall productivity, health, and long term sustainability of the ecosystems and environmental services that underpin and supply many of the most basic components of human welfare such as healthy soils, clean water, and clean air.

Environmental Pillar members: An Taisce. Bat Conservation Ireland, BirdWatch Ireland. CELT - Centre for Ecological Living and Training. Coast Watch. Coomhola Salmon Trust. Crann. ECO UNESCO. Feasta. Forest Friends. Friends of the Earth. Global Action Plan Ireland, Gluaiseacht. Hedge Laying Association of Ireland. Irish Doctors Environment Association. Irish Natural Forestry Foundation. Irish Peatland Conservation Council. Irish Seal Sanctuary. Irish Seed Saver Association. Irish Whale and Dolphin Group. Irish Wildlife Trust. The Organic Centre. Sonairte. Sustainable Ireland Cooperative. VOICE. Zero Waste Alliance Ireland

This policy statement was developed using the Environmental Pillar processes but is not necessarily the policy of each member group in the pillar.

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Non-technical Summary

A green economy should be a driver of competitiveness, security of supply and sustainability. The Green Economy should incorporate the whole economy rather than be a niche or a subset.

This paper asserts that the creation of employment should be firmly rooted in the context of a Green Economy. It offers working definitions for a green economy, and for green jobs, placing both in the context of Ireland's move towards "Our Sustainable Future". It also outlines the cross-sectoral and sectoral areas where there is great potential for the creation of green jobs.

The UNEP definition of a Green Economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" should form the basis for the government's Green Economy Plan.

In this context, the plan should: seek to count, profile and retain the existing green jobs; provide mechanisms for greening existing jobs; develop a vision of where new green jobs can be created both in the short and long term; and ensure that jobs that are created do not damage the potential of the Green Economy to deliver sustainable green jobs in the future.

KEY MESSAGES

Fundamental Actions:

- Reframe the green economy in a wider context.
- Publish a plan for achieving a green economy in Ireland.
- Publish a profile assessment of existing green/brown/grey jobs and potential future green jobs in Ireland.
- Provide specific support for all components of green jobs in the stimulus package.
- Carry out an assessment that 'proofs' current policy positions and decision-making in the context of ensuring capacity to transition to a green economy.
- All government decisions especially those regarding capital spending, taxation, subsidies, and monetary policy should be subjected to a rigorous "employment impact assessment" in the context of the Green Economy.

Cross-sectoral actions

Taxation

A key element of a green economy is getting the incentives right. This means ensuring that both taxes and expenditure, including subsidies, incentivise sustainability and employment rather than dis-incentivising them.

- Site Value Tax
  Implement a property tax based on the value of all zoned residential land, extending it to all development land in replacement of commercial rates.
- Employment Impact Assessment of Property Tax Options
- Establish an administrative structure to analyse and develop proposals to shift taxation from production and labour to resource use and pollution.
- Maintain and increase fuel taxes

Subsidies

- Abolish PSO to peat fired electricity production
- Abolish Tax exemption of employee parking spaces
- Establish a task force to report on all other subsidies including those which operate by tax exemption.
- Abolish red diesel.

Monetary Policy

- Establish a think-tank to investigate mechanisms for moving away from debt based money and for developing local currencies

Reform of the Euro

- Engage with EU partners to reform the Euro and its governance so that it is capable of fulfilling its role in a sustainable economy.

Training

- Programmes to tackle youth unemployment should include a strong focus on the Green Economy, Environment, and Sustainable
- Development.Government should support innovation and creativity in the training methodologies alongside the more traditional training courses

Procurement

- Prioritise the proactive implementation of “Green Tenders – An Action Plan for Green Public Procurement.
- Adopt BS 8903 - Principles and Framework for Procuring Sustainably - for all public bodies and promote its adoption by the private sector.

Investment programmes

- Ensure that all major government investment programmes directed at job creation are based on an objective assessment of projects which could be included.
- Ensure that the assessment considers how many jobs are likely to be created by each of the measures, policies or projects being compared for inclusion.
- Ensure that the assessment also considers the impact of the projects on sustainability indicators including compliance with EU law and meeting national emissions targets.
- Ensure public health and knock-on benefits (reduced medical costs, better productivity/reduced absenteeism and better educational results) are included in the factors to be taken into account in deciding on expenditure and investment.
- Establish a fund to provide matching finance and support in making applications for drawing down a range of EU resources

Sustainability in the Private Sector

- Encourage the incorporation of sustainability considerations and analysis in private sector decision-making, such as new reporting requirements for limited liability companies.
- Encourage a step of Corporate Social Responsibility

Enforcement of Environmental Law

- Proper enforcement of environmental law especially in fishing, quarrying, energy industries, agribusiness and others is essential.
- Create 'Wildlife Crime Officers' managed through the EPA, NPWS and An Garda Síochána to reduce infringements of wildlife legislation, with state solicitors advised to secure fines that support environmental NGOs and the Wildlife Crime corp.

Employment

- Reduce the working week to alleviate unemployment and reduce consumption pressure and associated environmental impacts.

Innovation

- Establish a process of change in which all third level institutions become living laboratories for a Sustainable Ireland, for the Green Economy and as a driver for green job creation.

- Use the Green Way as a prototype to promote similar Cleantech clusters around the larger urban centres
- Create 'Wildlife Crime Officers' managed through the EPA, NPWS and AN Garda Síochána to reduce infringements of wildlife legislation, with state solicitors advised to secure fines that support environmental NGOs and the Wildlife Crime corp.

Cooperatives

- Update the legislation governing Cooperatives to give a level playing field for all enterprises

A Constitutional Right to a Clean and Healthy Environment

- Include the Right to a Clean and Healthy Environment in the Terms of Reference for the Constitutional Convention.

Sectoral Actions

Energy

- Push for higher targets for Green House Gas reductions in the EU.
- Develop and implement an effective Pay As You Save scheme.
- Restore the grants for thermal retrofit to their previous levels.
- Promote closed cycle local Biomass projects nationally
- Establish a ring-fenced tax on all fossil fuel exploitation to be used to drive the move to renewable energy production, efficiencies and home energy retrofits
- Pursue a cross-border harmonisation of rules applicable to solid fuels
- Invest in decentralised provision of innovative power supplies from a wide range of sources to ensure greater energy security and thriving local economies.
- Create a beneficial economic regime for the development of anaerobic digesters and increase the feed-in-tariffs in the current power purchase agreements to make it economically viable for electricity produced from anaerobic digesters to be sold onto the national grid.
- Develop two new HVDC interconnectors for the export of renewable power in public ownership with European financing.

Water

- Invest in wastewater treatment infrastructure sufficient to meet our EU law obligations and bring our waterways and water abstraction sources to good status.
- Stimulate the water conservation industry.

Transport

- Introduce measures to encourage Rail Freight.
- Invest in Rail Electrification
- Prioritise regulatory reform for the transport sector
- Develop a network of tourism-oriented high quality cycle routes to build on the success of the Great Western Greenway and similar routes throughout Europe
- Drop the new major road proposals and use the capital to support public transport and cycling investments.

Tourism

- Provide support for green tourism projects that enable local communities and businesses, including farmers to diversify and create more sustainable local economies
- Massively expand CE schemes and Tús scheme in order to benefit built and natural heritage and with follow on tourism benefits.
- Pump prime niche tourism with wildlife as a quality offering supporting local nature reserves as attractions for tourism with spin off for local communities.
- Legislate for a basic right to roam to open up Ireland for walking.

Nature Conservation

- Include conservation in economic stimulus packages as an important part of the Green Economy.
- Ensure R&D Funds for strategic collection of marine and terrestrial wildlife data. This will employ consultants in small to medium businesses and also help to inform sectoral decision-making in areas of further employment (wind energy, use of marine resources etc)
- Secure our natural capital through funding nature conservation work, 'accounting for nature' sooner rather than later in policy development and in decision-making as a matter of urgency and link this to performance indicators that go 'beyond GDP'
- Provide assistance to those interested in putting together LIFE+ projects.

Sustainable Agriculture

- Support the Greening of Pillar 1 of the CAP and increasing Pillar 2 to 50% of the CAP budget.
- Prioritise a national debate on the EU Bioeconomy Strategy
- Develop a wild food policy framework to support wild food sector.
- Develop a wool fibre insulation industry to meet Irish and UK demand for insulation as our housing stock is retrofitted.
- Support an accelerated move towards organic farming and organic horticulture.
- Support the development of specialist and niche horticulture

Tree Cover

- Set as a policy goal the achievement of the "long-term multifunctional and sustainable forestry and innovative forest sector that fulfils present and future social, economic and environmental needs, and supports forest-related livelihoods"
- Protect and promote the genetics of native woodlands.
- Develop forest biomass based enterprises in particular local energy supply.
- Develop wood-fibre insulation manufacturing to meet Irish and UK demand for insulation as our housing stock is retrofitted.
- Support agroforestry pilots

Marine

- Ensure access to fish resources to those who fish in the most socially and environmentally responsible ways and adhering to scientific advice – securing healthy fish stock and hence supporting fishing communities and associated jobs into the future.
- Redirect fuel subsidy to transition package on sustainable low-carbon fishing with labelling and marketing support on an all-island basis.
- Establish Marine Protected Areas in 20% of Irish Waters
- Adhere strictly to ICES scientific advice in this year's Fisheries Council negotiations to halt the overfishing of stocks.
- Highlight, disseminate and further develop the areas where Ireland is truly a leader in the Green Economy – e.g. Sea Bass
- Prioritise the green securement of our marine and coastal ecosystems and their services including the natural defences against climate change impacts.
- Halt the highest impact wild fisheries and aquaculture in and around Natura 2000 sites now
- Strengthen the research in the marine environment – not only in the welcome areas of green renewable energy etc. as flagged by government, but also in the inshore and coastal areas for both conservation and small scale multi use, where citizen science element empowers and informed coastal communities.

- Create green Jobs through the timely, innovative and participatory implementation of marine law: the Marine Directive being the most urgent legislation to address.
- Following the implementation of the above there would be a need for training to shift the process of reform up a gear.

Waste

- Develop closed loop policies for all materials streams, with labour intensive waste resource mining and recycling as a priority.
- Promote the development of anaerobic digestion of waste streams at community level to deliver combined heat and power and to recycle nutrients to the soils from whence they came
- Introduce deposit-and-refund schemes on all recyclable food and drinks containers
- Prioritise the implementation of the Food waste regulations of 2009 and to investigate the use of edible foods discarded as waste.

Leader Companies

- Include screening for environmental sustainability and job creation in the green economy in the pre-approval project evaluation by Leader Companies (Integrated Local development Companies).

1.0 Introduction

In addressing the creation of employment within a Green Economy it is firstly necessary to describe briefly the background to the concept of the Green Economy, to reach an understanding of what a Green Economy is, and then to see how it fits into the sustainable future for Ireland. An agreed understanding of what constitutes a Green Job is also important in assessing policies for creating employment. A vision for the development of our Green Economy, based on a clear profile of where we are now will be essential.

Given the necessity to create a viable and innovative Green Economy as part of *Our Sustainable Future* it is clear that the 2012 *Action Plan for Jobs*[1](APJ) needs to be reset in the context of this agreed strategic direction. Creating sustainable employment is a very important part of the Green Economy. At present the Green Economy is only considered in the APJ as a sub-sector. This is a serious error and will have long term consequences for the Irish economy, society and environment.

All proposals emerging from the 2012 *Action Plan for Jobs* (APJ) and future APJs must be assessed to ensure that:

- they contribute to the move to a low carbon Green Economy; and
- that they create both long and short-term jobs, and don't damage future employment possibilities by damaging the environmental resources that are fundamental to a sustainable society and economy.

Changing current patterns of growth, consumer habits, technology, and infrastructure is a long-term project and we will have to live with the consequences of past decisions for a long time. This "path dependency" is likely to intensify systemic environmental risks even if we were to get policy settings right relatively swiftly. Angel Gurria, OECD Secretary General (2011) [2]

Action needs to be taken now to start the unpicking of that path dependency, and that it needs to happen in a coordinated way across all aspects of our society-economy-environment matrix.

The process starts with the recognition that the continuing success of our society and social systems depends fundamentally on the preservation of the overall productivity, health and long term sustainability of the ecosystems[3] and ecosystem services[4] which underpin and supply the basic components of human welfare such as

1 http://www.djei.ie/publications/2012APJ.pdf para7.3

2 Angel Gurria, OECD Secretary General (2011) *Towards green growth - A summary for policy makers* http://www.oecd.org/greengrowth/48012345.pdf

3 An ecosystem is a community of living organisms (plants, animals and microbes) in conjunction with the non-living components of their environment (things like air, water and mineral soil), interacting as a system.

4 United Nations 2005 Millennium Ecosystem Assessment (MEA), a four-year study involving more than 1,300 scientists worldwide grouped ecosystem services into four broad categories: *provisioning*, such as the production of food and water; *regulating*, such as the control of climate and disease; *supporting*, such as nutrient cycles and crop pollination; and *cultural*, such as spiritual and recreational benefits.

healthy soils, clean water, clean air and a healthy biodiversity. These are the real assets that we have inherited and that we should hand on in good order to future generations. This is our real wealth and yet we are destroying so much of it, often without even giving it any consideration.

To put it simply, Human Society emerged from, and is entirely reliant for its survival on, the natural environment. Economic systems are created to serve society and can be changed by society. Human society on its present course, with a rapidly growing population, and with an economic system based on an ever increasing use and abuse of natural resources, is destined to destroy the natural systems on which it relies.

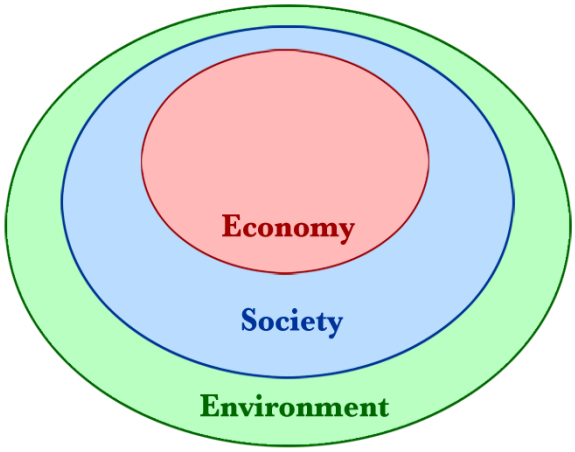

Fig 1 The Russian doll model of sustainability, showing the economy contained within society and society within the environment

In the context of the above, and focussing on four urgent areas; climate change, biodiversity, water and the health impacts of pollution - the OECD[5] concludes that urgent action is needed now to avoid the significant costs of inaction, both in economic and human terms.

What then is required in order to move away from this destructive pathway?

Firstly, it is the recognition, by society at large, that we live in a system with finite resources, and that production and consumption patterns have to adjust given rapid population growth, depleted resources and the pace at which the biosphere and the atmosphere can regenerate.

What is also required is strong, coherent and integrated intervention to correct and re-balance our environmental, social and economic systems to produce a sustainable dynamic equilibrium. The time for this intervention is now, and a clear pathway to a green economy needs to be planned if we are to create truly sustainable green jobs, so that opportunities for innovation and job creation are not missed through lack of strategic planning.

5 OECD Environmental Outlook to 2050 (OECD, 2012) p.1
http://www.oecd.org/environment/outlookto2050

This may be our last shot at getting it right when you consider the rapid decline in opportunities to take effective action.

