



An Chomhairle Náisiúnta Eacnamaíoch agus Shóisialta
National Economic & Social Council

Greening the Economy: Challenges and Possibilities for Integrating Sustainability into Core Government Policy

NESC Secretariat Papers

Paper No. 7

June 2013



An Chomhairle Náisiúnta Eacnamaíoch agus Shóisialta
National Economic & Social Council

Greening the Economy: Challenges and Possibilities for Integrating Sustainability into Core Government Policy

Dr Jeanne Moore, Dr Larry O'Connell and Dr Rory O'Donnell

June 2013

The NESC Secretariat Papers provide analysis of economic, social or environmental evidence and policy. The views are those of the authors and do not represent the collective view of the Council.

A list of the full set of NESC publications is available at www.nesc.ie

Table of Contents

1. Introduction	7
2. The Landscape of Environment	9
3. The Council's Response to the Framework for Sustainable Development	19
4. Another Look at the Action Plan for Jobs	22
5. Bringing Environment Further In	26
6. Conclusion	35
Annexes	38
Annex 1: Selected Key Policies and Reports of Environmental Significance	39
Annex 2: Selected EU/International Policy and Legislative Context	42

List of Tables

Table 1: Recent Relevant Policies and Reports	5
Table 2: Components of the Action Plan for Jobs Process	18
Table 3: Green Economy Sectors and Current Policy	24
Table 4: Overview of National Cleantech Strategies	25
Table 5: Greening Economy: A Broader View	27

List of Figures

Figure 1: Main Environmental Challenges	6
---	---

List of Boxes

Box 1: Closing the Loop: Circular Economy in Action	7
Box 2: Roadmap to a Resource Efficient Europe—An Overview	10
Box 3: Natural Capital	29
Box 4: Departmental Responsibilities for Environment	31

1. Introduction

The overarching question which motivates this paper is how the potential associated with our natural environment can be preserved and used to support a long-term sustainable recovery of the Irish economy. The paper is designed to support discussion about how policy might be enhanced rather than to provide definitive answers.

To probe the question of how the synergies between economy and environment can be maximised the paper looks at the issue from four different points of view:

- **Section 1.2—Landscape of Environment:** First, the paper takes a wide view by outlining the diverse landscape of environmental frameworks, strategies and policies;
- **Section 1.3—The Council’s Response to the Sustainable Development Framework:** Second, the paper delves deeper into the question of how this broad and differentiated set of policies and actions can be progressed;
- **Section 1.4—Another Look At the Action Plan for Jobs:** Third, it widens the focus, again, to consider what the Action Plan for Jobs suggests about progress and action in the public sector; and,
- **Section 1.5—Bringing Environment Further In:** Finally, it narrows the focus by considering the specifics of green economy policy.

These four viewpoints probe different aspects of the how environment and economy might be more integrated in practice.

In **Section 1.2**, the overview of the landscape highlights some of challenges that exist if our natural assets are to be valued and protected; and, developed in such a way that Ireland can create a leading position in terms of its resource efficiency and the effort to move toward more circular systems of economy. This looks at the broad landscape and also draws attention to the role of legislation. The section finishes by noting that the challenge of integrating environment and economy is not unique to Ireland. Irish work, on environment, during its Presidency of the EU highlights that there has been limited success in getting necessary traction across other policy areas, principally the economic sectors.

Section 1.3 offers a deeper enquiry, based on NESC’s work on sustainable development in 2012. This highlights the need to probe the kind of action which flows from strategies or plans. It identifies the need to name trade-offs, the importance of local context and the need to explore different approaches to implementation. It suggests greater focus is needed on the specific concrete relationships between the environmental, economic and social dimensions of sustainable development in the Irish context.

The ability to integrate environment needs to be considered in the context of how Government is achieving coordination and executing priorities. For this reason **Section 1.4** takes another look at the Action Plan for Jobs. In doing so, it considers the growing importance of specific plans and clear lines of reporting. It also points to the need in the current system of public administration of finding further means to push departments, agencies and stakeholders to search and develop more ambitious plans in which there is greater focus on outcomes and impacts.

Section 1.5 looks at how environmental considerations are being brought into current economic policy and suggests that, while progress is evident, there is scope to do more. Firstly, by focusing on strategic areas particularly suited to the Irish context, namely wind, food and agriculture and retrofit. Secondly, by considering the wider greening economy view and identifying those areas which seem to go with the grain of current policy and those which require further clarification and exploration. The effect of this may be to make the greening agenda more manageable for an already resource constrained policy system.

All four viewpoints suggest that there is a need to own and explore the problem of integration, rather than to assume that integrating environment and economy will either happen in response to overarching strategy or emerge in time in response to bottom-up action. Integration would seem to require a multifaceted approach. The question of the institutional means that might be needed to support this is something the Council might consider in its discussions.

At the presentation made to the meeting of the Council on June 21st, the Environmental Protection Agency (EPA) provided further details in relation to the state of the environment and the core challenges. This paper, details from the EPA's presentation and the Council discussion have informed the Council's overarching report, the Five Part Crisis, Five Years On.

2. The Landscape of Environment

We begin this section by noting the breadth of environmental policy both nationally and in the EU. Table 1 presents a list of national strategies, reports and action plans related to the environment. Annex 1 provides more detail on these. Annex 2 provides a list of international reports. This shows the diverse and multiple areas of policy focus contained under the environmental banner.

These policy statements and key reports, from a range of departments and agencies, examine many aspects of Ireland's environmental resources, risks and challenges. Although diverse in scope, many reports share common conclusions and recommendations which refer to the necessary integration of environmental issues into core policy decisions, both economic and social. The persistence of this policy challenge is one which NESC sees value in exploring more deeply, with the aim of adding value to this complex area. This will be examined in more detail below. However, first, we provide an overview of the state of Ireland's environment based largely on the most recent EPA Review, the first item listed in Table 1.

In its State of the Environment report in 2012,¹ the EPA points to Ireland's environment as a strategic asset for the State and notes that, in overall terms, the quality of the environment is generally high (EPA, 2012). But as in earlier summaries, it concludes by identifying key challenges and overarching themes. It outlines how:

Ireland faces a number of formidable challenges in the coming years to maintain a healthy and protected environment and to decouple future economic growth from environmental pressures. The challenges identified are significant and not all will be resolved in the short or even the medium term, but the benefits of addressing them are great. A protected environment provides a clean and safe place to live, while underpinning vibrant agrifood and tourism sectors and making Ireland an attractive place for inward investment (*ibid.* :xiv).

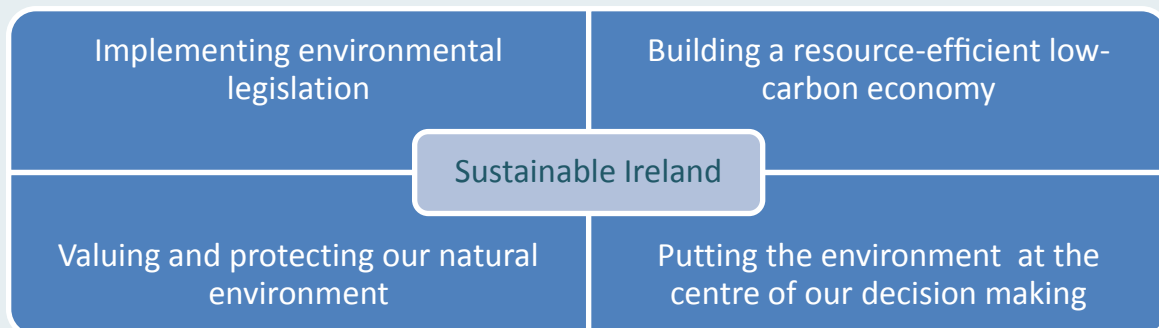
It identifies four key environmental challenges for Ireland. This paper provides a brief overview of each challenge in turn.

¹ As well as these challenges, the EPA have six environmental goals to 2020 which are: limiting and adapting to climate change, protected water resources, sustainable use of resources, integration and enforcement, protected soil and biodiversity and clean air.

Table 1: Recent Relevant Policies and Reports

Ireland's Environment: An Assessment (EPA, 2012)	This is the four-yearly state of the environment report.
Our Sustainable Future (DECLG, 2012)	This is an overarching national policy framework for sustainable development.
Delivering Our Green Potential (DJEI, 2012)	This policy strategy outlines the potential of the green economy for Ireland.
Harnessing our Ocean Wealth (DAFM, 2012)	This Integrated Marine Plan (IMP) sets out a roadmap to enable our marine potential to be realised.
Strategy for Renewable Energy 2012-2020 (DCENR, 2012)	This strategy focuses on energy demand reduction and developing the renewable energy sector.
Food Harvest 2020: A Vision for Irish Agri-food and Fisheries (DAFF, 2010)	This is an industry-led group developed a strategy for the food sector.
Green Tenders: An Action Plan on Green Public Procurement (DECLG, 2011)	This Action Plan commits the public sector to playing a sustainability role through its procurement activities.
Actions for Biodiversity 2011-2016: Ireland's National Biodiversity Plan (DAHG, 2011)	This plan aims to achieve reductions in biodiversity loss and degradation of ecosystems by 2020.
A Resource Opportunity: Waste Management Policy in Ireland (DECLG, 2012)	This policy statement focuses on measures for increased prevention, reuse and recycling and so that we reduce the impact of waste on the environment.
Sustainability Development Indicators Ireland (CSO, 2013)	Key environmental indicators include GHG emissions, forestry levels, water quality, energy use, natural habitats and birds.
Ireland's Second National Energy Efficiency Action Plan to 2020 (DCENR, 2012)	This Action Plan follows on from the 2009 NEAP and includes measures which aim to secure a more sustainable energy future for Ireland.
Review of National Climate Policy (DECLG, 2011)	This review sets out the challenges remaining to meet 2020 targets.
Ireland and the Climate Change Challenge: Connecting How Much with How To (NESC, 2013).	This report sets out the NESC Secretariat's vision for Ireland in 2050, and the key building blocks that can underpin it.

Figure 1: Main Environmental Challenges



Source: EPA (2012): Ireland's Environment: An Assessment. Dublin: EPA.

Valuing and Protecting our Natural Environment²

The importance of protecting habitats and biodiversity is emphasised in both EU and national environmental reviews and reports. The EPA outlines the importance of clean air and safe water, abundant biodiversity and healthy soil. While many positive aspects of Irish air and water quality are noted, maintaining our clean air and healthy soil will require continuing attention, as will protecting biodiversity and nature from further loss and damage. Challenges remain in relation to the control of industrial emissions of pollutants and to reduce traffic pollution as part of a move away from fossil fuels. Major challenges remain in relation to water pollution from water treatment plants and agricultural run-off. It notes the particular challenge ahead to deliver the production increases outlined in Food Harvest 2020 while meeting international obligations in relation to water. It points to the new water governance arrangements as critical for delivery of the Water Framework Directive objectives.

Progress has been made in the designation of EU protected areas in Ireland in terms of nature and biodiversity, with a further commitment to halt biodiversity loss by 2020. But this will require greater integration of biodiversity concerns in sectoral policy development and implementation. Currently, the majority of Ireland's habitats listed under the EU Habitats Directive are reported to be of poor or bad conservation status (*ibid.*:76). Only seven per cent of these habitats are considered to be in a favourable state. Thirty nine per cent of species listed are in a favourable state.

² In the 2012 report, limiting and adapting to climate change has been subsumed under 'building a resource efficient low carbon economy', that is section 1.2.2 below.

Significant aspects of biodiversity in Ireland are under threat from a range of unsustainable activities. Improved information and indicators on biodiversity and protected areas are required so that the full economic value of ecosystems and their services can be calculated to promote integration of biodiversity values into the national accounting and reporting systems (*ibid.*:82).

In relation to land use, there is insufficient information on soil quality in Ireland, despite it being a valuable resource. The main type of land cover type is agricultural land, two thirds of the national landmass. The amount of forested land is just 11 per cent which is 35 per cent lower than the EU average. Almost one-fifth of land is peatland, much of which has experienced degradation. The EPA outlines how the sustainable management of both land use and soils requires an integrated approach from the key statutory bodies. They point to the need for a national landscape strategy and a national soil protection strategy as key.

Building a Resource-efficient, Low-carbon Economy

The European Commission wants Europe to be a circular economy by 2050, while not curtailing economic growth, but rather ‘decoupling’ growth from resource use. A ‘circular economy’ aims to ‘design out’ waste—products are designed and optimised for a cycle of disassembly and reuse (Ellen MacArthur Foundation, 2013). In a circular economy, the industrial system is restorative or regenerative by intention and design. It seeks to replace the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models. Unlike in today’s ‘buy-and-consume’ economy, durable products are leased, rented, or shared wherever possible. Box 1 provides an example.

Box 1: Closing the Loop: Circular Economy in Action

In the UK, working with WRAP, an organization established to create a market for recycling, local authorities, waste management companies, bottle manufacturers, brands such as Coca Cola, retailers, and banks came together to ensure that plastic bottles no longer ended up in landfill. Investment was secured and the *Closed Loop Recycling* plastic bottle factory opened in London in 2009. It now processes nearly a billion discarded soft drink and milk plastic bottles and recycles them back into food-grade plastic. It has annual sales of more than £66 million³.

³ <http://www.wrap.org.uk/>

Resource Efficient Europe is one of seven flagship initiatives adopted by the European Council as part of its *EUROPE 2020* strategy. Its vision is to help move European business, energy systems, farms, households and communities towards a model of growth in which resource constraints and planetary boundaries are respected. Box 2 provides an overview.