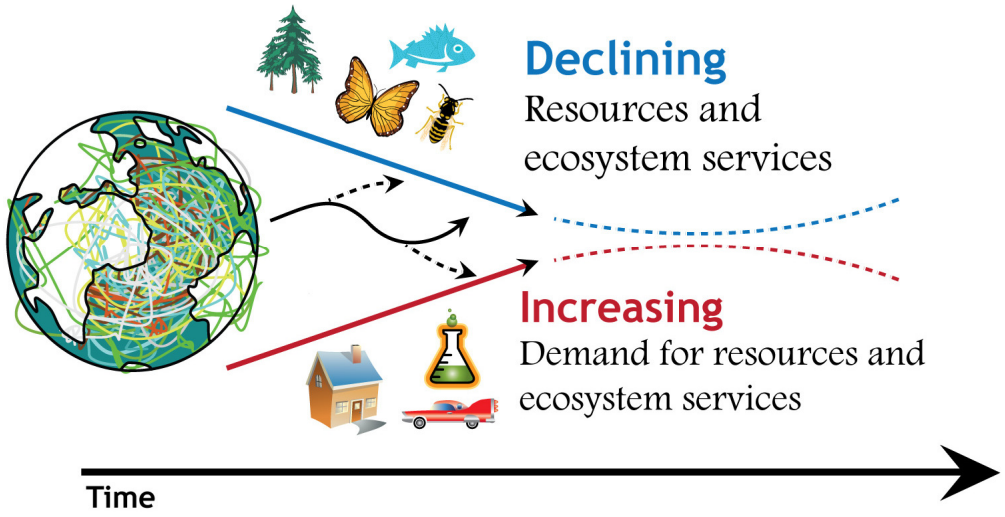

Fig 2 - The narrowing gap of opportunity[6]

Declining Resources
• The capacity to produce oil peaked in 2006 whilst demand for energy continues to grow. (International Energy Agency April 2011.) • Food prices are rising rapidly, driven by the price of oil and the impact of climate change (Tom Arnold - Concern Worldwide, June 2011) • The oceans are rapidly being depleted. (UNEP 2011) • Industry is fast running out of raw materials (Neil O'Leary - Ion Equity, June 2011) • Fresh-water supply world-wide is in crisis (Tom Arnold - Concern Worldwide, June2011) • The current economic crisis pales into insignificance compared with the environmental and climate crisis (Paul Harris – Head of Natural Resource Risk Management, Bank of Ireland, April 2012)

6 http://www.naturalstep.org/en/

1.1 What is a Green Economy?

A Green Economy is a system of economic activities related to the production, distribution and consumption of goods and services that result in improved human well-being [7]over the long term, while not exposing future generations to significant environmental risks and ecological scarcities. [8] It is based on the fundamental understanding that we live on one planet, and that the resources of that planet are limited, and that the limit to the sustainable use of these resources is being reached or in some cases has already been exceeded.

In a Green Economy, economic activities are carried out in accordance with ecosystem-based management. This regulates the use of our ecosystems so that we can benefit from them while at the same time ensuring that the basic ecosystem functions are preserved.

The creation of a Green Economy is essentially about improving human well-being, while significantly reducing environmental risks and ecological scarcities. Investments in greening key sectors of the economy, and adopting related policies and strategies, can lead to a healthier population. Moving away from the conventional "grow first, clean up later" path of development into a "green" path of development will result in a healthy socially inclusive, productive, equitable and more resilient society.

A Green Economy is one in which ecological assets are considered to be at the core of long-term wealth. These assets must be managed as a source of prosperity and well-being. One of the major findings of the UNEP Green Economy Report[9] is that a Green Economy supports growth, incomes and jobs, and that the so-called trade-off between economic progress and environmental sustainability is a myth.

A Green Economy recognizes the value of, and Invests in, Natural Capital

Biodiversity, the living fabric of this planet, includes life at all levels: genes, species and ecosystems. At each of these levels, biodiversity contributes to human wellbeing and provides economies with valuable resource inputs as well as regulating services towards a safe operating environment. These so-called "ecosystem services" are mostly in the nature of public goods and services whose economic invisibility has thus far been a major cause of their undervaluation, mismanagement and ultimately resulting loss. Economic values can be estimated for these ecosystem services, and the present value of these ecosystem services is a fundamental part of "natural capital."

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7 Our existence depends on ecological processes, the cycling of water, stable atmospheric, climatic and hydrological conditions, and the production of food and many other products and services which contribute to our well-being.
8 UNEP's Working Definition of a Green Economy:
9.http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf

Natural assets such as forests, lakes, wetlands and river basins are essential components of natural capital at an ecosystem level. They are vital in ensuring the stability of the water cycle and its benefits to agriculture and households, the carbon cycle and its role in climate mitigation, soil fertility and its value to crop production, local microclimates for safe habitats, fisheries for proteins, and so on, which are all crucial elements of a green economy.

Better information supports better policies, so our knowledge base needs to be improved. There are many areas where economic valuation of environmental impacts should be improved, including for understanding the full benefits of biodiversity and ecosystem services, and health costs associated with exposure to chemicals. This will help to measure and value those elements of improved human welfare and progress that cannot be captured by GDP alone. Better information on costs and benefits will help to improve our understanding of the costs of inaction, and make a strong case for green growth policy reforms[10].

In this regard the work of *The Economics of Ecosystems and Biodiversity* (TEEB)[11] initiative provides valuable guidance for policy makers, allowing for the integration of ecosystem and biodiversity values into policy assessment.

UNEP defines a Green Economy as one that results in "improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities" (UNEP 2010)[12]. In its simplest expression, a green economy is low-carbon, resource efficient, and socially inclusive. In a green economy, growth in income and employment are driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.[13]

These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes. The development path should maintain, enhance and, where necessary, rebuild natural capital as a critical economic asset and as a source of public benefits. This is especially important for poor people whose livelihoods and security depend on nature.

The key aim for a transition to a green economy is to enable economic growth and investment while increasing environmental quality and social inclusiveness. Critical to attaining such an objective is to create the conditions for public and private investments to incorporate broader environmental and social criteria. In addition, the main indicators of economic performance, such as growth in Gross Domestic Product (GDP) need to be adjusted to account for pollution, resource depletion, ecosystem services in decline, and the distributional consequences of natural capital loss to the poor.

10 OECD Environmental Outlook to 2050 (OECD, 2012) p.8 http://www.oecd.org/environment/outlookto2050

11http://www.teebweb.org/Portals/25/Documents/TEEB%20for%20National%20Policy%20Makers/TEEB%20for%20Policy%20exec%20English.pdf

12 UNEP. (2010). Driving a Green Economy through public finance and fiscal policy reform. Available at: http://www.unep.org/greeneconomy/Portals/30/docs/DrivingGreenEconomy.pdf

13.http://www.unep.org/greeneconomy/Portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf 1.2

Reality-Based Economics - Measuring all the capital costs and benefits

During the last two decades, much capital was poured into property, fossil fuels and structured financial assets with embedded derivatives. For example, globally, subsidies to fossil fuels may be on the order of US$ 600 billion per year[14]. However, relatively little in comparison was invested in renewable energy, energy efficiency, public transportation, sustainable agriculture, ecosystem and biodiversity protection, and land and water conservation. In a Green Economy public money should no longer be spent on the former. At the same time unsustainable practices and behaviour should be discouraged using the full panoply of legislative and economic tools available to Government.

Existing policies and market incentives allow businesses to run up significant, largely unaccounted for, and unchecked social and environmental externalities. To reverse such misallocation requires better public policies, including pricing and regulatory measures, to change the perverse incentives that drive this capital misallocation and ignore social and environmental externalities.

Towards a Green Economy[15] – the main output of the Green Economy Initiative – demonstrates that the greening of economies need not be a drag on growth. On the contrary, the greening of economies has the potential to be a new engine of growth, a net generator of decent jobs and a vital strategy to eliminate persistent poverty.

Taking Steps toward a Green Economy

At Rio+20, the leaders of 15 global companies have called for urgent action to properly value and maintain the Earth's natural capital.[16]
CEOs and Board members of leading companies, which include Anglo American, Alstom, Arup, ASDA-Walmart, Aviva Investors, Grupo André Maggi, Kingfisher, Mars, Natura, Nestlé, Puma, SABMiller, Unilever, Volac and Votorantim, have signed up to the Natural Capital Leadership Compact.
Businesses have committed to address the following four challenges:
1. Operate within the limits of natural systems – manage their supply sources in order to protect the environment and improve social equity.
2. Identify and address the (as yet) un-costed impacts of their business activities on people and the environment that are associated with the production and

14 Global Subsidies Initiative. http://www.iisd.org/gsi/fossil-fuel-subsidies
15 http://www.unep.org/greeneconomy/Portals/88/documents/ger/GER_synthesis_en.pdf
16 Natural capital has been defined as including diversity of life, or biodiversity, underpinning the resilience of the Earth's natural systems to absorb shocks and disturbances. It also includes vital ecosystem services under threat – ranging from crop pollination to carbon storage and freshwater provision, and from fisheries to wood production and the renewal of soil fertility – upon which society and all economic activity relies.

consumption of goods and services – and pledge to build this into business decision-making and planning.
3. Enable consumers to make better-informed choices – by working with industry bodies, governments and citizens to deepen public debate on how to realign consumption within the limits of natural capital and to eliminate wastage and inefficiency.
4. Develop rigorous and realistic targets and plans – to promote the protection and efficient use of natural capital.

1.2 What is a Green Job?

In an ideal state of affairs, a green economy is one that does not generate pollution or waste and is hyper-efficient in its use of energy, water, and materials. Using this green utopia as a yardstick would mean that currently there are few, if any, green jobs. A more realistic, pragmatic approach is process-oriented rather than fixated on an ideal yet elusive end-state. In other words, green jobs are those that contribute appreciably to maintaining or restoring environmental quality and avoiding future damage to the Earth's ecosystems.[17]

Green Jobs can be defined as positions in agriculture, fishing, manufacturing, construction, installation, and maintenance, as well as scientific and technical, administrative, and service-related activities, that contribute substantially to preserving or restoring environmental quality. Specifically, but not exclusively, this includes jobs that help to protect and restore ecosystems and biodiversity; reduce energy, materials, and water consumption through high-efficiency and avoidance strategies; decarbonize the economy; and minimize or altogether avoid generation of all forms of waste and pollution. But Green Jobs also need to be good jobs that provide for; adequate wages, safe working conditions and worker rights, including the right to organize labour unions.

The Bureau of Labour Statistics BLS in the US Dept of Labour in order to conduct surveys relating to the Green Economy has developed a useful definition of Green Jobs, which is adapted here for the Irish context. Green jobs are either:

A. *Jobs in businesses that produce goods and provide services that benefit the environment or conserve natural resources.* These goods and services are sold to customers, and include research and development, installation, and maintenance services. Green goods and services fall into one or more of five groups:

1. *Energy from renewable sources.* Electricity, heat, or fuel generated from renewable sources. These energy sources include wind, biomass, geothermal, solar, ocean, hydropower, and landfill gas and municipal solid waste.
2. *Energy efficiency.* Products and services that improve energy efficiency. Included in this group are energy-efficient equipment, appliances, buildings, and vehicles, as well as products and services that improve the energy efficiency of buildings and the efficiency of energy storage and distribution, such as Smart Grid technologies.
3. *Pollution reduction and removal, greenhouse gas reduction, and recycling and reuse*. These are products and services that:

17 UNEP (2008) *Green Jobs: Towards decent work in a sustainable, low-carbon world* http://www.unep.org/labour_environment/PDFs/Greenjobs/UNEP-Green-Jobs-Report.pdf p.35

- Reduce or eliminate the creation or release of pollutants or toxic compounds, or remove pollutants or hazardous waste from the environment.
- Reduce greenhouse gas emissions through methods other than renewable energy generation and energy efficiency.
- Reduce or eliminate the creation of waste materials; collect, reuse, remanufacture, recycle, or compost waste materials or wastewater.

4. *Natural resources conservation.* Products and services that conserve natural resources. Included in this group are products and services related to: organic agriculture, sustainable fishing and sustainable forestry; land management; soil, water, or wildlife conservation; and storm-water management.
5. *Environmental compliance, education and training, and public awareness.* These are products and services that:
   - Enforce environmental regulations.
   - Provide education and training related to green technologies and practices.
   - Increase public awareness of environmental issues.

B. *Jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources.* These workers research, develop, or use technologies and practices to lessen the environmental impact of their establishment, or train the establishment's workers or contractors in these technologies and practices. These technologies and practices fall into one or more of four groups:

1. *Energy from renewable sources.* Generating electricity, heat, or fuel from renewable sources primarily for use within the establishment. These energy sources include wind, biomass, geothermal, solar, ocean, hydropower, and landfill gas and municipal solid waste.
2. *Energy efficiency.* Using technologies and practices to improve energy efficiency within the establishment. Included in this group is cogeneration (combined heat and power).
3. *Pollution reduction and removal, greenhouse gas reduction, and recycling and reuse.* Using technologies and practices within the establishment to:
   - Reduce or eliminate the creation or release of pollutants or toxic compounds, or remove pollutants or hazardous waste from the environment.
   - Reduce greenhouse gas emissions through methods other than renewable energy generation and energy efficiency.
   - Reduce or eliminate the creation of waste materials; collect, reuse, remanufacture, recycle, or compost waste materials or wastewater.
4. *Natural resources conservation.* Using technologies and practices within the establishment to conserve natural resources. Included in this group are technologies and practices related to organic agriculture,

sustainable fishing and sustainable forestry; land management; soil, water, or wildlife conservation; and storm-water management.

Protecting the Environment and Creating Jobs

Despite the increasing threats to marine environments, progress in establishing marine protected areas (MPAs) has been slow: MPAs only cover a fraction (0.5%) of the high seas (Coad et al. 2009)[18]. It has been estimated that conserving 20-30% of global oceans through a network of Marine Protected Areas could create a million jobs, sustain a marine fish catch worth US$70-80 billion/year (Balmford et al 2004)[19]. A review of 112 studies and 80 MPAs found that fish populations, size and biomass all dramatically increased inside reserves, allowing spill-over to nearby fishing grounds (Halpern 2003)[20].

18 http://www.unep-wcmc.org/protected_areas/pdf/Towardprogress.pdf
19 http://www.sciencemag.org/cgi/content/abstract/297/5583/950
20http://www.esajournals.org/doi/pdf/10.1890/10510761%282003%29013%5B0117%3ATIOMRD%5D2.0.CO%3B2

1.3 The pathway to a Green Economy

Transforming the economy onto a resource-efficient path will bring increased competitiveness and new sources of growth and jobs through cost savings from improved efficiency, commercialisation of innovations and better management of resources over their whole life cycle. This requires policies that recognise the interdependencies between the economy, wellbeing and natural capital and seeks to remove barriers to improved resource efficiency, whilst providing a fair, flexible, predictable and coherent basis for business to operate. Roadmap to a Resource Efficient Europe[21]

To make the transition to a green economy, specific enabling conditions will be required. These enabling conditions consist of national regulations, policies, subsidies and incentives, as well as international market and legal infrastructure, trade and technical assistance. Currently, enabling conditions are heavily weighted towards, and encourage, the prevailing brown economy, which depends excessively on fossil fuels, resource depletion and environmental degradation.

To ensure that the momentum towards a green economy is sustained, and the sustainable development model realized, a comprehensive policy approach is needed. The approach must recognize the sector-specific challenges while ensuring that opportunities for decent work and social inclusion are achieved. This requires a three-pillared strategy[22]:

1. Provide the right mix of incentive structures and support to encourage the greening of the economy. A Green Economy requires the development of sustainable production and consumption patterns; these will trigger modifications to practices in most enterprises and structural change across the economy. The shift needs to create not only the incentives for enterprises to invest but also the capability for them to adopt the new mode of production. Support and encouragement of innovation here is essential. A Green Economy can be mutually reinforcing, with good labour market and social development outcomes, but this is not automatic. It will hinge on the right policies and on institutions capable of implementing them.

- Introduce environmental tax reform, in particular an eco-tax that shifts the burden to resource use and pollution and away from labour. A successful strategy is one that links the dimensions of sustainable development in a way that generates positive outcomes in all areas.
- Encourage investment in a greener economy. Efficient product markets will be essential, but current market signals do not mobilize and channel sufficient investment in the right direction. Investment has been grossly insufficient in many areas, including clean and modern sources of energy,

21 http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf p.4
22 International Labour Organisation (2012) *Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy.* http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_181836.pdf

resource-efficient housing, manufacturing and transport, sustainable smallholder agriculture and rural infrastructure, sustainable tree-cover, sustainable maritime activities and the rehabilitation of ecosystem services. In addition to adjusting economic incentives, targeted programmes, including public works schemes will be needed.

- Provide targeted support to enterprises, notably SMEs. The role of SMEs in the transformation to a green economy will be critical for successful greening of the economy, especially in terms of improved employment and social outcomes.

2. A sustainable development approach which puts people, the planet and fairness at the core of policy-making is urgently needed and eminently possible, but a Green Economy is not inclusive and socially sustainable by default.

3. Place social dialogue at the centre of policy making to improve coherence and to ensure a successful shift to a new development model. Social dialogue aims to promote consensus-building among the major stakeholders. Effective dialogue can help resolve crucial socio-economic issues and improve economic performance. Given that the transition towards a Green Economy will entail profound changes in production processes and technologies as well as reallocations of jobs, close cooperation between government and the social partners will be central to the success of this transformation.

1.4 Ireland's pathway to employment creation in a Green Economy

Whilst not actually defining the Green Economy, the 2012 *Action Plan for Jobs* [23](APJ) talks of bringing together a range of commercial activities which contribute to lowering greenhouse gas emissions and improving resource usage. However this represents a very narrow understanding of what constitutes a truly Green Economy. Consequently the full potential for the creation of "green jobs" will not be realised, and those that are created will be left vulnerable due to the lack of a consistent Green Economy policy context. Further, jobs that are created, outside of this context, may well destroy the potential for sustainable job creation now or in the future.
The fact that the Government in the APJ sees the Green Economy as just one small part of its job creation plan is very disappointing. In the light of the adoption of the cross-departmental Framework for Sustainable Development Ireland, *Our Sustainable Future*[24] all plans and strategies produced by Government should be rooted in the concept of sustainable development, of which the Green Economy is one of the three interdependent components along with those of Society and Environment.

The APJ correctly asserts that Ireland has a number of strengths which it can leverage to create employment and growth opportunities both for indigenous companies and for foreign investment in Ireland. These include:

- An outstanding natural environment and landscape to support "green" tourism and activities.
- An established international image as the "Emerald Isle" which can be built upon to promote Ireland's "Green" offering.

Both of these are however very vulnerable claims and need to be based in reality and supported by evidence. Positioning the APJ into the Green Economy model will do much to support this.

It is important to note that transformation in the context of a Green Economy will be greatest among a number of key sectors. While changes in employment and incomes will be seen throughout the economy, eight key sectors will undergo major changes: agriculture, forestry, fishing, energy, resource- intensive manufacturing, recycling, buildings and transport.[25] These will be discussed in the chapters following.

If Ireland is to succeed in making the transition towards a low carbon, Green Economy we must begin now by:

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23 http://www.djei.ie/publications/2012APJ.pdf Para 7.3
24 *Our Sustainable Future* – A Framework for Sustainable Development in Ireland. (2012) http://www.environ.ie/en/Publications/Environment/Miscellaneous/FileDownLoad,30452,en.pdf
25 International Labour Organisation (2012) *Working towards sustainable development: Opportunities for decent work and social inclusion in a green economy.* http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_181836.pdf

- Making the transition **a national priority**, **led by the Taoiseach,** and embedded in all government departments, regional and local authorities and all sectors of the economy and supported by effective legislation- a part of the national psyche. The transition to a Green Economy will require strong leadership and political will supported by a well-informed and proactive public.
- All of Government thinking and cross-departmental solidarity will be essential if the development of a Green Economy is to be a success. Where the results of the actions of one department are felt by the constituents of another, this should be recognised but should not be a barrier to action.
- A national roadmap identifying the measures associated with opportunities is also required.
- Investing in clean energy, waste minimization, resource efficiency and ecosystem enhancing activities.
- Supporting local food and energy production which will increase the number of secondary industries and create a revival of local communities.
- Cutting perverse subsidies to, and discourage investment in, high emission, heavily polluting, waste generating, resource intensive, and ecosystem-damaging activities.
- Increasing carbon taxes and other taxes on environmental bads in accordance with the polluter-pays principle.
- Introducing forestry incentives for carbon sequestration and biodiversity enhancement.
- Ensuring effective implementation of environmental law.
- Investing in research into alternatives and encouraging investment in resource efficient and non-polluting activities, in *inter alia* Agriculture, Health, Buildings, Cities, Energy, Forests, Manufacturing, Tourism, Transport, Waste, and Water.
- Building on existing international/national indicators for measuring the transition, including the shift in investments (as for example in the case of UNEP/REN21'S regularly published status of investments in renewable energy). Indicators for measuring progress towards a green economy are essential.

Our green assets are the foundations on which to build a low -carbon Green Economy in Ireland. In order to ensure that Ireland benefits fully from the opportunities associated with these assets we could begin by:

- Promoting their importance in the "psyche of the nation" for of our long term wealth and well-being.
- Ensure resilience in natural capital that supports jobs and economic returns in a sustainable manner.
- Highlight the inter-linkages between health, trade, jobs, et al, and the Green Economy.

- Ensuring a robust evidence-base for sustainability claims in energy, food and all sectoral policy development and decision-making
- Invest in sustainable agriculture, sustainable fisheries and biodiversity friendly business where trade opportunities are growing rapidly (Global trade in organic food, drinks, fibres and cosmetics is over US$60 billion per year).
- Expand the public transport system and increase energy efficiency.

1.5 The Green Economy and Sustainable Development

The World Wide Fund for Nature, the International Union for Conservation of Nature (IUCN), and UNEP interpreted the concept of Sustainable development as “improving the quality of human life within the carrying capacity of supporting ecosystems” (WWF, IUCN and UNEP 1991).

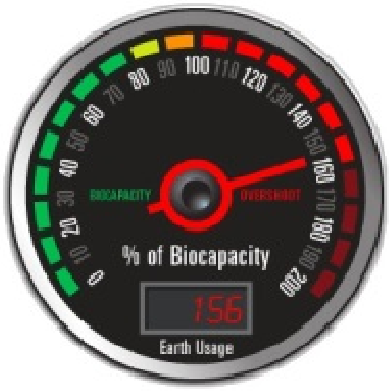

Fig 3 Wednesday, August 22nd was "Earth Overshoot Day", the date on which humanity exceeded the bio-capacity of our planet for the entire year of 2012. Humanity will have used over 50% more that the earth can sustain. In Ireland we will have used nearly 3 times as much as the earth can sustain.[26]

Sustainable development provides an important context for the Green Economy, and is based in the substantial body of analysis and policy effort that has flowed from the 1992 Rio Earth Summit. It must be able to deliver on a number of Rio’s key aspirations, including Agenda 21.

The Green Economy has not been conceived as a replacement for sustainable development, but rather should be considered as an integral part of it. It must provide a strong focus on fostering the necessary conditions for innovation, investment and competition that can give rise to new sources of economic growth, consistent with resilient ecosystems. Green growth strategies need to pay specific attention to many of the social issues and equity concerns that can arise as a direct result of greening the economy – both at the national and international level. To achieve this they should be implemented in parallel with initiatives centring on the broader social pillar of sustainable development.

In this context, a Green Economy that values environmental assets, employs pricing policies and regulatory changes to translate these values into market incentives, and adjusts the economy’s measure of GDP for environmental and social losses is essential to ensuring the well-being of current and future generations.[27]

26 http://www.naturalstep.org/en/
27 Blueprint for a Green Economy: by D. Pearce et al Earthscan Publications, London, UK, 1989

As explained by Partha Dasgupta (2008)[28]: "Ecosystems are capital assets. Like reproducible capital assets … ecosystems depreciate if they are misused or are overused. But they differ from reproducible capital assets in three ways:

> (1) depreciation of natural capital is frequently irreversible (or at best the systems take a long time to recover);
> (2) except in a very limited sense, it isn't possible to replace a depleted or degraded ecosystem by a new one; and
> (3) ecosystems can collapse abruptly, without much prior warning."

Also unlike other capital assets there is a major difficulty in that the increasing costs associated with rising ecological scarcity are not routinely reflected in markets. Almost all the degraded ecosystem goods or services identified by the *Millennium Ecosystem Assessment* (MEA) in 2005[29], are not marketed. Some goods, such as capture fisheries, fresh water, wild foods, and wood fuel, are often commercially marketed, but due to the poor management of the biological resources and ecosystems that are the source of these goods, and imperfect information, the market prices do not reflect unsustainable use and overexploitation.

An important indicator of the growing ecological scarcity worldwide was also provided by the *Millennium Ecosystem Assessment*, which found that over 60 per cent of the world's major ecosystem goods and services covered in the assessment were degraded or used unsustainably.

Valuing ecosystem goods and services is not easy, yet it is fundamental to ensuring the sustainability of the Green Economy development efforts.

There is a positive role here for government in providing an appropriate and effective infrastructure through public investment, protecting critical ecosystems and biodiversity conservation, creating new incentive mechanisms such as payment for ecosystem services, fostering the technologies and knowledge necessary for improving ecosystem restoration, and facilitating the transition to a low-carbon Green Economy. In implementing the Programme for Jobs it is essential that Government uses these and the other economic tools at its disposal to ensure that new employment created is sustainable and that the focus is on Green Jobs.

28 Dasgupta, P. (2008). "Nature in Economics." *Environmental and Resource Economics* 39:1-7.
29 http://www.millenniumassessment.org/documents/document.356.aspx.pdf

A Safe and Just Space for Humanity must underlie the Green Economy

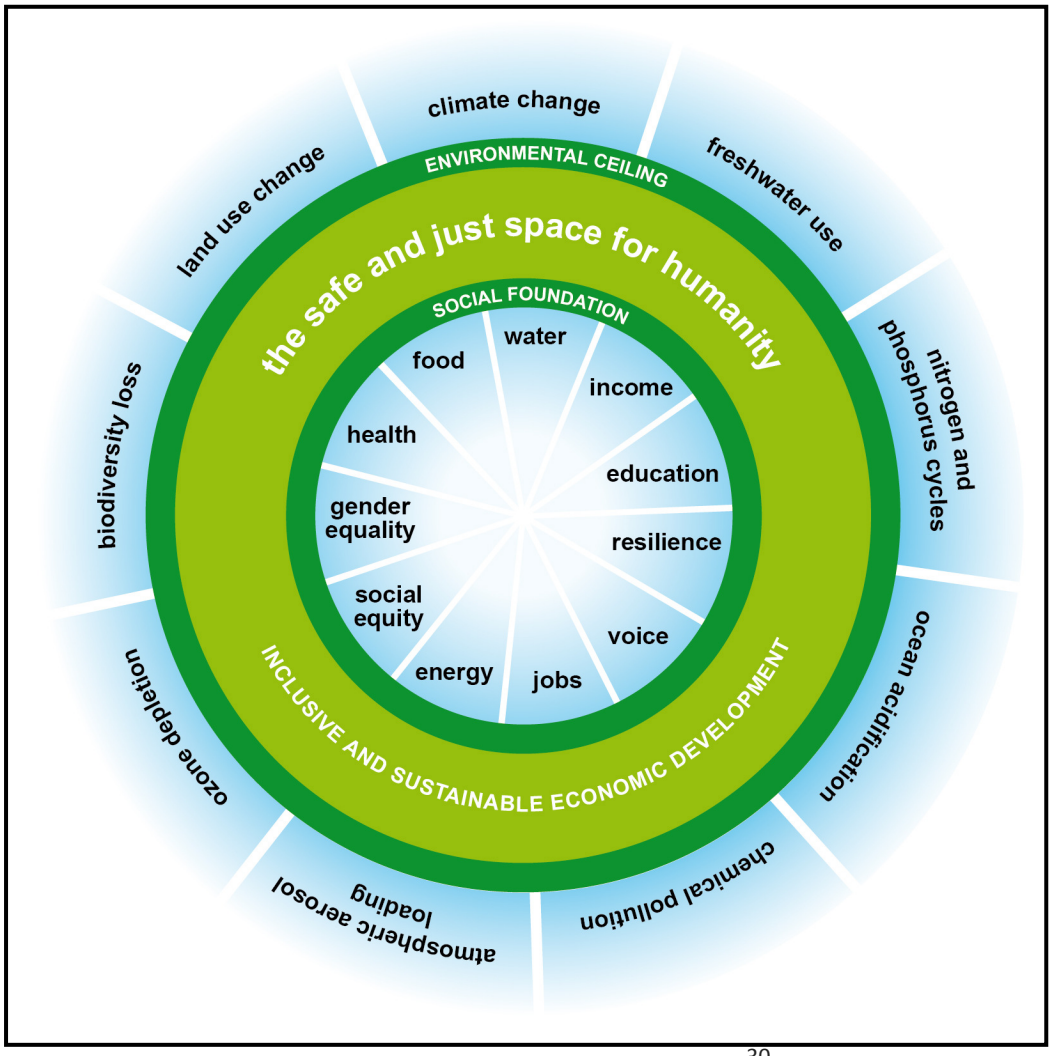

Fig 4. A safe operating space for humanity[30]

Identifying and quantifying planetary boundaries that must not be transgressed could help prevent human activities from causing unacceptable environmental change, argued Johan Rockström and colleagues in 2009[31]. (Source Oxfam inspired by Rockström et al[32])

Sustainable development policy that supports the push for Green Jobs

The two most relevant documents here are the *EU 2020 Strategy* and the Framework for Sustainable Development for Ireland, *Our Sustainable Future*.

The EU 2020 Strategy asserts three priorities that look towards a Green Economy:

30 http://www.youtube.com/watch?feature=player_embedded&v=PCAx3TG8LkI
31 http://www.nature.com/news/specials/planetaryboundaries/index.html [Accessed 20/02/2012]
32 http://blogs.oxfam.org/en/blog/12-02-13-can-we-live-inside-doughnut-why-world-needs-planetary-and-social-boundaries [Accessed 20/02/2012]

- Smart growth: developing an economy based on knowledge and innovation.
- Sustainable growth: promoting a more resource efficient, greener and more competitive economy.
- Inclusive growth: fostering a high-employment economy delivering social and territorial cohesion.

It also includes in its seven flagship initiatives:

- a “Resource efficient Europe" to help decouple economic growth from the use of resources, to support the shift towards a low carbon economy, to increase the use of renewable energy sources, to modernise our transport sector and to promote energy efficiency.
- "Innovation Union" to improve framework conditions and access to finance for research and innovation so as to ensure that innovative ideas can be turned into products and services that create growth and jobs.
- "An agenda for new skills and jobs" to modernise labour markets and empower people by developing their of skills throughout the lifecycle with a view to increase labour participation and better match labour supply and demand, including through labour mobility.

The EU Vision for a resource efficient 2050

By 2050 the EU's economy has grown in a way that respects resource constraints and planetary boundaries, thus contributing to global economic transformation. Our economy is competitive, inclusive and provides a high standard of living with much lower environmental impacts. All resources are sustainably managed, from raw materials to energy, water, air, land and soil. Climate change milestones have been reached, while biodiversity and the ecosystem services it underpins have been protected, valued and substantially restored. - Roadmap to a Resource Efficient Europe[33]

The Framework for Sustainable Development in Ireland builds on this but is much broader in scope - *Sustainable development is about ourselves. It is about inhabiting a place where there is economic stability based on a model of national progress and development that respects the three core pillars of sustainability: the environment, the economic, and the social.*

33 http://ec.europa.eu/environment/resource_efficiency/pdf/com2011_571.pdf

The Irish Governments Vision for *Our Sustainable Future*[34]

Our Sustainable Future provides a platform for a joined-up approach to policy-making across all sectors to ensure cohesive, rigorous and soundly-based decision making.
Enda Kenny, T.D. Taoiseach

Decoupling environmental degradation and resource consumption from economic and social development is an enduring challenge in Ireland as elsewhere and requires a paradigm shift in our approach to future development.
Phil Hogan, T.D. Minister for the Environment, Community and Local Government

34 *Our Sustainable Future* – A Framework for Sustainable Development in Ireland. (2012) http://www.environ.ie/en/Publications/Environment/Miscellaneous/FileDownLoad,30452,en.pdf Foreward

2.0 Cross-Sectoral Issues

A green economy should be a driver of competitiveness, security of supply and sustainability. It should be the economy in its entirety rather than a niche or a subset of the economy.

There is a significant responsibility to ensure a 'just transition' to a green economy that creates job opportunities and maintains long term employment. Achieving this transition needs to be planned and clearly presented in a national roadmap, and should include creating opportunities at a community level through cooperatives and small to medium enterprise as well as nationally and internationally.