The EPA echoes the EU focus on resource efficiency (water, energy and waste) and points to Ireland's successes in meeting EU waste recycling and recovery targets for waste packaging, waste electronic and electrical equipment and for household waste paper, metals plastics and glass. Resource efficiency comprises five elements: water conservation, waste prevention, energy efficiency, clean technology and eco-design. However, Ireland has low resource productivity compared to the EU average (Comhar, 2011: 11). There is considerable economic potential in tackling such efficiencies. For example, a study for the European Commission concludes that we could realistically reduce the total material requirements of the EU economy by 17 per cent and that this could boost GDP by up to 3.3 per cent and create between 1.4 and 2.8 million jobs. Every percentage point reduction in resource use is worth around 23 billion Euros to business and could lead to up to 100,000 to 200,000 new jobs in the short run.⁴

This strong focus on resource efficiency (energy, water, waste) at European level provides a framework for further action in Ireland. In addition, a significant amount of our environmental impact (both in Ireland and in Europe) is borne outside of it,⁵ so as with climate change, resource efficiency (including water and carbon), we need to consider what we import and export as well as national usage.

Establishing a resource-efficient society is a complex matter that involves changing production and consumption activities and behaviours in our homes and in the workplace (*ibid.*:66) It outlines the overall challenge for resource efficiency as:

Transforming the economy onto a resource-efficient path requires policies that recognise the interdependencies between the economy, wellbeing and natural capital and the removal of barriers to improved resource efficiency. To achieve a resource-efficient and green economy, there is a need to make a transition across all sectors of the economy and, in particular, the energy, agricultural and transport systems, as well as changing behaviours of producers and consumers (*ibid.*:xiv).

⁴ The Link between the Environment and Competitiveness: EC Annex 5 to 7th EAP
http://ec.europa.eu/environment/newprg/pdf/ia_annexes/Annex%205%20-%20The%20link%20between%20the%20environment%20and%20competitiveness.pdf

"Macroeconomic modelling of sustainable development and the links between the economy and the environment", GWS *et al.* for the Commission, (2011)

⁵ As pointed out by the EPA's submission to the 7th Environmental Action Programme.

On-going work here as part of the Waste Prevention Programme in relation to Stop Food Waste, hospitals, Green Hospitality, Green Home and Green Business is valuable. This is likely to develop further. The EU Waste Directive will have a profound influence on waste management practices and policy for the foreseeable future. In addition, the increasing levy on disposal of waste to landfill is driving post-consumption management options up the waste hierarchy towards more sustainable behaviours (*ibid.*:xiii).

There is no national resource efficiency programme and responsibility for this area is divided across departments and actors. The development of essential waste infrastructure is a challenge for the State. Another key aspect is the role of behaviour change. Individuals and businesses will have to engage willingly in a multitude of actions including waste reduction, water and energy efficiency and modal transportation shifts (*ibid.*:xiv). The importance of behaviour change in energy efficiency was outlined as part of the climate change project (Moore, 2013).

Areas for further development and which have economic opportunities include the reduction of environmental impacts through eco-design and innovation; and through sustainable procurement. The first Green Public Procurement Action Plan, Green Tenders, was launched in 2012 to assist public authorities to plan and implement green public procurement successfully.

Other areas of challenge in relation to achieving a low carbon economy include meeting the 2020 targets on GHG emissions as a major task for Ireland. There is value in an integrated approach in climate policy—integrating approaches to forestry, agriculture, land use and planning for example. The EPA refers to the importance of greening agriculture, transport and buildings. For the longer term, it outlines the importance of significant increases in renewable energy use and improvements in energy efficiency. Finally, it outlines how a concerted approach involving both adaptation and mitigation is required with mainstreaming of climate-change issues into future investment and planning decisions (*ibid.*:31).

Box2: Roadmap to a Resource Efficient Europe—An Overview(European Commission, 2011)

Vision: 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.

Context: If we carry on using resources at the current rate, by 2050 we will need, on aggregate, the equivalent of more than two planets to sustain us, and the aspirations of many for a better quality of life will not be achieved. In the EU, each person consumes 16 tonnes of materials annually, of which 6 tonnes are wasted, with half going to landfill.

Transforming the Economy: Transition 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. Decoupling growth from resource use and unlocking these new sources of growth needs coherence and integration in the policies that shape our economy and our lifestyles.

A key focus of activity is sustainable consumption and production based on using less, improved products, services and new entrepreneurial business models (e.g. leasing); and changing consumption patterns. The approach to waste is also critical with efforts focused on reducing and re-using waste, for example based on industrial symbiosis where waste of one firm is used as input by other firms. Finally, a key consideration is efforts to remove harmful environmental subsidies and getting pricing right to incentivise good environmental practice.

Natural Capital and Ecosystems: Ensuring a long-term supply of essential ecosystem goods and services implies properly valuing **and** investing out natural capital. Green infrastructure often brings higher returns than constructed or manufactured alternatives, with lower up-front costs.

Key focus of activity is mapping and accounting for ecosystem services and fostering investments in natural capital; halting biodiversity loss; reducing security of supply risks from specific minerals and metals; reducing water waste and developing water efficiency targets; improving air quality; monitoring land and soil use; and developing marine resources. In relation to marine the Roadmap notes that there is a lack of coherent management of sea space and identifies the need to support what it terms as 'Blue Growth' (*ibid.*:17)

Key Sectors: In industrialized countries, nutrition, housing and mobility are typically responsible for 70-80% of all environmental impacts. The Roadmap proposes actions in three areas: 'addressing food'; 'improving buildings'; and 'ensuring efficient mobility'.

Governance: Transforming the EU into a more resource efficient economy will require concerted action across a wide range of policies. Work will focus on enhancing dialogue; supporting investments; development of indicators and targets; and supporting resource efficiency internationally.

Implementing Environmental Legislation

The environment is a highly regulated policy area, strongly shaped by European legislation and targets. An enormous challenge for Ireland (and the EU) therefore concerns monitoring and implementing legislation as well as finding effective forms of governance.

In the coming years, Ireland faces formidable challenges in meeting international obligations including for example on water quality, air quality, GHG emissions and waste management. The EPA note that Ireland has a poor history of compliance with EU environmental laws (*ibid.*:140⁶). In relation to environmental legislation in general, Ireland is reportedly moving from the lower half on an infringement table of member states to around mid-way and should move into the better performing half in 2012.⁷ Ireland faces ongoing infringement proceedings in relation to the implementation or transposition of EU directives including the Birds Directive, Habitats Directive and the Environmental Impact Assessment Directive. One challenge the EPA notes is that the cost of non compliance can be cheaper than the cost of implementing legislation.

The EPA note the importance of co-operative working and the network of environmental regulators which have succeeded across a range of enforcement areas (*ibid.*: 146), which was a theme developed in NESC's study on Ireland in the EU. The EPA cautions on the costs of inaction in relation legislation and point out the risk of significant future cost in terms of fines, remediation costs and a reputational cost that will impact on Ireland's green branding.