Recommendation**: Publish a plan for achieving a green economy in Ireland.**

An analysis[35] of the existing green jobs and potential areas of green job development is needed so that progress can be actively monitored, so that green jobs are realised and not lost, so that a full accounting of green jobs is achieved, and so that a start and end point is identified. This will allow for the creation of appropriate indicators and accurate reporting under the stimulus package as well as in National Reform Programmes.

Recommendation**: Publish a profile assessment of existing green/brown/grey jobs and potential future green jobs in Ireland.**

Creating and maintaining jobs in a green economy has multiple components. We make recommendations is each of these areas:

- **creating green jobs in the short term**
- **retaining existing green jobs**
- **greening existing jobs**
- **ensuring our capacity to create green jobs in the future**

Actions: see separate list of recommendations.

35 http://www.unep.org/greeneconomy/GreenEconomyReport/tabid/29846/Default.aspx

2.1 Taxation

A key element of a green economy is getting the incentives right. This means ensuring that both taxes and expenditure, including subsidies, incentivise sustainability and employment rather than dis-incentivising them.

2.1.1 Site Value Tax

We have already set out the arguments for environmental tax reform in general and site value tax in particular in our Submission to the Inter-departmental Group on Property Tax (March 2012)[36] and our Submission to the Taxation Commission (May 2009)[37]. Those documents and the reports to which they refer make the case for environmental tax reform, shifting taxes from "goods" to "bads", with positive results for the economy, public health and well-being and the environment.

In relation to property taxation we wish to make some particular points in the context of the Green Economy Plan to be developed as part of the Action Plan for Jobs. A site value tax has a number of positive macroeconomic benefits.[38] Key considerations from the point of view of the Green Economy and the Action Plan for Jobs are the following:

- A site value tax has a positive effect in damping down the risks of property bubbles with their enormous economic impact.
- It acts as an incentive to development of zoned land and a disincentive both to the speculative hoarding and the speculative zoning of land.
- It acts to encourage even economic development throughout the country rather than increasing regional inequality.
- Unlike a tax including the value of the building(s) on site, it does not act as a disincentive to renovation, repair and retrofit.

The above considerations mean that a site value tax has a positive impact on employment, whereas a tax on the value of buildings has a negative impact. In particular, probably the largest element of the green economy is the necessary thermal retrofit of pretty much the entire building stock – in Ireland as in other Western European countries. It is potentially a very significant source of employment in all parts of the country, a key cost-effective element of our emissions reductions plans and a profitable long-term investment both in energy demand reduction but even more significantly in public health.

The prospect of property owners being faced with increased tax bills as a result of having improved the energy performance of their property risks acting as a significant disincentive to thermal retrofit and must be avoided.

36 http://environmentalpillar.ie/2012/03/16/submission-on-property-tax/
37 http://environmentalpillar.ie/2009/05/26/briefing-paper-4-submission-to-the-taxation-commission/
38 Gurdgiev, Constantin., 2009, Macroeconomic Case for a Land Value Tax Reform in Ireland http://commissionontaxation.ie/submissions/Other//J07%20-%20supplementary.doc

We find it astonishing that having experienced both widespread urban dereliction in the 1980s and early 1990s, followed by a property bubble, Ireland should now consider introducing a form of property tax which would act as a perverse incentive towards exactly such dereliction and do nothing to address the risk of future bubbles.

Recommendation: **Implement a property tax based on the value of all zoned residential land, extending it to all development land in replacement of commercial rates.**

2.1.1.1 Employment Impact Assessment of Property Tax Options

Current administrative policy in Ireland is to carry out Regulatory Impact Analysis before the introduction of major new regulations or taxes. The assessment must in particular assess the employment implications of the various options for property taxation. The differential impacts are significant and decision-makers must be properly informed before they can make a correct decision.

Recommendation: **Conduct an Employment Impact Assessment of Property Tax Options**

2.1.2 Task Force on Environmental Tax Reform

Environmental Tax Reform (ETR) is now a well-developed theme of good fiscal and environmental policy across OECD countries. For the most part, such tax reform has been highly successful in Ireland: for example the land-fill levy, the plastic bag tax, reform of vehicle taxation and to a lesser degree (because it is partial and insufficient) the carbon tax.

It is noted that the increasing support from the business sector for the principle of Environmental Tax reform. E.g. the presentation from KPMG *Framework for Sustainable Development for Ireland: A Business Perspective*[39] at the workshop on what became *Our Sustainable Future* recommended the following:

- *Develop a framework for environmental tax reform*
- *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 help contribute to the Government's objective of creating a resource efficient and smart green economy.*
- *Carbon tax*
- *More consumption based taxes and less on labour.*

Environmental Tax Reform (ETR) is now a well-developed theme of good fiscal and environmental policy across OECD countries. For the most part, such tax reform has been highly successful in Ireland: we would instance the landfill levy, plastic bag levy, reform of vehicle taxation and to a lesser degree (because it is partial and insufficient) the carbon tax.

39 Presented at DECLG workshop 24th January 2012 http://www.environ.ie/en/Environment/SustainableDevelopment/ConsultationFrameworkforSustainableDevelopmentforIreland/

Interesting work on ETR in the Irish context was done for the Environmental Tax Reform Workshop in Dublin in 2010.[40] In order to progress the shift to environmental taxation we believe that some sort of specialised administrative structure with input from relevant departments and external experts should be established to carry out the analysis required to move the process forward.

Recommendation: **Establish an administrative structure to analyse and develop proposals to shift taxation from production and labour to resource use and pollution.**

2.1.3 Fuel Taxation

There have been various calls for fuel taxes to be reduced in response to high oil prices. Given the extent of the challenges we face to reduce greenhouse gas emissions from the transport sector, this would be a mistake.

Recommendation: **Maintain and increase fuel taxes**

40 EEA, Further Environmental Tax Reform – Illustrative Potential in Ireland, http://www.eea.europa.eu/articles/cutting-deficits-and-protecting-the-environment/further-environmental-tax-reform-illustrative/view

2.2 Subsidies

2.2.1 PSO to peat fired electricity production

This perverse subsidy has been widely criticised.[41] [42] [43] It is time to abolish it and to use some of the revenue in support of renewable energy in rural locations. In particular the bioenergy options being developed in the RASLRES project (see more below) are good candidates for economic activities to replace the employment currently offered by the peat-fired power plant and associated peat extraction.

Recommendation: **Abolish PSO to peat fired electricity production**

2.2.2 Tax exemption of employee parking spaces

This issue was given brief consideration by the Tax Strategy Group in 1999 but no action was taken.[44] A proposal for a flat employee parking charge was in the 2009 Budget but never implemented. Given the financial constraints and the negative effects of the exemption, contrary to government policy, it is time to end this unfair tax exemption.

Recommendation: **Abolish Tax exemption of employee parking spaces**

2.2.3 Task force on subsidies and exemptions

As with environmental tax reform, the multiple benefits of eliminating environmentally harmful subsidies require detailed working out in practice. Because of the inertia in the system, many such subsidies continue to operate long after their negative impacts have been unequivocally demonstrated. In order to bring about the necessary changes we recommend that a specific piece of research be carried out to address these subsidies.

Recommendation: **Establish a task force to report on all other subsidies including those which operate by tax exemption.**

2.2.4 Red Diesel

There are a number of serious environmental reasons to discontinue the dying of diesel. There are also good criminality and exchequer arguments too.
When the dye is removed from red diesel it becomes a highly toxic residue that is being dumped all over the border counties, and is costing millions of euro to clean up. There is no facility on this island capable of taking this hazardous waste.
In the agricultural sector the goal of the diesel subsidy could be achieved by a tax rebate system.

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41 Douthwaite, Richard, and Healy, David, 2005, Subsidies and Emissions of Greenhouse Gases from Fossil Fuels. Comhar, http://www.comharsdc.ie/_files/SubsidiesandEmissionsfromFossilFuel_researchJan05.pdf
42 OECD Environmental Performance Review: Ireland 2010, http://www.oecdbookshop.org/oecd/display.asp?LANG=EN&SF1=DI&ST1=5KS763HDLLNT
43 Curtis, John A., 2012, The Environment Review 2012, ESRI, http://www.esri.ie/UserFiles/publications/RS26.pdf
44 http://www.finance.gov.ie/viewdoc.asp?fn=/documents/Publications/tsg/tsg9954.htm

In the fishing industry, subsidised diesel is encouraging increased fishing effort where fisheries are already overexploited. The removal of the direct subsidy and introduction of a rebate scheme would enable Government to monitor and restrict fishing effort as appropriate to conservation objectives.

Recommendation: **Abolish red diesel in favour of tax rebates in agriculture and other forms of support/ rebates for fishing which support conservation.**

2.3 Monetary Policy

2.3.1 Debt-based Money and the Reform of the Euro

Reform of the Euro

Engage with EU partners to reform the Euro and its governance so that it is capable of fulfilling its role in a sustainable economy. A far less frequently considered aspect of the sustainable or green economy is the way the monetary system and monetary policy operate. The money system as it currently operates undermines movement towards sustainability and needs to be altered in order to operate effectively and support a green economy.[45] [46] [47] This brings up fundamental questions which, given the Euro and ECB, fall to be addressed at the EU level. However, given our problems with the banking system and the resultant EU/IMF Programme of Financial Support, Ireland is inevitably central to this question and therefore should engage to develop its thinking and to ensure that the issues are addressed in a fundamental manner.

Debt Based Money

Limiting our response to 'green-tech' alone overlooks two important macroeconomic issues that are the subject of increasingly fierce debate and where fundamental economic changes/ reforms look increasingly likely:

i) the acceptance that the debt-based money issue is at the heart of primary systemic monetary dysfunction leading to adverse national and international economic and environmental consequences, leading to a reassessment of the pros and cons of bank-created money versus government created money with all the political controversy that this entails.[48]

ii) the impact of globalised supply chains on local/ regional economies and the challenge of rebuilding local competences with due regard to and respect for the market economy and its power

The first of these can be considered as a National Monetary Policy issue; the second as an opportunity to reappraise Local Economic Development models. We can envision possible 'sustainability' objectives for each.

National Monetary Policy

Ireland is under pressure from two extreme and opposite positions, each of which questions the legitimacy of the country even having a National Monetary Policy.

On the one hand, as part of the Eurozone Ireland has trusted the management of its currency to others. Others are now dictating a substantial part of national economic

45 Telekova, Mira, 2011, In debt to a destructive economy, http://www.greeneconomycoalition.org/know-how/debt-destructive-economy
46 Douthwaite, Richard, 2000, *The Ecology of Money,* Green Books
47 Jackson, Tim, 2009, *Prosperity without Growth: Economics for a Finite Planet,* Routledge
48 http://www.greeneconomycoalition.org/know-how/reform-money-new-green-economy

policy and all the main political parties are committed to seeing this partnership through to calmer waters. Ireland has no sovereign control of the money supply and cannot imagine such control without exiting the Euro.

On the other hand, Hayek's argument for denationalising currency - for allowing a free market among competing currencies - is enjoying a renaissance.[49] This rebirth is informed firstly by the dysfunction of existing fiat currencies and their systemic role in the crisis; and secondly by the disruptive emergence of privately issued digital currencies and the prospect of multiple co-existing 'designer currencies'.[50]

In the existing political landscape, Ireland's freedom of action here might seem limited, particularly since any public acknowledgement of the consideration of national monetary alternatives is seen as damaging (though this danger is probably over-estimated by proponents with a strong vested interest in the status quo). But if we accept that fundamental changes are more than likely, it will not pay any nation to put its head in the sand, and early movers are likely to set the agenda for subsequent international dealing.

In that context, Ireland might usefully constitute an institutional response - a think-tank with close access to policy levers and the true implications of their use, a presumption of transparency and a sustainability remit. The design of such an institution would be a challenge, but would in itself be a constructive stage of delivering a sustainable economy.

Local Economic Development

Critics of Local Economic Development models complain about the over reliance on attracting multi-nationals with subsidies because these companies have no real long term connection with the locality and disrupt genuine locally rooted business both on the way in and on the way out of the local economy.[51]

There is good evidence that local currencies can play a role in increasing local liquidity - primarily by increasing the velocity of circulation of money - but they have one major limitation. If local supply of particular goods or services simply does not exist - having been stripped out of the local economy via centralised supply chains - the economic circuits that are needed for continual monetary circulation are interrupted, and money flows out of the area to the centre or abroad.[52]

A better understanding of the key missing goods and services (energy may be a good initial example) would help to inform and direct a more targeted model of Local Development Currencies with local council sponsorship (i.e. councils accepting payment of rates, taxes and charges in the currency) can then work to rebuild

49 http://www.iea.org.uk/publications/research/denationalisation-of-money
50 http://www.energybulletin.net/stories/2012-07-24/lot-currency-designer
51 http://www.ilsr.org/key-studies-walmart-and-bigbox-retail/
52 http://www.time.com/time/business/article/0,8599,1903632,00.html

economies in the context of a local plan[53].

Recommendation: **Establish a think-tank to investigate mechanisms for moving away from debt based money and for developing local currencies**

Recommendation: **Engage with EU partners to reform the Euro and its governance so that it is capable of fulfilling its role in a sustainable economy.**

53 http://ijccr.net/2012/07/08/stroud-pound-a-local-currency-to-map-measure-and-strengthen-the-local-economy/

2.4 Training

The Leitrim Development Company (LDC) LEADER (RDP 2007-2013) business plan[54] includes a commitment to help refocus the construction sector in the County and also a large element of proposed activity relating to alternative and renewable energy technology. The Company was aware of the fact that there are a significant numbers of houses and buildings in Leitrim which have many unique characteristics including design, materials, construction methods, and which incorporate old buildings and a variety of alternative technologies in particular in relation to energy use. It was felt that the significance of this element of the built heritage could be related to the relatively large organic horticulture & farming sector in Leitrim, to the recent development of the Greenbox eco-tourism project and also to the high level of activity in the creative / artistic sector in the County. This renaissance-style bringing together of the arts, crafts and the economic, with the sustainable building community is developing the potential for new skills and creativity to emerge. It is an imaginative and to some extent experimental approach to training.

It is notable that one of the few active building sites in the country is at the Village in Cloughjordan where c.100 people are currently employed in building innovative houses in an innovative community.

Programmes to tackle youth unemployment should include a strong focus on the Green Economy, Environment, and Sustainable Development to provide a practical and realistic stepping stone to employment in the diverse parts of the sector that are engaging with these emerging and increasingly important underlying aspects of Ireland's development

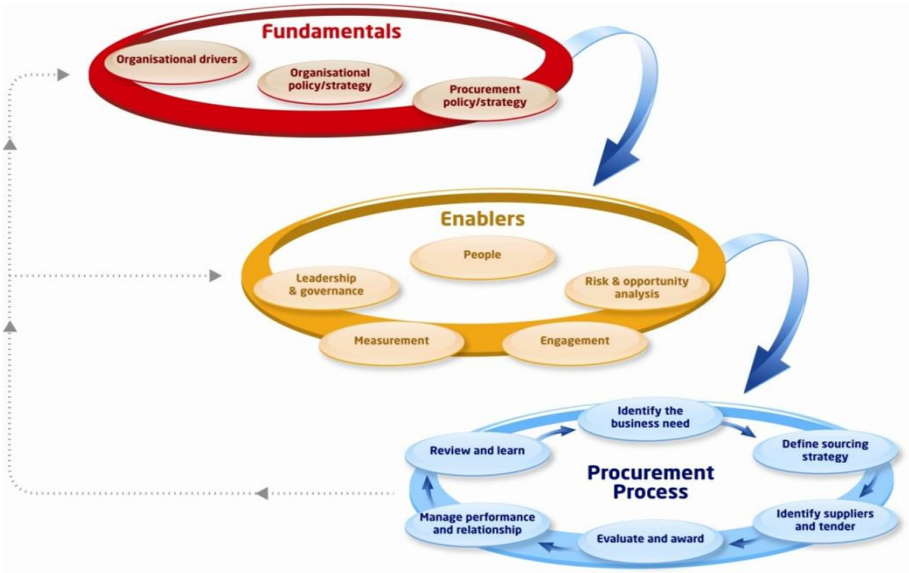
Recommendation: **Programmes to tackle youth unemployment should include a strong focus on the Green Economy, Environment, and Sustainable Development.**

Recommendation: **Support innovation and creativity in the training methodologies alongside the more traditional training courses**

54 http://www.ldco.ie/downloads/LIDC%20Application%20Final%20Version.pdf

2.5 Procurement

The world's first standard for sustainable procurement, BS 8903: Principles and Framework for Procuring Sustainably was launched in summer 2010[55].
BS 8903 provides guidance to any size and type of organisation on adopting and embedding sustainable procurement principles and practices. It covers all stages of the procurement process and is applicable across industry, public, private and third sector organisations.



BS 8903 sets out a comprehensive framework to help management with sustainable and economic development. By following these guidelines, it is possible to implement sustainable procurement processes across all supply chains. This British Standard also helps put the correct measures in place to test sustainability. What's more, all these principles apply to both private and public sector, although the public sector must also comply with the EU Procurement Directives.

The annual procurement budget of the Irish public sector is of the order of €15 billion. If buyers in the public sector consistently took environmental factors into account in their procurement decisions, it would provide huge leverage to "move the market" towards providing environmentally superior goods, services and works in a cost-effective way. This would enable Government and the wider public sector to continuously improve the environmental performance of their procurement activities, leading over time to significant benefits to the environment and to public health. It would also boost Ireland's competitiveness and job-creation by fostering eco-innovation among SMEs and the wider business community[56].

Recommendation: **Prioritise the proactive implementation of "Green Tenders – An Action Plan for Green Public Procurement.**

Recommendation: **Adopt BS 8903 - Principles and Framework for Procuring Sustainably - for all public bodies and promote its adoption by the private sector.**

55 http://www.actionsustainability.com/BS8903.aspx
56 http://www.environ.ie/en/Environment/SustainableDevelopment/GreenPublicProcurement/

2.6 Investment programmes

2.6.1 Objective assessment of all potential projects

The question of Employment Impact Assessment has already come up above in the context of taxation decisions. In July a "domestic infrastructure stimulus" was announced by the Government involving an investment of €2.25billion and a predicted 13,000 jobs.[57] The details of how this figure was calculated do not seem to be publicly available.

In general, smaller civil engineering projects have a double economic advantage over large projects:

- first, they are inherently more labour-intensive and less resource intensive (energy, cement, aggregates), and
- secondly, they are dispersed widely throughout the country, ensuring that the benefits of the economic stimulus are widely spread, instead of being localised at merely one or two locations.

Therefore, taking an instance we will come to more specifically below as an example, a programme of multiple small and medium-sized wastewater investments is far superior (as an economic stimulus and as a source of both direct and indirect employment) to 2 or 3 motorway projects.

This consideration seems not to have been taken into account in the recent stimulus decision. Therefore we would urge that the necessary analysis be carried out before such decisions are taken.

Recommendation: **Ensure that all major government investment programmes directed at job creation are based on an objective assessment of projects which could be included.**

2.6.1.1 Objective assessment of job creation potential

Recommendation: **Ensure that the assessment considers how many jobs are likely to be created by each of the measures, policies or projects being compared for inclusion.**

2.6.1.2 Sustainability Impact Assessment

Again, taking the example of the recent stimulus announcement, investment in motorways undermines our ability to meet our 2020 target for greenhouse gas emissions under the Effort-Sharing Decision.
Other investment decisions would have a positive impact on the environment. Investment in both conservation research and planning on the one hand and in on the ground conservation work on the other is vitally needed to meet our EU law obligations under Natura 2000. Similarly investment in wastewater treatment

57 http://www.merrionstreet.ie/index.php/2012/07/minister-howlin-announces-an-additional-e2-25-billion-domestic-infrastructure-stimulus-to-create-much-needed-jobs/?cat=12

infrastructure is essential to meet our obligations under the Water Framework Directive.

Recommendation: **Ensure that the assessment also considers the impact of the projects on sustainability indicators including compliance with EU law and meeting national emissions targets.**

2.6.1.3 Health Impact Assessment

For some elements of the green economy, the public health benefits (as well as the subsidiary benefits resulting from better public health, in terms of medical costs, productivity and education) are highly significant. The two clearest areas in which this is relevant are the thermal retrofit of the building stock[58] and the facilitation and encouragement of active modes of transport.[59] For both of these, actions to encourage the desired change already show positive economic returns without taking health into account, but the health benefits, when included, massively overshadow the other benefits.

Recommendation: **Ensure public health and knock-on benefits (reduced medical costs, better productivity /reduced absenteeism and better educational results) are included in the factors to be taken into account in deciding on expenditure and investment.**

2.6.1.4 Matching Funding

Facilitate drawing down of available funding (RDP and LIFE+ for example) where Ireland has failed to draw down in the past by providing a match funding pool and support by way of capacity to apply for funding resulting in employment (through advisory, management of Natura sites etc).

Recommendation: **Establish a fund to provide matching finance and support in making applications for drawing down a range of EU resources**

58 Institute of Public Health in Ireland, Response to Department of Communications, Energy and Natural Resources Consultation - National Energy Retrofit Programme, http://www.publichealth.ie/document/iph-response-department-communications-energy-and-natural-resources-consultation-national

59 Institute of Public Health in Ireland, Press release: IPH present on the health benefits of cycling at the 'Gender and Cycling Conference' http://www.publichealth.ie/press-release/iph-present-health-benefits-cycling-gender-and-cycling-conference

2.7 Sustainability in the Private Sector

There are increasing numbers of examples of businesses seeking to move towards sustainability in a fundamental and integrated fashion. Examples include Unilever's Sustainable Living Plan[60], Marks and Spencer's Plan A[61], and one of the most advanced, Interface's Mission Zero[62]. The challenge for the Government is how best to encourage other companies to move in the same direction. One useful tool in this area is the world's first standard for sustainable procurement, BS 8903: Principles and Framework for Procuring Sustainably was launched in summer 2010[63], which provides guidance to any size and type of organisation on adopting and embedding sustainable procurement principles and practices.

We suggest the strongest anchor on which to push for shifting company mind-set towards incorporating sustainability is around the whole area of integrated reporting. You may recall the push by the Corporate Social Reporting Convention, made of a number of partners including Aviva Investors, and the Global Reporting Initiative, for an integrated reporting clause in the final text for the Rio +20 conference.[64]

In Denmark over 1000 of the biggest companies must provide information about their CSR policies on a "comply or explain" basis in their annual financial reports.[65] This obligation is in a sense a compromise between "no obligation to report" and "obligatory reporting", and is one which we strongly recommend for consideration for the largest companies reporting in Ireland.

There is also an initiative developing in the UK called the Integrated Reporting Council.[66] This group are leading the development of a global framework for integrated reporting. Over 70 companies are testing the principles of integrated reporting in the corporate reporting cycle as part of their pilot program.

Recommendation: **Encourage the incorporation of sustainability considerations and analysis in private sector decision-making, such as new reporting requirements for limited liability companies.**

60 http://www.unilever.com/sustainable-living/
61 http://plana.marksandspencer.com/
62 http://www.interfaceflor.co.uk/web/sustainability/mission_zero
63 http://www.actionsustainability.com/BS8903.aspx
64 http://www.aviva.com/data/mediauploads/news/File/Towards%20a%20convention%20on%20corporate%20sustainability%20reporting%20at%20Rio+20.pdf
65 http://www.csrgov.dk/graphics/publikationer/CSR/CSR_and_Reporting_in_Denmark.pdf
66 http://www.theiirc.org/

2.8 Corporate Social Responsibility

Step up Corporate Social Responsibility to encourage business to play a bigger role in the areas of;

- Greening and biodiversity officers for landholdings
- Environmental education programmes
- Providing strategic resources including wildlife data etc to be used by communities, Local Authorities and business development opportunities (renewable energy etc)

Recommendation: **Encourage a stepping up of Corporate Social Responsibility**

2.9 Enforcement of Environmental Law

In the face of unfair illegal competition, green and clean businesses cannot compete. Where the illegality has to do with environmental standards, it damages the image of all producers; maintaining a credible green image is key to many green economy businesses in Ireland and proper enforcement is required to maintain that credible image.

Recommendation: **Proper enforcement of environmental law especially in fishing, quarrying, energy industries, agribusiness is essential.**

Recommendation: **Create 'Wildlife Crime Officers' managed through the EPA, NPWS and AN Garda Síochána to reduce infringements of wildlife legislation, with state solicitors advised to secure fines that support environmental NGOs and the Wildlife Crime corp.**

2.9 The Working Week

In the current situation where 14% of the workforce is unemployed, the case for reducing the standard working week to facilitate a better sharing of the available employment is very strong. In addition, the social, health and community benefits both of wider availability of employment and of reduced pressure on those in employment are considerable. There is also a strong environmental case that reduced working hours will reduce the pressure to consume experienced by those in employment and thereby facilitate the development of more sustainable patterns of production and consumption. The New Economics Foundation[67] published a report in 2010 arguing for a shorter working week. If the government gives an indication that it is open to the idea, the Environmental Pillar would be eager to engage in discussions with social partners, civil society and others.

Recommendation: **Reduce the working week to alleviate unemployment and reduce consumption pressure and associated environmental impacts.**

67 http://www.neweconomics.org/blog/2010/02/15/21-hours-a-new-norm-for-the-working-week

2.10 Cooperatives

The structure of choice for many community based activities is the cooperative, and yet the legislation ruling this sector is badly in need of updating, and it seems that the agencies responsible for local enterprise are unlikely to be able to effectively advise community groups in this regard[68]. The legislation on cooperatives leaves them at a distinct disadvantage in the market place compared to other enterprises.

Recommendation: **Update the legislation governing cooperatives to give a level playing field for all enterprises**

2.12. A Constitutional Right to a Clean and Healthy Environment

Apart from the need to incorporate this right into the Constitution for a range of other reasons, this would send a very clear message to the world that Ireland is serious about the protection of its biological resources.

Recommendation: **Include the Right to a Clean and Healthy Environment in the Terms of Reference for the Constitutional Convention.**

68 Carroll, B. (2010) An analysis of the co-operative sector in Ireland, International Society for Third Sector Research (ISTR) Volume VII Working Paper Series.

3.0 Sectoral Issues

The European Environment Bureau[69] prioritises 4 key Green Economy Sectors:

- Renewable Energies,
- Management of the Natura 2000 Network,
- Energy Savings in Buildings and
- Sustainable Transport.

But the following also need to be considered as key parts of the Irish green economy model:

- Wastewater treatment
- Tourism
- Agriculture
- Forestry
- Wildlife
- Landscape
- Marine

3.1 Energy

The current reliance of Ireland's economy almost exclusively on imported fossil fuels to provide the energy that it needs makes it nearly impossible to plan for a sustainable future for the country, unless a sea change occurs and quickly. This will involve Ireland being an enthusiastic driver of the Europe 2020 Strategy Flagship for a Resource Efficient Europe. In the energy sector this means huge potential savings to the Irish Economy that can be circulated in the domestic economy and create employment in Ireland.

In the transport sector the biggest job benefits from more fuel efficient cars arise as a result of substitute spending of oil import savings. Ireland should be supporting the development of EU strategies to move in this direction. It is likely that decisions on the "TEN-T Guidelines and the Connecting Europe Facility" will fall for decision during the Irish EU Presidency[70].

The German ministry of the environment commissioned a report in 2011, A New Growth Path for Europe[71], which suggested the EU should scrap the old 20 per cent target as too unambitious, and set itself a new target, to reduce CO2 emissions to 30 per cent below the 1990 level by 2020, and that it should accompany that new target with an EU-wide investment programme in co-generation of heat and power, insulating all older buildings, enhancing the power grid and building new wind

69 http://www.eeb.org/

70 http://www.transportenvironment.org/publications/ten-t-guidelines-and-connecting-europe-facility-recommendations-sustainable-transport

71 http://www.stakeholderforum.org/fileadmin/files/A_New_Growth_Path_for_Europe__Synthesis_Report%20(1).pdf

turbines. The report suggests this investment would increase the growth rate of the overall EU economy from a potential 2.2 per cent to 2.8 per cent. It could, the report claims, create an extra six million jobs in Europe[72].

Recommendation: **Push for higher targets for Green House Gas reductions in the EU.**

Domestic Energy Use Context

The 80% carbon emissions reduction needed can come from the following:

- 50%- improvements in physical infrastructure of buildings
- 20%- improvements in physical infrastructure of plants providing the energy
- 25%- behavioural change
- 5%- building more energy efficient facilities (new built) to replace existing ones

In 2009 the Institute of International and European Affairs published "Jobs, Growth and Reduced Energy Costs: Greenprint for a National Energy Efficiency Retrofit Programme". This report highlighted some very obvious but often ignored realities with regard to energy efficiency.

- Investing in energy efficiency, in most cases, saves far more over the lifetime of the investment than the initial installation cost. This is true across the economy, from the public sector, to private industry, to the residential sector.
- In the midst of an economic crisis a national energy efficiency retrofit programme for Ireland's housing stock offers the opportunity to create tens of thousands of jobs in the hard-hit construction sector, while addressing the profound challenges of energy security and climate change.
- Excluding the commercial sector the report estimated that close to 1.2 million homes in Ireland require an energy efficiency retrofit.
- The national programme would take an estimated 12-15 years (rather than 85 years at current levels of engagement and investment)
- The annual investment required for a successful national retrofit programme would be €1-1.5 billion
- The overall cost of the programme would be approximately €14.5 billion.

3.1.1 Pay as You Save

Energy savings in buildings are one of the largest areas of the green economy for the western European countries such as Ireland whose building stock is badly in need of improvement. The necessary retrofit will give good economic returns considered solely in terms of energy costs and excellent returns if public health and/or climate change mitigation obligations are taken into account. The obstacles to an effective thermal retrofit programme are significant, including information, awareness, financing and quality control.

72 John Bruton – Opinion Piece
http://www.irishtimes.com/newspaper/opinion/2012/0924/1224324323390.html

Pay As You Save, one of the key actions for the Green Economy in the Action Plan for Jobs is an essential response to addressing these obstacles. This will require a significant investment in scheme development and design as well as the necessary legislative changes to ensure that the financing provided will be low-risk and therefore less expensive.

Recommendation: **Develop and implement an effective Pay As You Save scheme.**

3.1.2 Home Retrofits

In the meantime, the thermal retrofit industry is contracting. This sector should be continuing to grow in the direction of the significant size required for the national retrofit effort. Instead, anecdotal reports from the sector suggest a reduction of 50% since the SEAI grants were cut last October. Those grant levels need to be restored (and in general, grants aimed at stimulating particular sectors need to be designed and managed in a long-term consistent fashion, in a manner which allows businesses to plan, as Germany did with solar feed-in tariffs.)

We have already made the point above that a property tax which includes the value of the building acts as a highly undesirable disincentive to improving the energy performance of buildings.

Recommendation: **Restore the grants for thermal retrofit to their previous levels.**

Community Employment Schemes in the Green Economy

Energy Action was established in the middle of the 1980s as an outcome from a community employment scheme.

To date Energy Action has retro fitted 31,000 homes to make them more energy efficient.

In addition another 30,000 homes have been retro fitted by Community Based Organisations throughout Ireland based on the Energy Action model. Many have received support and skills training from Energy Action. This is only a fraction of the housing stock, currently there are about 400,000 households in receipt of fuel allowance.

Energy Action initiated the first accredited skills training in Ireland for installers of insulation (originally London City & Guilds now FETAC). Since then they have pioneered several new accredited courses in the area of energy efficiency in buildings, creating many new jobs for trainers.

Studies have been carried out by Prof Owen Lewis of SEAI, showing that Community Based Organisations are the most cost effective means of delivering energy efficiency to this sector of the housing stock. Community Employment schemes with the training grants have been the main vehicle for this delivery.

The labour costs are only slightly above the amount the same people would receive on social welfare benefits, (without making any contribution to the wellbeing of the community). The numbers involved in the sector could be trebled with very little extra cost to the exchequer. (There were over 40,000 on CE before the “boom”, now reduced to 20,000)

Besides the practical benefit to the dwellings of the recipients, the reduced carbon emissions and the offsetting of imported fossil fuels, the lifting of the consequences of mass unemployment, such as depression, suicide and other health issues can have an enormous positive effective on society.
This can be replicated in other sectors, for example heritage and tourism.