The EPA also note the importance of public environmental engagement and buy-in, as well as meeting the obligations for greater consultation and meaningful participation in environmental matters. As noted by the EPA, and evident from our climate change work, an important element of successful environmental policies is that consensus on the need for policy intervention can be agreed. The EPA conclude that transparency surrounding policy design and implementation, as well as public consultation, can be a critical element in successfully introducing environmental policies. They point to analysis of the plastic bag levy as an illustration (Convery *et al.*, 2007). In addition, Ireland ratifying the Aarhus Convention will have implications for the policy system in how it informs, engages and consults with the Irish public. NESC's current cross-cutting work on the energy system will provide a valuable insight into this area as regards renewable energy project development.

Putting the Environment at the Centre of our Decision-Making

The fourth challenge identified by the EPA is the need to place environmental considerations at the centre of policy and decision making at national, regional and

⁶ In making this statement the EAP cite (Cashman, 2012)

⁷ <http://www.eolasmagazine.ie/john-mccarthy-european-priorities>

local levels. It argues, and indeed its work on Green Hospitality and Green Farming shows, that incorporating environmental considerations into policies can save costs, particularly by influencing short-term decisions in relation to long-term assets such as energy and water infrastructure, housing and transport. It calls for integrating environmental policies into other areas such as transport, agriculture and buildings.

The EPA argues that placing environmental issues at centre of policy will require leadership and co-ordinated effort. The Irish work on environment as part of its Presidency provides a reminder that this will be challenging in Ireland and across Europe. The Irish Presidency has progressed what is likely to be one of the key requirements for a green economy: a recognisable definition and measure of the greenness of a product or service. This will be the precursor to allowing greater EU market integration and removing barriers to trade. Currently companies with green credentials are forced to apply different schemes in most European countries to receive accreditation (European Commission, 2013a). However, the recent Presidency discussion paper (European Commission, 2013b) also notes that a much deeper and long term transition is needed and that this will 'require systemic changes over an extended period (*ibid.*:5)'. The paper notes that across Europe and in high-level EU decision-making it is continuing to be difficult to integrate environmental policies into economic decision-making, as the following quote highlights:

... Ministers discussed giving environment and climate policies a priority in the European semester, and expressed support for their better integration in economic decision-making and other policies, notably energy, agriculture and transport.

However, at a time of economic challenge, there appears to be limited success in getting the necessary traction across other policy areas, principally the economic sectors, to accelerate the move towards meeting the objectives of established policies as articulated in the Roadmap on Resource Efficiency. In fact, the recent ECOFIN Council Conclusions on the Annual Growth Survey 2013 were almost entirely silent on these issues (*ibid.*: 4)

Informal Meeting of EU Environment Ministers, 2013

The Presidency paper proposed two questions for further consideration by the Ministers:

- How can the implementation of the resource efficiency/green economy agendas be accelerated at a time of acute economic and fiscal challenge in the EU?
- How can we gain traction for these policies and garner the necessary political support for the paradigm shift to a low carbon future that is now urgently required?

We believe that these questions are critical and there is a need to think carefully about them. In a later section, we reflect on the current state of play in Irish policy and consider how further integration might be achieved.

However, we first draw on some elements of the Council's 2012 thinking on a framework for sustainable development. The Council's observations probed these very issues of 'integration' of sustainability and environmental concerns into core policy and the challenge of 'implementation' of broad national 'strategies' of frameworks.

3. The Council's Response to the Framework for Sustainable Development

In its 2012 observations, the Council noted that a key feature of the framework for sustainable development is that it covers a very broad range of substantive issues. The dimensions of sustainability and the policy areas discussed include: public finance, consumption and production, management of natural resources, climate change and clean energy, agriculture, transport, social inclusion, sustainable communities and planning, public health, education, communication and behaviour change, innovation, research and development, skills and training, and global poverty and sustainable development.

The framework names existing and planned approaches in each of these policy areas. It cites an extensive range of national strategies, reports, pilots, international agreements and policy statements alongside a range of legally-binding international instruments. Thus, the framework provides a panorama of the policy ideas, strategies and legal instruments in place.

The Council considered that this encompassing, multi-instrumental and multi-level approach is a strength of the framework. It reflects the fact that a wide range of policy instruments are necessary, and a wide range of actors need to be involved in shaping and implementing policies for sustainable development. However, it argued that the encompassing nature of the framework may also be the source of some of its potential weaknesses. There are possible pitfalls within an over-arching and encompassing strategy for sustainable development.

First, the nature of environmental problems—many of which are 'wicked', contested and subject to various outcomes—suggests that we should not necessarily be reassured by the existence of an impressive range of strategies, plans and international treaties. It all depends on the kind of action which flows from these. The complexity, wickedness and contestability, though it warrants an encompassing approach, will make itself felt within each of the concrete policy areas and sectors covered by broad strategies. It emphasised that this is not a counsel of despair. There are many examples of successful policy approaches to environmental problems, and areas in which little progress has been made. It is on the nature, strength and potential of *policies in specific areas* that a framework for sustainable development must ultimately rely.

Second, an encompassing approach, can imply, or seem to imply, that sustainable development is all synergies, rather than trade-offs. In tending to gloss over trade-offs, an encompassing vision of sustainable development also tends to forestall identification and analysis of the different kinds of trade-offs involved. In certain areas, the contested and wicked nature of environmental solutions can prevent significant policy action or their integration into core government policy.

Third, an encompassing approach can seem to invoke generalities about the inter-relation between the environmental, economic and social dimensions of sustainable development. These tend to be derived from global-level discussion, rather than

exploring the specific ways in which environmental, social and economic issues interact *in the Irish context*.

Fourth, within an encompassing statement of a sustainable development strategy, reference to ‘implementation’ can seem vague. It may not sufficiently identify the nature of the ‘implementation’ challenge or the need for different approaches to implementation.

Fifth, an encompassing framework, and a policy discourse focused on ‘coordination’ and ‘integration’, could skirt around the margins of some important and difficult policy and political challenges. For example, it correctly identifies the need for complementary actions on urban planning, public transport, technological innovation and waste management. But, if we have failed over 20 years to do sustainable local planning or achieve significant reduction in car usage—despite numerous policy statements and strategies—is there reason to believe that embedding these policy challenges in an encompassing agenda of sustainable development will make it easier to achieve a shift in direction?

Sixth, an over-arching vision of sustainable development can engender scepticism about ‘national strategies’. It draws on numerous national strategies, international roadmaps and agreements. But, this panorama refers in equal measure to strategies that have been a real success; ones which have prompted institutional innovation and hold great promise; and strategies which have failed to have much impact. This could make some sceptical that an over-arching sustainable development framework will be sufficiently integrated in core policy to be a source of real policy development and effective implementation.

Consequently, the Council suggested a number of ways in which it could be a more compelling and fruitful framework within which many specific policy challenges could be addressed in the years ahead. One was more focus on the specific relationships between the environmental, economic and social dimensions of sustainable development *in the Irish context*, and articulation an *Irish vision* of sustainable development.