3.1.3 Renewable Energy

It is not intended here to rehearse the many papers, policies and plans already covering renewable energy, but just to highlight one project with great potential. There is considerable scope for local biomass energy production particularly for space heating and electricity production using Combined Heat and Power (CHP) boilers, as demonstrated by the RASLRES project.[73] RASLRES's main aim is to increase the use and uptake of locally produced renewable bio-energy solutions in rural areas in the (Northern Periphery Programme) NPP region. The RASLRES pilot models will use different technologies and biomass fuels to support locally managed – and owned – supply systems and business models for producing and using renewable energy. This will be achieved with the development and implementation of 'MSMs' (targeted market stimulation models) for rural renewable energy biofuels. The potential of the models being developed here with European funding is to combine the growing of native hardwood trees, enhancing biodiversity, creating local employment both directly and indirectly, supporting innovation and providing local sustainable carbon neutral energy. This means local use of coppiced hardwoods in small scale low impact systems focussed on native species, to create biomass/firewood for local consumption.

Recommendation: **Promote closed cycle local Biomass projects nationally**

Recommendation: **Invest in decentralised provision of innovative power supplies from a wide range of sources to ensure greater energy security and thriving local economies.**

3.1.4 Anaerobic Digestion

Ireland has a large food-based economy ranging from production to manufacturing and as such, would have a large amount of bio-waste e.g. slurry and food waste.. The development of anaerobic digestion plants would address four areas of concern for the government: Requirement under Kyoto to reduce greenhouse emissions; Renewable Energy Directive (2009/28/EC; EU Landfill Directive (1999/31/EC; and the Water Framework Directive.

Recommendation: **Create a beneficial economic regime for the development of anaerobic digesters and increase the feed-in-tariffs in the current power purchase agreements to make it economically viable for electricity produced from anaerobic digesters to be sold onto the national grid.**

73 Regional Approaches to Stimulating Local Renewable Energy Solutions http://www.raslres.eu/

3.1.5 Exporting renewable energy

One of the largest economic opportunities in the country is to expand the export of renewable power from the Irish system to the UK and Continental European Market.

That project could be assisted by the commissioning of two new 1 GW HVDC interconnectors between Ireland and Britain and France. The interconnectors could be developed by Eirgrid in conjunction with National Grid in the UK and the French transmission system operator RTE. They could be financed by the European Investment Bank and by funding from the Connecting Europe facility under the soon to be agreed EU budget process and if the infrastructure was put through a priority planning process it should be possible for the interconnectors to be designed, built and operated before 2018 the end of this decade. The sale of power from Ireland to the UK would require a intergovernmental agreedment on the trading arrangements in relation to the carbon credit and market support mechanism and the Government would also have to insure that there is a return to both the state and to local communities where new wind farms are purpose built to serve such UK market demand. The market development might also require a review of the Single Electricity Market (SEM) trading arrangements to allow for greater integration of both the Irish and UK electricity markets with the North West European power exchange that is continuing to evolve. The interconnectors could connect to a range of private sector investments that are planned for the Irish midlands (Eg Mainstream power, Element Power etc) and the West coast (Spirit of Ireland) If we get such market and planning arrangements right we should be able to set on a long term course where significant of offshore renewable energy can in the longer term be exported to Europe. (10 GW in each of the subsequent decades should be feasible given developments in the technology.

Recommendation: **Develop two new HVDC interconnectors for the export of renewable power in public ownership with European financing.**

3.1.6 Solid Fuels

The difference between solid fuel regulations between the neighbouring jurisdictions is leading to negative impacts on air quality, disrupting legitimate business and providing an opportunity and incentive for illegal sales. Without a doubt such sales are also in the black economy in other respects also, particularly taxation.

The illegal solid fuel trade also competes with more sustainable fuels, undermining the transition to the green economy and employment in legitimate businesses. We recommend that the regulation of solid fuels be added to the agenda of the North South Ministerial Council and that harmonised rules be applied in both jurisdictions.

Recommendation: **Develop a North-South harmonisation of regulations regarding solid fuels**

3.1.7 Taxation of fossil fuel resource use

The exploitation of Ireland's fossil fuel resources should only be done as a measure of last resort, and then prioritising the least environmentally harmful reserves first. Whilst exploitation of these resources will directly employ very few people, the impacts on the environment and in particular on climate change would be severe. Where these resources are to be exploited then they should be subjected to a substantial tax, with a percentage ring-fenced for use in the promotion of renewables and energy retrofits.

Recommendation: **Establish a ring-fenced tax on all fossil fuel exploitation to be used to drive the move to renewable energy production, efficiencies and home energy retrofits**

3.2 Water

3.2.1 Wastewater Infrastructure

The EPA's 2012 Environmental Report states that 46% of the Waste Water Treatment plants in operation still fail to meet the Government Guidelines[74]. It writes:

> *57 waste water works are causing pollution in rivers or bathing waters. 11 large urban areas do not meet the Urban Waste Water Treatment Directive (UWWTD) requirement to have secondary treatment in place. These include, for example, Bray and Ringaskiddy, where the provision of treatment is now 10 years overdue; Clifden, where the old plant is impacting on bathing water; and Moville, where discharges are causing serious pollution to the River Bredagh. Eight urban areas do not meet the UWWTD requirement to provide nutrient reduction in addition to secondary treatment for discharges to sensitive water areas by specified dates. These areas include the cities of Dublin, Cork and Kilkenny.*

This list does not include the many smaller plants around the country that require 'certificates' rather that licenses. As pointed out above, addressing waste water treatment plants would mean contracts for building across Ireland, urban and rural, and would filter down into the local economies in a way that road projects do not.

Recommendation: **Invest in wastewater treatment infrastructure sufficient to meet our EU law obligations and bring our waterways and water abstraction sources to good status.**

3.2. Water Conservation

As with home retrofitting there is great potential for employment in the development of water conservation measures that are likely to be stimulated once water charges are finally introduced. Collection of rainwater and reuse of grey water as well as the introduction of devices to reduce the volume of expensively produced fresh water, which is flushed down toilets, are all areas that need attention. Support here would stimulate localised employment potential.

Recommendation: **Stimulate the water conservation industry.**

74 EPA, 2012, *Ireland's Environment An Assessment 2012,* http://www.epa.ie/ebooks/soe2012/

3.3 Transport

3.3.1 Rail Freight

The Low Carbon Freight Dividend project[75] in Britain, run with ERDF support, gives grants to support small and medium sized businesses in switching their freight from truck to train. Rail freight as well as public transport should be the recipients of increased support. Similar initiatives should be considered here.

Recommendation: **Introduce measures to encourage Rail Freight.**

3.3.2 Investment in Rail

Irish Rail has presented an investment plan to Government. It requires c. €300m to deliver. This must be progressed as soon as possible.
A study of a 220km/h electrified rail network from Belfast to Limerick and Cork via Dublin must be undertaken. This would draw down via high levels of European finance as it is a cross-border project. A national rail link to Dublin Airport would be completed in Dublin as part of the project. It would reduce over-reliance on imported fossil fuel energy in transport and cut emissions. It would also be a significant employment generator.

Recommendation: **Invest in Rail Electrification**

3.3.3 Tourism-oriented high quality cycle routes

There is an increasing body of evidence documenting the positive economic benefits of greenways and the cycling and walking tourists they attract.[76] [77] A significant conference is being held in September.[78] To the international research we can now add the striking findings of a report by Fitzpatrick's commissioned by Fáilte Ireland into the Mayo Greenway which estimated direct expenditure in the local economy associated with the Greenway of €7million/yr.[79] This can be compared to the cost of developing the Greenway, put at €5million, giving a high rate of return on the investment of over 140% in year one.

The Great Western Greenway should be replicated at least ten-fold over the next 3 to 5 years, along disused railways, canal paths, by redesign of rural roads and by new greenway paths along significant routes, to produce long-distance routes such as the magnificent 500km long Shannon-Erne route.

As referred to above, these are smaller civil engineering projects, with higher levels of employment per euro invested and whose benefits will be dispersed across the

75 www.lcfd.co.uk
76.http://www.sustrans.org.uk/assets/files/rmu/Economic%20Impact%20of%20Cycle%20Tourism%20NE.pdf
77.http://www.sustrans.org.uk/assets/files/Wales%20General/CTT%20Report%20final_with_pics(1).pdf
78 http://www.ecf.com/cycletourismconference/
79 http://www.failteireland.ie/Best-Practice-Case-Studies/Category-2/The-Mayo-Greenway.aspx

country. Similarly the economic benefit of the tourist expenditure is widely dispersed giving a considerable social as well as economic benefit to the area.

A recent example of initiative in this area is Waterford City and Waterford County Councils submitted parallel requests for funding for 10k of cycling infrastructure along the R675 between Waterford City and Tramore, and they have received E600k from the EU between them to complete the project.

Recommendation: **Develop a network of tourism-oriented high quality cycle routes to build on the success of the Great Western Greenway and similar routes throughout Europe.**

3.3.4 Enhanced bus networks in the Gateway Cities

Progress on Greenways, or Quality Bus Corridor projects in Cork, Limerick, Galway and Waterford remains slow. Such projects provide very high levels of employment per euro invested.

Recommendation: **Focus on the development of enhanced bus networks in Gateway Cities**

3.3.5 Regulatory reform

Regulatory reform can unlock a great of job opportunities. Currently, the situation in and between cities regarding bus transport is not clear. We are slowly moving to a situation where there is a regulator (National Transport Authority, for example), and it procures all the services, be they provided by semi-state companies or private operators. The quicker a clear workable system is put in place the more jobs will be created

Recommendation: Prioritise regulatory reform for the transport sector

3.3.6 Capital investment proposals

Three major road proposals were announced by the Government recently as part of the stimulus package. From both an economic and environmental point of view these are poor choices for capital investments, which risk further undermining public transport and further locking Ireland into in a high emissions transport system.

We understand that the proposal to make significant capital investments in new roads is particularly influenced by the fact that PPPs will enable such investments to be made “off balance sheet”. However, the cost will ultimately be borne by the public whatever the accounting rules used. As we have pointed out, public transport and cycling routes need significant capital investment. We are unaware of any reason that the the same financing approach should not be used for these projects.

Recommendation: **Drop the new major road proposals and use the capital to support public transport and cycling investments.**

3.4 Nature Conservation and Protecting Natural Capital[80]

A recent study in Europe has examined the job creation potential within the Green Economy in an effort to inform the next European budget 2014 – 2020[81].
Job creation potential per billion invested in conservation/Natura 2000 sector is 29,000 jobs. This compares favourably with CAP at a maximum of 6,000 jobs, and the Cohesion Policy at 16,800 jobs.
Even within the Green Sector, Sustainable Transport returned 21,500 jobs, Energy Savings in Buildings 25,900 jobs, with only Renewable Energies returning a higher (52,700 jobs) figure per billion.
A specific example of job creation within conservation lies within the Natura2000 network.[82] These sites, of which Ireland has 555, already provide the economy with measureable returns in the form of ecosystem services and natural capital.
"Rangers" could be employed on these sites, similar to the rangers employed on National Trust sites in Northern Ireland. This would provide a job for every constituency in the country, and could be financed through European funding (see below).
Pro-active management of these sites will have multiple benefits, both short term and long term.

Short Term Benefits

- Job creation within the training sector:
  - Training would need to be provided for rangers.
- Job creation in terms of the ranger positions:
  - Rangers could be working on the ground with immediate effect once selected.
- Leverage funding from EU
  - Funding for this investment in job creation could be leveraged from EU funding sources such as the LIFE+ funding programme. Ireland has had a 100% success rate in drawing funds from this source. The obstacle to accessing more funds from LIFE+ is the scale of the projects. The funding line is most suitable for large state supported initiatives which can meet the matching funding requirement.
    Other funds utilised by other EU member states include The Fisheries Fund, the Structural Funds and EAFRD.
- Pilot Project opportunity
  - A pilot project could be established to enable a live cost/benefit analysis associated with rolling out the policy nationwide. This may involve a coordinator and up to five rangers working on different habitats and sites.

[80] http://ec.europa.eu/environment/nature/natura2000/financing/docs/financing_natura2000.pdf
81 Investing for the future: More Jobs out of a greener EU Budget
https://www.google.ie/search?q=Investing+for+the+future%3AMore+Jobs+out+of+a+greener+EU+Budget%2C+EEB%2C+Birdlife+International%2C+Friend+of+the+Earth+Europe%2C+WWF%2C+Transport+and+Environment%2C+CEE&sugexp=chrome,mod=19&sourceid=chrome&ie=UTF-8
82 Costs and Socio Economic Benefits associated with Natura 2000 Network
http://ec.europa.eu/environment/nature/natura2000/financing/docs/natura2000_costs_benefits.pdf

The pilot project would identify the specifics of the training needs, and set realistic costing for the programme, ensuring an accurate and resilient application for the leveraged funding.

It will also provide for an instantly measureable outcome.

Medium to Long Term Benefits

- The creation of long term sustainable jobs in the sector.
- The creation of long term economic resilience in the local communities, in terms of ancillary job creation, and support of the local economy.
- Professionalization of the sector, and a move away from the current model which often sees social welfare recipients carrying out voluntary community work on Natura2000 sites. It would be prudent to subsidise this work and create a job, with all the knock on benefits to the local economy and to the state, as opposed to supporting this work through the social welfare system.
- Increased tourism to sites due to protection and enhancement of the Natura2000 network. There are between 1.2 and 2.2 billion visitors to Natura2000 sites each year throughout Europe. Visitor expenditure from visits is estimated to be between €50 and €85 million euro.
- Improvement and reinforcement of our international image as the Emerald Isle, a green country with world class natural landscapes and habitats, as promoted by Bord Fáilte. These jobs would help establish Ireland as the go-to destination for holidays involving sport fishing, cycle tours, walking, amongst others.
- Protection of ecosystem services leading to multiple benefits, cleaner groundwater, beaches, rivers, reduced road damage from flash flooding amongst others.
- The savings in the associated costs including compensation and repair from the above, flooding et cetera.
- Improved health and welfare of local communities, through an increased awareness of the value of their local natural resources, and an increased sense of ownership over their natural capital. Nationally walking groups are one of the fastest growing community activity groups and they could avail of the network of well-maintained sites. Recreational benefits of Natura 2000 sites in total are valued at between €5 and €9 billion per annum.
- Reduction in cases being brought to the European Court of Justice for breaches of EU regulations including Habitats, Birds and Water Frameworks Directive.
- There are opportunities for R&D on all Natura 2000 sites, developing cost benefit analysis tools to assist in planning in terms of ecosystem services, becoming a world leader in the integration of holistic assessments of natural capital as part of developing a sustainable basis for economic recovery as referenced in the recently published Our Sustainable Future.

OECD Recommendations 2010
– speed up preparation of *detailed, time-bound management plans* for Natura 2000 sites and natural heritage areas, and implement them; – improve consistency of the *Planning and Development Act* with the protection and enhancement of biodiversity outside protected areas (e.g. by establishing "green corridors" linking nationally and locally important biodiversity areas); – improve integration of biodiversity concerns in *sectoral policies and projects*, including through rigorous implementation of SEA and EIA procedures; – improve the match between spending on *agri-environmental measures* and ecological needs, e.g. by placing more emphasis on measures in or near Natura 2000 sites; – continue efforts to adopt, resource and implement an *island-wide strategy on invasive alien species*.

Recommendation: **Include nature conservation within the green economy and in economic stimulus packages.**

Recommendation: **Ensure R&D Funds for strategic collection of marine and terrestrial wildlife data. This will employ consultants in small to medium businesses and also help to inform sectoral decision-making in areas of further employment (wind energy, use of marine resources etc)**

Article 17 reporting for Ireland by NWPS on condition of wildlife by way of example OECD Ireland's Review environmental performance (November 2009) identified nature protection as the poor cousin in environmental policy in Ireland

Recommendation: **Secure our natural capital through funding nature conservation work, 'accounting for nature' sooner rather than later in policy development**[83] **and in decision-making as a matter of urgency and link this to performance indicators that go 'beyond GDP'**[84]**.**

3.4.1 Life+ Funding

Significant EU funding is available for practical conservation work related especially to Natura 2000 sites and species. Ireland receives less than its share of this funding because primarily of the level of commitment required to make a good application. It is estimated that Ireland receives c.35% of the funding available to it. The level of effort required to develop the specialist understanding of the application process and

83 www.teebweb.org

84 www.beyond-gdp.eu Communication from the Commission to the Council and the European Parliament COM (2009)433

to put together a detailed application is something which many organisations in Ireland simply cannot find the resources for. We suggest that the establishment of a specialised unit which would seek out, encourage and assist potential LIFE+ applicants would pay its way in terms of EU funding eventually finding its way to Ireland. Case studies presenting the importance of this fund are presented in Appendix 1.

Recommendation: **Provide assistance to those interested in putting together LIFE+ projects.**

Recommendation: **Lobby for the increase of LIFE+ to 1% of the EU budget.**

3.5 Sustainable Agriculture

3.5.1 Bioeconomy Strategy[85]

This new EU strategy should be opened up to intensive public debate in order that the maximum green economy benefit can be extracted from its objectives of increasing employment through cyclical rather than linear thinking in the use of biological resources such as agricultural, tree cover and marine.

Recommendation: **Prioritise a national debate on the EU Bioeconomy Strategy**

3.5.2 Wild Food

There is significant potential in the unrecognised wild food sector, including food harvested from coasts and countryside. These foods command premium prices and have the potential to be of significant economic benefit to rural areas once access to markets is established. However, as the potential is realised, overexploitation is a significant risk. On the other hand State services such as quality control, certification, education and marketing will add to the value of the food produced and protect the businesses from risks. We recommend that legal and policy framework is developed which is capable of adapting to the various issues which are likely to arise.

Recommendation: **Develop wild food policy framework to support wild food sector.**

3.5.3 Organic Agriculture and Horticulture

Avoiding the use of chemicals intrinsically requires a higher human input and this will translate into jobs based on a massive EU market, and premiums for organic produce. At present much of our fruit and vegetables are imported, including potatoes. Horticulture is generally labour intensive.

Recommendation: **Support an accelerated move towards organic farming and organic horticulture.**

3.5.3.1 Specialist horticulture

High cost low input organic horticultural products such as herbs, garlic, and cut flowers are largely imported, and could easily be grown here.

Horticulture and urban regeneration can be combined as in the zero-carbon Chicago project, The Plant[86].

85 Innovating for Sustainable Growth: A Bioeconomy for Europe
http://ec.europa.eu/research/bioeconomy/pdf/201202_innovating_sustainable_growth.pdf
86 http://www.plantchicago.com/about/

What is The Plant? A Farm for the Future

From its beginnings as a 9,350m^2 meatpacking facility, The Plant is being repurposed into a net-zero energy vertical farm and food business operation. A complex and highly interrelated system, one-third of The Plant will hold aquaponic growing systems and the other two-thirds will incubate sustainable food businesses by offering low rent, low energy costs, and (eventually) a licensed shared kitchen. The Plant will create 125 jobs in Chicago's economically distressed Back of the Yards neighbourhood – but, remarkably, these jobs will require no fossil fuel use. Instead, The Plant will install a renewable energy system that will eventually divert over 10,000 tons of food waste from landfills each year to meet all of its heat and power needs

Recommendation: **Support the development of specialist and niche horticulture**

3.5.4 Greening of the CAP

Supporting farmers through a greener common agriculture policy including targeted agri-environment measures delivering benefits for wildlife and people by an increased proportion of Pillar 2 funding (to 50%), and greening Pillar I (including EFAs for Irish grasslands, clarifying grassland definitions)[87]

Recommendation: **Support the Greening of Pillar 1 of the CAP and increasing Pillar 2 to 50% of the CAP budget.**

87 CAP Reform Common Briefing of BirdLife Europe, the European Environmental Bureau, European Forum for Nature Conservation and Pastoralism and WWF (January 2012)

3.6 Tree Cover

Tree Cover[88] can contribute to rural development through healthy jobs with competitive incomes, while also offering wider society real benefits in terms of human health, recreation, tourism or other non-wood forest products and services as well as providing habitats for plants and animals, and protecting water and soil. Moreover, forests and the forest sector in general provide a great opportunity for moving the Ireland towards a green bio-based economy.

An emphasis must be placed on the protection of our native genetic woodland base, including action to preserve native genetic stocks with view to further propagation and cataloguing. Promoting its use through investment and educational outreach to landowners, developers and public authorities will support a thriving native nursery industry

Recommendation: **Protect and promote the genetics of native woodlands**

Recommendation: **Set as a policy goal the "long-term multifunctional and sustainable forestry and innovative forest sector that fulfils present and future social, economic and environmental needs, and supports forest-related livelihoods"[89]**

3.6.1 Forest Biomass

The potential of biomass for supplying local energy demands has been demonstrated effectively in other countries such as Austria[90] and recognised as applicable to Ireland for some time. However the vital work of building critical mass for viable local economic networks to develop has only recently started. Particularly important in this regard is the RASLRES project.[91] Initial indications are that the project is exceeding expectations and that the time is ripe for significant transfer to biomass to meet local energy needs.

We need to use RASLRES as a pilot project and in particular make any changes to energy regulation structures and policies which are required to enable and facilitate localisation of energy. This should focus on local use of coppiced hardwoods in small scale low impact systems focussed on native species, to create biomass/firewood for local consumption.

Recommendation: **Develop forest biomass based enterprises in particular local energy supply.**

3.6.2 Wood-fibre Insulation

The most sustainable forms of insulation are those made from biomass, with wood fibre panels being the key to retrofitting buildings with low embedded energy and

88 http://environmentalpillar.ie/files/2010/12/Environmental-Pillar-Tree-Cover-Policy-Nov-2010-3.pdf

89 Report to the Standing Forestry Committee by the Standing Forestry Committee ad hoc Working Group VII contributing to the development of a new EU Forest Strategy http://ec.europa.eu/agriculture/fore/publi/sfc_wg7_2012_summ-and-recommend_en.pdf

90 Douthwaite, Richard, 2006, From Recession to Renewables, http://www.feasta.org/2006/11/09/from-recession-to-renewables/

91 www.raslres.eu

emissions. Currently the significant quantity of wood processing in Ireland produces fibreboard and similar materials mainly for export. Meanwhile polystyrene, made from fossil fuels, is the dominant insulation material. The opportunity to supply wood fibre insulation from Ireland to both the Irish and British markets should be promoted.
Recommendation: **Develop wood-fibre insulation manufacturing to meet Irish and UK demand for insulation as our housing stock is retrofitted.**

3.6.3 Agroforestry

Agroforestry is a system of land management that has great potential to improve food and energy security, whilst also improving the biodiversity of farmlands.
The All-Ireland Agroforestry Initiative (AIAI), AIAI with the support of Teagasc, IOFGA and the Agri-Food and Biosciences Institute (AFBI) Northern Ireland is actively looking for suitable farms in different parts of the country where different agroforestry systems could be established and used as templates and training facilities. It is planned to identify suitable farms within the next few months and draw up outline management plans for the projects which ideally should be put into practice at the start of 2013 if resources are made available.
Recommendation: **Support agroforestry pilots**

3.7 Marine

3.7.1 Redirect fuel subsidy to sustainable low-carbon fishing

Currently a fishing fleet with less efficient engines is using more and more fuel seeking fewer fish over longer distances. The fuel subsidies that are received support this high level of fishing effort for low returns and with devastating consequences on fish stocks. We recommend that over three years, this fuel subsidy be phased out and the money used to support the installation of more efficient energy systems on boats and for the branding and certification needed for sustainable fishing based on low and renewable energy.

Recommendation: **Redirect fuel subsidy to transition package on sustainable low-carbon fishing with labelling and marketing support.**

3.7.2 Conservation of fish stocks to promote a sustainable fishing industry

Recommendation: **Ensure access to fish resources to those who fish in the most socially and environmentally responsible ways and adhering to scientific advice – securing healthy fish stock and hence supporting fishing communities and associated jobs into the future.**[92] [93]

3.7.2.1 Marine Protected Areas

See box page 21

Recommendation: **Establish Marine Protected Areas in 20% of Irish Waters**

3.7.2.2 Jobs in the Coastal Marine Area

Example: SEA BASS:

Irish law and public information are exemplary.

Sea bass *Dicentrarchus labrax.* ICES research suggests there are 6 or 7 stocks of sea bass and Ireland has a unique stock. This is a very slow growing fish which has young which stay inshore in estuaries like Wexford harbour for shelter and food. When the tide is in, the young have been seen swimming right up into Spartina grass for feeds on crab and other animals and shelter from bigger fish and birds.

Ireland has exemplary protection in law, with fishing restricted in **time** - closed during the breeding season; **method** – only rods, which means under sized fish can be returned to the sea quickly and **amount** – only 2 in 24 hours per person. This protection is well publicised in multilingual shore notices. Visitors comment positively on this Irish initiative. The protection is paying off as bass numbers have increased over the last 4 years.

92 New Economics Foundation quantifies potential jobs and job losses http://ocean2012.eu/publications/60-lost-at-sea-2-7-billion , http://www.neweconomics.org/node/1968

93 Public aid for sustainable fisheries NGO Briefing for MEPs (March 2012)

Further protection measures which aid fish and tourism are being proposed by Inland Fisheries Ireland (IFI). This includes reducing landings to one fish and return of sea bass above a maximum size.

Economic and Social Gain: The recreational sea bass fishery is attracting fishing tourism and strengthens our green image. Those who come stay in local hotels and B&Bs. Angling shops, restaurants and others in the local tourism industry benefit.

Environmental Gain: Our policy and implementation thereof lead by IFI is set to bring a slow growing fish species which is here for all its life stages into good conservation status, while still allowing some take, most is catch and release. This is a great achievement and supports many other ecosystem services.

Opportunity: To build on this strength and market the inshore wild sea bass and the controls backed by coastal communities. Local marine festivals highlighting the presence and protection of nursery areas (e.g. Tramore back strand), the first bass caught after the closed season, the run up the coast, art work akin to the Boston lobster marketing.

Threats: include: (i) the opening of commercial sea bass fishing which is less selective, takes more and could reduce stocks right down v fast which then destroys the opportunities, (ii) reduction in law enforcement so that wild bass is caught commercially but on the quiet, leaking into the restaurant trade and undermining the system and image and (iii) inadequate spatial planning and information to ensure all life stages are protected. Coastal aquaculture and recreation needs to be careful sited to avoid damaging nursery and feeding areas.

Recommendation: **Highlight, disseminate and further develop the areas where Ireland is truly a leader in the Green Economy – e.g. Sea Bass**

3.7.2.3 Back real CFP reform and apply scientific advice when deciding on TACs and Quotas.

Example: Mackerel:

Tackling Mackerel Overfishing

The Green Economy Group are concerned that the fundamental issue of mackerel overfishing has been missed in the current EU, Norway and Iceland, Faroe Island's impasse. The last available annual landing figures from the North East Atlantic recorded 862,000 tons of mackerel (2010). The ICES (International Council for the Exploration of the Sea) advice was to land no more than 586,000 t. Almost 300 000 tons – that is millions of more fish were taken than best available scientific advice!

The Green Economy Group calls for ICES scientific advice to be strictly adhered to in this year's Fisheries Council negotiations to halt the overfishing of stocks.

Further Issues:

- Quota distribution between countries

Mackerel are displacing north, whether in response to climate and/or other changes in their environment. Larger quantities are available in the vicinity of the Faeroes and Iceland than was hitherto the case. They are not the only stocks moving north as our oceans warm. Southern species are also coming to our Irish waters. Some readjustment of quota allocation between countries will have to be negotiated. In the meantime, it is vital not to jeopardise the stock.

- Discards

Only a fraction of the fish caught is landed. The tons of mackerel discarded as undersized or caught as by-catch in other fisheries varies hugely depending on location, time, fishing and sorting methods. So to maximize catch which can be landed and minimize damage and discards, the fisheries must be more carefully informed by scientific advice and controlled in the interest of the fish stocks and fishing communities.
When considering quota allocation within Ireland, the most sustainable fishing methods should be clearly identified and be used as a top criterion for securing quota.

Recommendation: **Adhere strictly to ICES scientific advice in this year's Fisheries Council negotiations to halt the overfishing of stocks.**

Recommendation: **Prioritise the green securement of our marine and coastal ecosystems and their services including the natural defenses against climate change impacts.** This wide ranging ask includes recommendations on Natura 2000 site protection and management as well as providing incentives for flood plain maintenance and habitat restoration.

Recommendation: **Build a state of the art artisan shore sea food and product industry**, targeting the areas where at present we export the raw product as a commodity, with purification, processing, packing and marketing jobs abroad – from bottom mussels to lobster. Nothing should be landed to just leave this state. The jobs are in wise use of these resources, rather than facilitating other countries. Ninety six percent of our lobsters are exported straight from boat to continent with foreign buyers coming over and waiting on the shore. Our take is near zero. The exact opposite is happing in Boston Harbour. We need Boston methods modified for our country.

Recommendation: **Halt the highest impact wild fisheries and aquaculture in and around Natura 2000 sites now**. Example large scale mussel bottom fishing

Recommendation: **Strengthen the research in the marine environment – not only in the welcome areas of green renewable energy etc. as flagged by government, but also in the inshore and coastal areas for both conservation and small scale multi use, where citizen science element empowers and informed coastal communities.**

Recommendation: **Create green Jobs through the timely, innovative and participatory implementation of marine law: the Marine Directive being the most urgent legislation to address.** Elements which would bring most immediate green jobs include: Marine and coastal Natura 2000 site managers, observers on boats, an environmental officer in every port, harbour waste management, boat environmental audit scheme. The above would create jobs and ensure we comply with EU law where presently we fail or struggle.

Recommendation: **Following the implementation of the above there would be a need for training to shift the process of reform up a gear.** Training and in-service training is needed to accomplish a shift and is also a potential niche market which we could target once the above points are beginning to bear fruit. Locations where sustainable practice and high environmental standards are achieved, can be used as the field demo sites, which further supports our green image. As we teach through English can be provide for foreign students.

3.8 Waste

Globally electronic waste represents a $130 billion opportunity. Mobile phones contain more gold than the ore dug out of mines.[94] Rare earths are as their name implies rare, and are only to be found in certain parts of the planet, where their export may be restricted, or the location is one of continuing wars and civil strife. These rare earths are essential to the high tech tools we rely on for our clean-tech and other industries.
The collection for the recycling of Waste Electronic and Electrical Equipment (WEEE) is very important and should be the first priority for WEEE. The government should focus on methods to increase the repair and reuse of various types of WEEE, including computers, printers, copying machines, appliances and other types of electronics. This focus will not only reduce energy and resource usage, but it will also encourage the development of new businesses and jobs.