Two further Council observations may be particularly relevant in current circumstances, in which the challenge is to find ways to strengthen the integration of sustainable development in core government policy, which is dominated by fiscal, banking and employment concerns. It suggested that a sustainable development framework could begin from a more explicit statement of the different kinds of policy instrument that are used in the environmental area and, especially, the different kinds of policy and regulatory processes involved. Related to this, it suggested that the policy-making and implementation challenges be explored in more detail, identifying the roles of central government, local authorities, public agencies and other actors.

There are big differences between environmental policies, such as the Kyoto Protocol, the Water Framework Directive (WFD) and the Green Hospitality Initiative. While more explicit consideration of these different kinds of policy might be thought to make it more difficult to link strategy and implementation, the Council

argued that, in fact, it would make it easier to address this challenge. It would, to some degree, concretise the areas in which, and the ways in which, the environmental, economic and social dimensions interact and overlap. It would greatly concretise what ‘implementation’ looks like in large areas of environmental policy. In doing so, it would flesh out what ‘partnership’ and ‘stakeholder engagement’ mean in *some* areas of policy (such as the WFD and the Green Hospitality Initiative); by the same token, it might put in relief the absence of effective stakeholder engagement in other areas—and hence the perceived vagueness of ‘partnership.’

In suggesting that a sustainable development framework might engage in a fuller, and perhaps different, way with the policy-making and ‘implementation’ issues, NESC was clear that these are the most demanding challenges. The reason is that in formulating a sustainable development strategy we confront a wider set of policy and implementation issues that are not fully resolved in Irish public administration and public policy. Among these are: how is the ‘centre’ to achieve effective coordination and execution of government priorities? how is authority to be devolved from the centre to line departments and local government? how are environmental policy decisions with distributional consequences to be made in a timely manner and in a way that avoids the lowest common denominator? how are stakeholders of different kinds to be engaged in policy and delivery? (NESC, 2005). It is interesting that in its *Environmental Performance Review of Ireland*, the OECD recommended that ‘in the context of the ongoing review of local governance, [Ireland should] examine the *environmental responsibilities of different administrative levels* (emphasis in original) to identify opportunities for better coordination, economies of scale and improved policy development and implementation, e.g as regards provision of water services and establishment of waste management infrastructure’ (OECD, 2010: 17). NESC observed that these larger issues cannot be resolved *within* a framework for sustainable development; they require wider consideration and depend on wider developments in the Irish policy and public system. Indeed, it suggested that formulation of a sustainable development framework could, potentially, open these issues for reflection, prompting consideration of these difficult challenges. If that was to happen, then, the Council suggested, the ‘implementation’ of the sustainable development framework might occur in a context in which institutions and routines are being incrementally adapted and created, in ways that allow effective action for sustainable development. It contrasted this approach—grounded in the existing methods, achievements and limits of environmental and other policies—with generic calls for ‘integration’, ‘implementation’ and ‘partnership’.

A central thrust in this note is that important developments in policy making and implementation are, in fact, underway. These were prompted by concerns about strategic coordination of key national policies and are most evident in the processes put in place to create, implement and monitor the Action Plan for Jobs. Consequently, before looking further at how to integrate environment and economy, the next section considers the processes associated with the Action Plan for Jobs.

4. Another Look at the Action Plan for Jobs

A separate Secretariat paper on Enterprise policy identifies the Action Plan for Jobs as a potential step forward in terms of enterprise policy (NESC Secretariat, 2011). This section argues that it may also be step forward in terms of public sector reform.

The approach is defined by an overarching policy statement the Action Plan for Jobs but also supporting plans and statements such as the Green economy report *Delivering Our Green Potential*.⁸ The success of these plans increasingly depends on a significant level of engagement across a whole myriad of sectors, involving several government departments, agencies and many companies and other stakeholders. In discussion in the Council the view was advanced that the Action Plan for Jobs is more an action plan for enterprise than for jobs. There is probably some truth in that, although there are counter arguments, In this paper we put that important issue aside. Our purpose is to draw attention to the process of plan formation, implementation and monitoring in order to prompt discussion of how sustainability can be more integrated into core policy.

The issue of how Government manages such a network and diverse set of sectors is a critical and long-standing challenge. What has emerged, thus far, is a process with three key elements: an overarching plan; a monitoring committee and secretariat; and, steering or implementation groups. Table 2 provides a summary of each.

The plans are developed by the Department of Enterprise, Jobs and Innovation and Forfas. The Government endorses and commits to implementing the plans. The management of the process is carried out by the Monitoring Committee. The activities of the Monitoring Committee and its Secretariat include:

- **Breaking Down Plans:** The annual plan is re-worked into quarterly actions which are then circulated by the Secretary General of Department of An Taoiseach to each department.
- **Advance Warning:** A warning system is in place to track work during each quarter. This involves checking at the end of the first month to see if plans are on track or not; and flash report at the end of month two to identify potential problems. The latter forms the basis for a memo to cabinet.
- **Referral:** Plans and in particular problem areas are referred to various bodies that can help provide fresh impetus. These include various cabinet sub-committees and via the Cabinet directly to responsible ministers.

⁸ Under the Action Plan for Jobs there is a commitment to monitor and report on progress on Delivering Our Green Potential to the Cabinet Committee on Climate Change and the Green Economy. The Action Plan for Jobs also lists specific actions related to the environment, such as reducing the number of waste regions from ten to three or implementing the green public procurement action plan.

- **Reporting and Review:** Progress is classified as delayed or complete. Where projects are delayed sufficient information must be provided to allow the monitoring committee assess the validity of the reason for delay. The Secretariat use its expertise—or contacts where areas are outside their own expertise—to assess plans and their ambition. They will also occasionally follow-up on specific outputs—such as a workshop or trade event—to identify the impact on sales or jobs.
- **Case-studies:** In a number of areas the Secretariat have provided short case studies to help communicate the impact the Plans are having at the front-line.

Table 2: Components of the Action Plan for Jobs Process

Overarching Action Plan for Jobs	<p>Annual plans are developed by Department of Jobs, Enterprise and Innovation and Forfas.</p> <p>Plans are developed in consultation with Government departments and agencies. There is also a process of consultation with industry. Plans were published in 2012 and 2013.</p> <p>APJ 2013 contains 333 actions and engages 16 Government departments and 46 agencies.</p>
Monitoring Committee	<p>The Monitoring Committee is jointly chaired by the Secretary Generals of Department of An Taoiseach and Jobs Enterprise and Innovation. Its members are drawn from those departments and Public Expenditure and Reform.</p> <p>The function of the Monitoring Committee is the monitor the implementation of the Action Plan. It is supported in this work by a small secretariat. The Secretariat is based in the Department of An Taoiseach but includes staff drawn from Forfas.</p>
Steering Groups	<p>A number of steering groups, chaired by Assistant Secretaries, have been established to support the work on the seven Disruptive Themes. Six senior executives from industry are members of the steering groups, with some serving on more than one group.</p>

It is interesting that one of the most developed sectors in the Action Plan for Jobs—in terms of including very specific outcomes some of which include targets for jobs to be created—is food and agriculture. In this sector, there is an underlying process in place, which seems similar in structure to that in the Action Plan for Jobs. This process is led by a Minister and constructed around sectoral ‘activation’ groups and ad hoc groups. This includes very specific annual milestones.