Recommendation: **Develop closed loop policies for all materials streams, with labour intensive resource mining and recycling as a priority.**

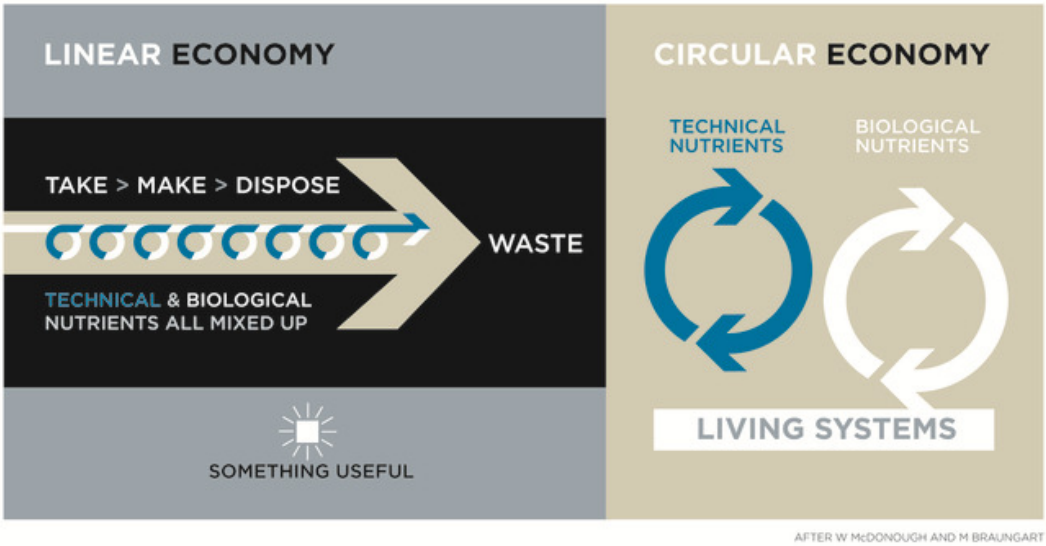


Figure 5: Contrasting linear and circular economies

Recommendation: **Promote the development of anaerobic digestion of waste streams at community level to deliver combined heat and power and to recycle nutrients to the soils from whence they came.**

Along with a tax on all one way packaging the government should support the introduction of a deposit-and-refund scheme for recyclable containers, including glass bottles, plastic bottles, aluminium cans and notes that the EU is at present conducting a feasibility study of an EU-wide refund system for metal beverage cans.[95] Ireland currently only recycles just above 50% of our aluminium cans, which

94 http://www.ellenmacarthurfoundation.org/circular-economy/circular-economy
95 http://ec.europa.eu/environment/waste/packaging/cans/intro.htm

is one of the most recyclable products. If a deposit/refund scheme were in place, up to 97% could be recovered (amount recovered in the State of Michigan). Many cans are lost in the waste stream because many cans are bought while away from home. Most individuals do not keep the cans till they reach a recycling bank. However, if there were a deposit of around 10 cents on each can, people would either keep the can, return it to a local shop or organisations will collect cans for fundraising causes.

Recommendation: **Introduce deposit-and-refund schemes on all recyclable food and drinks containers.**

1 July 2010 is the date the Food Waste Regulations (SI 508 of 2009) entered into force in Ireland.
The Regulations require major producers of food waste to source segregate food waste, ensure that it is not mixed with other waste and make it available for a brown bin collection service where it is recycled in a food waste recycling plant (e.g. composting plant or anaerobic digestor). Alternatively, waste producers can bring the food waste directly to a food waste recycling plant; or the food waste can be treated by composting it on the premises where it is generated.
It is estimated that there are at least 250,000 tonnes of food waste disposed of by commercial businesses in Ireland each year[96], as well as large volumes of food waste generated by individuals throughout the country. While not all of this is reusable, it is estimated that at least 60% of food waste is avoidable.[97]

Recommendation: **Prioritise the implementation of the Food waste regulations of 2009 and to investigate the use of edible foods discarded as waste.**

96 National Waste Database 2011
97 http://www.wrap.org.uk/content/facts-and-figures

3.9 Tourism

Globally, tourism is responsible for c.5% of greenhouse gas production[98]. Sustainable Tourism creates more employment in the local economy[99]
The main tourism asset in Ireland is the environment and for the most part in rural areas, Irish tourism does not display the hallmarks of mass tourism. With more and more people living in urban areas all around the world, the appeal of Ireland's rural and green proposition is likely to increase in response to a greater desire to 'get away from it all' and reconnect with a more natural rhythm and pace of life.

Recent tangible examples of relatively low cost investment reaping rich rewards include the Great Western Greenway in Mayo, Lough Key Forest Park in Roscommon, the Tralee Bay Wetlands Centre. The Great Western Greenway in Mayo is one of the best examples of sustainable tourism growth in Ireland in recent times. An investment of €4 million has returned c.€7 million to the local economy in one year. In a recent economic impact study 30 businesses have indicated that the Greenway has had some impact in either creating or sustaining employment in their enterprises. There has been a fairly balanced mix of full-time and part-time positions, though the bulk of new jobs created have tended to be seasonal rather than year round. When expressed as full-time equivalents (FTEs), the figures suggest that about 38 new FTE jobs have been created, with a further 56 existing FTE jobs sustained. Therefore, the Greenway appears to be playing a positive economic role in terms of employment, not only by creating new jobs but also, in a challenging economic climate, by protecting existing jobs that otherwise might be lost.

The ripple effects of green tourism investments can be seen in the Burren Ecotourism Network, a pilot project supported by Fáilte Ireland, Burren Connect, Clare County Council and Shannon Development. This project brings together 18 businesses, with another 20 about to complete training, many of whom may not traditionally have been involved in tourism in the area. Working together these businesses have now developed a number of ecotourism packages to offer to visitors in the Burren, ranging from farm tours/ walks, to food experiences, learn-to experiences etc. Businesses involved in the network range from farms, the Burren Smokehouse, education and painting centres, etc, as well as the more traditional tourism businesses such as accommodation and transport providers.

Recommendation: **Provide support for green tourism projects that enable local communities and businesses, including farmers to diversify and create more sustainable local economies**

3.9.1 Expansion of CE and Tús Schemes

Blennerville Windmill[100] now provides direct and indirect employment in the tourist season for many local people, but this attraction was developed almost entirely by CE schemes.

98 Does not include non-CO2 emissions and other impacts: Simpson, M. and Gladin, L. (2008) *Presentation: Climate Change and Tourism: Impacts, Adaptation, Mitigation and Global Challenges*
99 The Global Sustainable Tourism Criteria www.sustainabletourismcriteria.org

Thatched Cottages are part of our heritage, and yet they are in decline. The development of the complete cycle of reed growing to thatching and all the associated skills would enhance the tourist project whilst re-establishing a native, local and sustainable industry.

Recommendation: **Massively expand CE schemes and Tús scheme in order to benefit built and natural heritage and with follow on tourism benefits.**

3.9.2 Wildlife Tourism

Pump prime niche tourism with wildlife and its link to cultural landscapes as a quality offering supporting local nature reserves as attractions for tourism with spin off for local communities. For example the largest participant sport in the U.S. is bird-watching with 68 million participants[101]!

Recommendation: **Pump prime niche tourism with wildlife as a quality offering supporting local nature reserves as attractions for tourism with spin off for local communities.**

3.9.3 Open up the countryside to walking

Legislation to protect farmers and other landholders, whilst opening up the landscape to walkers would do much to promote sustainable tourism in the remote areas most in need of tourist activity.

Recommendation: Legislate for a basic right to roam to open up Ireland for walking.

3.10 Leader Funding

3.10.1 Realignment of Leader Spending

Recommendation: **Include screening for environmental sustainability and job creation in the green economy in the pre-approval project evaluation by Leader Companies (Integrated Local development Companies).**

100 http://www.discoverireland.ie/Arts-Culture-Heritage/blennerville-windmill/15650
101 http://www.srs.fs.usda.gov/trends/Nsre/Rnd1t13weightrpt.pdf

3.11 Innovation

3.11.1 Clean-tech Clusters

The Green Way[102] is a Cleantech cluster organisation in Dublin. It was founded in 2010 when a number of key regional stakeholders decided to collaborate in order to encourage green economic growth through the stimulation of the Cleantech sector in Dublin. The term Cleantech encompasses all industries and companies which are involved in sustainable development, eco-innovation (products, services, processes) and resource efficiency. The Green Way is another model of a community at a high level working together. The Green Way aims to support the transformation of the Irish economy into a sustainable green economy.

Recommendation: **Use the Green Way as a prototype to promote similar Cleantech clusters around the larger urban centres**

3.11.2 Third Level Campuses as Living Laboratories for the Green Economy and a Sustainable Ireland

The University of Florida encourages all members of the Gator Nation to take responsibility for the environmental, economic, and social consequences of their individual and collective actions. This mindset will help create a culture shift and the creation of common/collective norms that support sustainability. It will highlight the need for sustainability to become part of everyday life and operations for the UF community – for the campus to be a living laboratory for sustainable practices and behaviors[103].

The creation of a green economy based on the principles of sustainability requires radical thinking and innovation in creating new models of sustainable production and consumption, coupled with innovation in economics, the ways that we work together and the ways that we make decisions. This requires research, trials and piloting, incorporating the full range of academic disciplines, from pure science through the arts to the social sciences. The obvious home for this experimental work is in the third level institutes, with their discrete campuses and their growing research ethos. This is being realised across the globe, and many prestigious universities are moving in this direction.

Herein lays a great opportunity for society to reap large additional rewards from its massive investment in these bodies, and for the Institutes and Universities to develop lasting roots and greater credibility in the wider community through the creation of sustainable local and national communities and green jobs.

102 http://www.thegreenway.ie/about-us/
103 http://sustainable.ufl.edu/about/

The third level can only play its part in the wider societal changes that are necessary, in the face up to climate change and ecosystem decline, when it can lead by example, making the necessary structural and behavioural changes that are required of it. There will be great opportunities for research and innovation that will emerge from this process, as well as opportunities for interdisciplinary learning.

University of California Berkeley's renowned dedication to excellence does not stop at academics - it also translates into efforts to be an environmentally sustainable campus. At its core, the university's commitment to sustainability has always focused on public service, transparency and excellence. ***As the program matures it is also acquiring a new focus on innovation, apparent in the abundance of cross-cutting programs and projects led by student, staff, faculty, and academic communities.***[104]

In a voluntary capacity Green-Campus Ireland[105], in existence since 2007, has already started the work on greening the campuses of Ireland, using a programme developed by the Foundation for Environmental Education (FEE). Three institutes have already been awarded Green Flags, namely: GMIT, Castlebar[106] Coláiste Dhúlaigh College of Further Education, Coolock[107]; and University College Cork[108]

At the same time the third level institutions are proving very effective at developing all sorts of structures and mechanisms for supporting a wide range of enterprise

104 http://sustainability.berkeley.edu/
105 www.greencampusireland.org
106 http://www.greencampusireland.org/news/an-taoiseach-raises-green-flag-at-gmit-castlebar
107http://www.dublincity.ie/WaterWasteEnvironment/Waste/Pages/StudentsraiseGreenFlagatCol%C3%A1isteDh%C3%BAlaigh,Coolock.aspx
108 http://143.239.128.67/en/build/environment/GreenCampus/

initiatives on campus, e.g. The Business Innovation Centre, IT Sligo[109], and UCD Innovation[110]

What is proposed here is the bringing together of these two models, to create a cutting edge living laboratory of every campus in Ireland, where: the aspirations for sustainability are tested at every turn; problem solving and research are part of the syllabus from the day a student enters the door of the college; participatory decision-making processes are road-tested; all aspects of the campus are tested against the aspirations of Agenda 21; and the local community's needs are accepted as one of the key drivers for scientific, technological and social innovation.

This living laboratory model should be piloted over three years, with the three existing Green flag recipients, should they be willing to take up the challenge. The project should be extended out to all the Third Level institutions that have in the meantime achieved their Green Flag status. All third level institutions are to be given direction down this route with the objective of all having Green Flag status within 5 years and 25% progressing beyond this to "Living Laboratory" status

The greening of the campus may require a lot of commitment, but it is likely also to save money in the process of conversion. A change of attitude alone can reduce energy spending by 25%[111].

The EU Sustainable Development Strategy[112]sees education and training as one of the key drivers for promoting sustainable development, stating that ***e****ducation is a prerequisite for promoting the behavioural changes and providing all citizens with the key competences needed to achieve sustainable development.* It goes on to state *that universities, research institutes and private enterprises all have an essential role to play in promoting research that supports efforts to ensure that economic growth and environmental protection reinforce each other. Universities and other higher education institutions have a key role in providing education and training that equip the qualified workforce with the necessary competences to fully develop and exploit sustainable technologies. They should also contribute to low environmental impact management through interdisciplinary approaches and by building on existing networks. Creation of partnerships and cooperation between European and third country universities and higher education institutions, encouraging networking and peer learning, should be promoted.*

Science Shops as part of the "Living Laboratory"[113]

An extension of this model is the establishment of Science Shops. Science shops respond to civil society's needs for expertise and knowledge and this is a key element that distinguishes them from other knowledge transfer mechanisms. They are small entities based in third level institutions that carry out scientific research in

109 http://itsligo.ie/research-innovation/innovation/
110 http://www.ucd.ie/innovation/
111 http://www.arup.com/_assets/_download/72B9BD7D-19BB-316E-40000ADE36037C13.pdf
112 Renewed EU Sustainable Development Strategy as adopted by the European Council 2006.
113 http://www.livingknowledge.org/livingknowledge/

a wide range of disciplines – usually free of charge and – on behalf of citizens and local civil society. The research is carried out by senior students as part of their curriculum under the supervision of qualified staff. For the civil society organisations, each project aims to help them tackle problems in the local area. For the third level institution, each project contributes either to research or to student learning. It would be expected that the mutual benefits derived from these collaborations will encourage the partners to continue to work together for years to come. Clearly, this will be a learning experience for all concerned and will involve senior students in real life problem solving, innovation and project management. At present science shops, in a variety of forms and across the planet, play a valuable role in supporting informed decision-making.

In this context the term 'science' is used in its broadest sense, incorporating social and human sciences, as well as natural, physical, engineering and technical sciences. The nature of the science shop is that it provides an on-going need for civil society led research which engages senior students and academic staff. This in its turn stimulates an interest at all levels of the college in the processes of research, introducing a greater need for R and D capacity building within the institute.

Recommendation: **Establish a process of change, led by Government in which all third level institutions become living laboratories for a Sustainable Ireland, for the Green Economy and as a driver for green job creation.**

Appendix

Case studies highlight the importance of accessing LIFE+ funding

A number of case studies highlight the importance of accessing LIFE+ funding for creating new jobs, retaining existing jobs, greening existing jobs and ensuring our ability to create green jobs in the future.

CASE STUDY 1: Termoncarragh LIFE Project

The project ran from June 2001 – November 2005, with a total project budget of €787,000. The project was led by BirdWatch Ireland 17% (€130,000) with EU LIFE funding with match support from Teagasc 9% (73,000). A sum of €584,000 (74.2%) was awarded from the EU LIFE fund.

The LIFE project engaged 20 farmers over 100 hectares of Termoncarragh Lake SPA in management agreements, employed a project manager and supported a range of direct and indirect jobs including:

- land management contractors such as machinery operators, fencers, creation of pools and cover corridors
- provision of material – interpretative panels, printed materials
- scientific staff, education staff, administration staff

Supported income (greening jobs) included land management payments to the local farming community within the area covering 100 hectares of Termoncarragh Lake SPA in management agreement.

Indirect contribution to the local economy of Belmullet Co Mayo such as in accommodation provision, tourism and wildlife enhancement for promotion at local tourist information, small businesses and B&Bs. The project has provided a basis for future jobs and skills development as well as a facility to attract interest into the area with further indirect benefit.

Despite the completion of the LIFE project the reserve and a part time position continues to be supported by BirdWatch Ireland through membership funds and small scale grants for specific works, supporting local employment and providing a focal point for communities and visitors who account for approximately 1000 bed nights per year.

CASE STUDY 2: Murrough LIFE Project

The project ran from July 2003 – December 2007, with a total project budget of €2,130,000. The project was led by BirdWatch Ireland 25% with EU LIFE funding at 75% (€1,574,000) was awarded from the EU LIFE fund for combined land acquisition and services to create habitat management and reserve facilities over 90 hectares.

During the four year duration of this LIFE project direct employment included a project manager/reserve warden, and jobs supported included:

- land management and labour contractors such as machinery operators, fencers, pool work, infrastructure such as boardwalks and three observation hides, ecological consultants, forestry management team (removal of exotic species) who operated according to conservation sensitive specifications.
- local farmers engaged as part of a grazing management regime and crop sowing targeting conservation objectives who operated according to conservation sensitive specifications.
- education staff, administration staff (a total of 8 staff partially engaged)
- provision of material – interpretative panels and printed materials

Indirect contribution to the local economy of Wicklow such as in accountants/solicitors engaged, local printers and welders, accommodation provision, tourism and wildlife enhancement for promotion at local tourist information points, small businesses and B&Bs. The project has provided a basis for future jobs and skills development as well as a facility to attract interest into the area with further indirect benefit.

Despite the completion of the LIFE project the reserve and warden position continues to be supported by BirdWatch Ireland through membership funds, forestry income and small scale grants for specific works, supporting local employment and providing a focal point for communities approximately 4,000 visitors per year spending on average €20 per head in the local area per visit. The reserve is working towards its target of 20,000 visitors per year within 10 years.

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