One of the distinctive characteristics of the Action for Jobs process is the technical or sectoral level expertise of the Secretariat. The Secretariat prioritise actions;

anticipate potential difficulties; and identify recurring themes—e.g. legislative delays—identified. The approach relies on departments and agencies to provide detailed analysis in relation to progress, almost on a monthly basis. In particular, as noted above if plans are delayed sufficient information must be available to allow the Secretariat and the Monitoring Committee to understand and verify reasons for inaction. This analytical approach would seem to be key to the Department of the Taoiseach's contribution and its focus on ensuring that the planning process is not a 'box ticking exercise' but instead one which adds value.

The political and organisational support deriving from within Department of the Taoiseach remains important. However, the work now taking place on enterprise suggests that this authority is being enhanced or complemented by monitoring and coordination work undertaken by the Secretariat. In this sense, the authority of the centre derives not simply its position in a hierarchy but also from its ability to know what is happening in many diverse and areas and sectors.

This ability to judge the quality of the actions is critical. If actions are more outcome/impact orientated than output focused this judging process becomes more challenging. In our view, it is likely that the process of planning, associated with the Action Plan for Jobs, will need to become more concerned with outcomes. If this is to happen then the question of the analytical capacity that will be required may require further consideration.

In addition, it is likely that as the process continues that there will be a need to find more ways to push departments and agencies to be more ambitious and to take on more challenging action plans. One means of supporting this is consultation. In the Action Plan for Jobs there is consultation with industry. While clearly important there would seem to be limits to this. The main form of consultation elicits from business what might be seen as what business already knows, or a snag-list. These are issues that people in business find to be hampering their ability to trade—costs, administrative bottlenecks, licensing, skills shortages, lack of financial support etc. They are familiar because they arise in the everyday context of doing business.

However, there are also issues for which the answer is not obvious—for example, how to develop an indigenous Irish waste and agricultural anaerobic digestion industry. In these areas there are multiple aspects to the challenge—gate charges for waste, energy tariffs, planning, needs of end users in heating and transport, infrastructure etc. In these areas, enterprise policy needs to do more than consult with industry. It needs to ensure that industry or agencies of the state explore and experiment to figure out how to make things work and to test and build ideas that have scale. The Action Plan for Jobs has a number of plans which would seem to testing ideas—for example, in relation to big data and energy efficiency—and in these areas there may be deeper engagement with industry.

However, the challenge of creating jobs at the scale required will not be solved by dealing with the snag-list. There needs to be much more exploration of new ideas and options, for example: how might retrofit, construction skills and the IT sector connect to ensure that the professionalism of the construction sector is radically improved? There would seem to be a need within the current system to create

space and capacity to test and explore possible projects. The outcomes of this exploratory work needs to be assessed and supported. The types of actions or plans associated with this work, at least at the early developmental stage, are also likely to be more ambiguous.

In addition, the dominant form of consultation is with business. This narrows the spectrum of possibilities. In particular, as attention shifts further towards the role of non-traded and local and community projects in creating employment and opportunity it would seem that there is much that can be learned from consultation and engagement with wider stakeholders.

In conclusion, the Action Plan for Jobs does seem to be an important public sector reform. This section suggests that among the issues which it will need to confront is how will the process ensure that it is continuously improving; that is that it can push departments and agencies to bring forward stretch targets, set more challenging goals; and ensure that there is greater focus on outcomes and impact as well as outputs?

5. Bringing Environment Further In

It is unlikely that the Action Plan for Jobs template could be, or indeed should be, replicated in its entirety in other areas. In areas such as Pathways to Work, Banking, Climate Change or Environment there are distinctive features—ideas more contested, greater political division etc—that suggest the approach would need to be customised. However, the Action Plan for Jobs would seem to provide the starting point in discussion about how to make progress in other areas.

The process suggests that policy statements, like *Our Sustainable Future*, remain important but it also suggests the importance of the underpinning detail and practices. The idea that what gets measured gets done seems to characterise the Action Plan for Jobs. Getting change in the policy system seems in this context more dependent on the development of detailed plans than overarching statements. This could be one key means of integrating economy and environment; the development of detailed proposals, for example, on deposit and return schemes, some of which could be considered within the Action Plans for Jobs framework.

However, as suggested, a key area of challenge for the Action Plan for Jobs process will be its ability to maintain a high level of ambition; to push departments and agencies; and to find and develop new ideas—in areas such as the employment in the non-traded sector.

This section suggests that there is considerable scope for a wider environmental view to act as part of an ongoing stimulus for more ambition. The question of the institutional means that might be needed to support this is something worth exploring further by the Council.

This paper now turns to the greening of the economy. It describes current policy, in particular the Government policy statement *Delivering Our Green Potential*. It also considers a wider green economy view by drawing on work carried out by the Green Economy Group.

The section puts forward three propositions:

- **First**, it suggests that current policy is now quite environment-aware but that the impact of the environment on the economy could be enhanced by focusing on strategic areas particularly suited to the Irish context, namely wind, food & agriculture and retrofit;
- **Second**, it suggests that while current policy might be seen to diverge from a wider greening economy view, the difference might be partially addressed/overcome by parsing the issues. This involves identifying those which seem to go with the grain of current policy and those which are more challenging and which require further clarification and exploration; and,

- **Third**, it suggests taken together, the first two propositions direct attention to the need for deeper consideration about the integration challenge as one which will require different types of action. The effect of this may be to make the greening agenda more manageable for an already resource-constrained policy system.

Current Green Economy Policy in Ireland

Economic growth is conventionally thought of as the process through which workers, machinery and equipment, materials and new ideas and technologies contribute to producing goods and services that are increasingly valuable for individuals and society.

A green-growth framework attempts to build on this basis by also taking account of changes to all types of capital: natural (e.g. ecosystems), human (e.g. education and skills), physical (e.g. machinery and equipment), and the intangible assets that are so crucial to human progress like ideas and innovation. It attempts to incorporate the dual role played by natural capital in this process: by providing crucial inputs, but also by providing direct benefits to individuals and society (e.g. through the effect that the environment has on health, amenity value, or through provision of ecosystem services).

Green growth, according to the OECD, means ‘fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our wellbeing relies’ (OECD, 2012: 9). The contribution of natural capital to production is often not priced and the contribution of natural capital to individual welfare is not appropriately valued. Traditional economic growth may, therefore, undermine the natural capital base upon which it rests, this in turn imposes costs on human well being, especially that of future generations.

Delivering Our Green Potential is a government policy statement which examines the potential of the green economy in Ireland (Department of Jobs, 2012). It argues that Ireland has significant strengths and advantages which it can leverage to exploit business opportunities in the green economy. Key among these are natural assets and the expertise and research base. It notes that Irish natural assets—clean air and water, consistent wind, ocean resources, natural landscape, and rich biodiversity—provide a strong platform for the development of the green economy that surpasses the potential of many other countries (foreword). The policy statement argues that as well as having the potential to be a key contributor to economic growth, it can also help achieve greater sustainability in relation to the use of the finite resources at our disposal stating that ‘The protection of the environment and the development of the Green Economy are integrally connected’ (foreword). It states therefore that developing the potential of the Green Economy for Ireland will be done in a complementary way to the Government’s Framework for Sustainable Development, *Our Sustainable Future*, which was published in 2012.

Table 3 provides a summary of the various sectors that are covered in the policy statement. There are ten discrete sectors including an R&D sector which cuts

across many of the other sectors. For each of these sectors the statement identifies the work that is taking place. It draws attention to existing policy documents covering these sectors and new policy work. In addition the policy statement identifies a number of enablers or cross-cutting themes. These include technological convergence—particularly between ICT and biotechnology; training and education; standards, biodiversity and branding.

It is worth highlighting that biodiversity is included as one of the enablers of the green economy. The report states that there is a clear link between the protection of Ireland's biodiversity and the economy (Department of Environment, Community and Local Government, 2012: 42). Sectors such as agriculture, forestry, tourism, marine fisheries and aquaculture are seen as reliant on effective conservation and management of natural resources. The report notes that Ireland's national ecosystem services have been valued, (Bullock *et al.*, 2008) in terms of their productive output and human utility, at over €2.6 billion per year. In this context, the report argues that 'implementation' of Ireland's national Biodiversity Plan (Actions for Biodiversity 2011-2016) will play a key role in protecting our diversity and ecosystems.

Table 3: Green Economy Sectors and Current Policy

Sectors	Policy
Renewable Energy <i>Wind, Ocean ,Biomass & Grid Development</i>	<ul style="list-style-type: none"> • Delivery of the Strategy for Renewable Energy 2012-2020 • Offshore Renewable Energy Development Plan • National Bioenergy Strategy
Energy Efficiency and Resource Efficiency <i>Buildings, Industry, Grid Smart Meters & Public Procurement</i>	<ul style="list-style-type: none"> • Second National Energy Efficiency Action Plan • Energy Framework for the Public Service • Better Energy programme to upgrade 1 million buildings • Introduce Pay As You Save schemes by 2014 • Green Tenders: An Action Plan on Green Public Procurement
Green Products and Services <i>Equipment, materials, operations, management and research</i>	<ul style="list-style-type: none"> • Support for commercial cleantech companies • Green clusters—such as Greenway (Dublin), Cleantech Centre (Limerick) • Innovation Campus for ‘research—active’ cleantech
Green IFSC <i>Capital markets, investment banking and advisory services</i>	<ul style="list-style-type: none"> • Green ‘IFSC’ Strategy for Ireland’s International Financial Services Centre 2011-2016 • New Seed and Venture Capital scheme (post 2012)
Agriculture, Marine and Forestry Food Products; <i>Food, energy, tourism, recreation & ICT</i>	<ul style="list-style-type: none"> • Food Harvest 2020 (2010) • Origin Green—carbon footprint monitoring (2012) • Harnessing Our Ocean Wealth—An Integrated Marine Plan for Ireland (July 2012) • Forestry Policy Review—capacity of the sector to expand
Tourism <i>Heritage sites, outdoor leisure, eco-tourism & conventions</i>	<ul style="list-style-type: none"> • Green Hospitality Programme (accreditation)
Waste Management <i>Public support, municipal recovery, & market development</i>	<ul style="list-style-type: none"> • National Waste Policy—A Resource Opportunity • Market Development Programme 2008-2013
Water Management <i>Water stress/drought & test-bed</i>	<ul style="list-style-type: none"> • EPA and EI led active research coordination group (2010) Water Services Investment Programme • Establishment of Irish Water
Transport <i>Soft services; test-bed activity; intelligent transport</i>	<ul style="list-style-type: none"> • Incentives for EVs—with review after 2012
R&D	<ul style="list-style-type: none"> • Priorities: Sustainable Food Production and Processing; Marine Renewable Energy & Smart Grids & Smart Cities. • EPA’s research programme, STRIVE • Research Stimulus Fund (RSF) for agriculture • Food Institutional Research Measure (FIRM) • Forestry Research Programme (CoFoRD) • Strategy for Bioeconomy⁹

⁹ The term “Bioeconomy” encompasses the sustainable production of renewable biological resources and their conversion—and that of waste streams—into feed, food and biobased products such as bioplastics, biofuels

Delivering Our Green Potential describes the various sub-sectors of the Irish green economy. There may be an argument for a deeper probing of a small number of strategic priorities. Internationally, many countries have already established national strategies which focus on specific areas. Table 4 provides a summary of the key players in the global clean tech sector and their strategic priorities. In Ireland, there may be merit in identifying a number sub-sectors which are aligned with specific features of the Irish context.

Table 4: Overview of National Cleantech Strategies

Country	Strategic Priorities
China	Wind, hydro and solar (in addition it has large reserves of shale gas)
South Korea	Smart grid, EVs and solar
France	Shift from Nuclear (75% to 50%), offshore wind and hybrid vehicles
Germany	Energiewende—PV, wind and AD
UK	Offshore wind and smart metering (and shale gas)
US	Shale gas, ethanol, wind and major smart grid projects
Brazil	Ethanol, flex-fuel vehicles, wind and waste and recycling
Denmark	Wind onshore and offshore and wind energy technologies and R&D
Israel	EVs (Better Place battery recharging), water desalination and drip irrigation system and water recycling (75%)

Source: Ernst and Young, Cleantech Strategic Insights, May 2013.

It may be worth considering if there are particular natural endowments (such as wind and land-based agriculture) or challenges (low quality of the existing housing stock and scale of unemployment in the construction sector) which might provide a basis for a targeted national strategy. Combining how we manage these endowments or challenges with the ICT skills and technologies that now exist in the economy would seem to offer a fertile basis upon which to formulate a focused national cleantech strategy. The development of such a strategy would also allow a more searching examination of the domestic and international employment potential associated with products and services in these sectors.

and bioenergy. In Ireland, the key elements of the Bioeconomy are the agri-food and fisheries sector, forestry and bio-pharmaceuticals.

In this context, it is worth noting the global potential of these sectors. In 2012, Ernst and Young estimated that just under \$300bn was invested in clean tech energy systems.¹⁰ The scale of opportunity associated with cleantech is very significant. Focusing on buildings and construction, they note that it is expected that the total market for energy efficient building products and services is expected to increase more than 50 per cent from US\$67.9 billion in 2011 to US\$103.5 billion in 2017. In the same review, it is noted that McKinsey projects that China will be constructing about 40 billion square meters of floor space by 2025; and that major Indian cities such as New Delhi, Mumbai and Bangalore are likely to need an additional 20 million square feet of office space per year to keep pace with the economy's growing services sector. In the US and in other developed markets where most of the building stock was constructed prior to 1990, the demand for building energy efficiency products is largely in retrofitting and energy management.

Greening the Economy—Working Towards A Broader View

As noted in the Section 2 policy is becoming more aware of the potential and importance of environment. However, the broadening that is underway could be said to be enterprise centric. That is, it is predominantly a search to find ways that businesses or individuals can produce and/or consume products and services at lower cost to the environment. The primary purpose of this search is to find ways to reduce costs and improve competitiveness. This is an integral part of the greening of the economy; however there are other ways in which the economy might be greener.

This section looks at one set of arguments for a broader view. It concludes that there is scope for convergence with many aspects of the broader view. There are other areas which require further consideration and development. In these areas it would seem important that no limits are set on how far specific ideas might re-shape dominant thinking.

The Green Economy Group is an ad hoc group of members of the Irish Environmental Pillar. In 2012, it produced a detailed report which mapped out the multiple ways in which the economy might be greener. The difficulty in policy terms is how to digest or act upon the wide set of actions that flow from this analysis. However, while the greening agenda is broader than current policy envisages it may be that the difference is less than one might imagine. Table 5 summarises the various ways of greening the economy and makes a very basic assessment of those greening items which seem are close to or already in line with current Government policy and a subset which would seem more challenging.

¹⁰ Cleantech refers to technologies and business model innovation that enable the transformation to a more resource efficient and low carbon economy. The sector includes: renewable energy systems (wind, solar, biomass); clean energy production technologies (e.g. wind turbines); clean energy services (e.g. installation and management, energy service companies); building and retrofit; and clean building products; and water production and conservation.

Table 5: Greening Economy: A Broader View

Part A: With the Grain of Current Government Policy	
Green Jobs	Jobs in businesses that produce goods and provide services that benefit the environment or conserve natural resources
Procurement	Prioritise implementation of government policy on green procurement
Training	Youth unemployment and green jobs and innovation and creativity in training methodologies
Innovation	Greater focus on sustainability and Green Way as prototype
Cooperatives	Update legislation to give level playing field for all enterprises
Investment Programmes	Objective assessment, job creation potential and sustainability indicators and knock-on effects on public health, and fund for matching resources for range of EU resources
Sustainability	Step-up in corporate social responsibility and 'proper enforcement of environmental law (including new Wildlife Crime Officers)
Part B: Needs Further Development and Active Exploration	
Monetary Policy	Investigate mechanisms for moving away from debt based money and for developing local currencies
Employment	Reduce the working week to alleviate unemployment
Taxation	Ensure that both taxes and expenditure, including subsidies, incentivise sustainability and employment. Key issues include site value tax, taxation of resource use and pollution.
Reform of the Euro	Reform of the Euro and its governance is that it is capable of fulfilling its role in a sustainable economy
Constitution	Include right to clean and healthy environment in terms of Constitutional Convention

Source: Derived from Creating Sustainable Employment by Greening the Economy, Green Economy Group (2012).

Part A of Table 5 lists areas where there would seem to be alignment between current policy and the broader greening view. The issues listed include the definition of green jobs, procurement, training, innovation and role of cooperatives. In relation to green jobs the report provides a comprehensive definition. Drawing on the US Bureau of Labour Statistics it defines green jobs as jobs in businesses that produce goods and provide services that benefit the environment or conserve natural resources (Green Economy Group, 2012). It also includes workers duties in making their establishments processes more environmentally friendly or use fewer resources. The jobs are linked to five areas: energy form renewables, energy

efficacy, pollution reduction and removal, and green house gas reduction; natural resource conservation and environmental compliance, education and training. This definition of green jobs would seem largely in line with current policy. The other issues listed in the Part A would seem to be already largely included in current policy. For example, in relation to other issues such as innovation, the recently completed Research Prioritisation Exercise includes three specific priorities, of 14, that are linked to sustainability. These are sustainable food production and processing; marine renewable energy and smart grids and smart cities. This does not mean that there are not particular ways in which policy in areas such as innovation or procurement might be made greener. However, in these areas the arguments associated with broadening the green economy can be seen to be going with the policy grain, as such these elements of the broader greening agenda would seem to have a greater chance of being more easily and immediately integrated into and used to improve existing policy.

Additionally, in relation to sectors, the Greening Economy Group provide some specific suggestions which may not be fully reflected in current policy. For example, the development of development of wool and wood based insulation products, labour intensive high value added fishing sub-sectors and a deposit and return scheme. It would seem feasible that concrete ideas such as these could be considered in the formulation of the next Action Plan for Jobs.

However, we would suggest that engaging with these ideas would need to be done without setting predefined limits on how much they may challenge existing approaches. Thus, consideration of how to develop more labour intense fishing could have could have profound consequences for our marine policy. Engaging with specific issues and being willing to follow-through and consider their consequences is likely to be a key means of integrating environment further into economic policy.

Part B of Table 5 lists aspects of the greening agenda that would seem to be more challenging for Government. This does not mean that all of these issues are necessarily at odds with government policy. In particular the discussion of taxation—the thrust of which is the need to transition to more reliance on taxing use of resources and pollution—is not something government is likely dispute. It has been argued that the potential for environmental tax reform in Ireland, based on established practices across Europe, could be to raise environmental taxes on environmental “bads” such as pollution and the inefficient use of resources to 15-20 per cent of total tax revenues by 2015, from 8 per cent today (in 2010) (European Environment Agency, 2010). The study includes proposals to introduce water charges, water abstraction charges, levy on aggregates, taxes on pollutants, tax on packaging, further energy and transport taxes and a land value tax (*ibid.*:7). Some of the specifics discussed within that report are now part of Government policy, such as water charges, air travel; others are not but this does not mean that they may not become so in future. It would seem that the role environmental tax reform is acknowledged in Ireland, however, the design and implementation of new taxes is complex.

In other areas, such as monetary policy and employment the report is arguing for more radical policy change. These will be more challenging for the policy system

but this does not mean that the issues are not worthy of further consideration and development. In these areas local level projects and experimentation—rather than immediate action on behalf of Government—is likely to be key to their future integration into mainstream policy.

One emerging area worth considering for such current experimentation is natural capital accounting. In this area, there is overarching policy work taking place in the UK and elsewhere but as Box 3 shows this depends in a very important sense on working out how aspects of natural capital will be measured in very specific circumstances. In an Irish context this type of work could be usefully employed to enhance the work on sustainability indicators that is now being undertaken by the CSO. There has been some policy support for such accounting. As previously mentioned, the Department of Jobs, Enterprise and Innovation argue in *Delivering Our Green Potential* that the value of eco-system services and biodiversity to the economy should be captured and monitored so as to ensure sustainable drawdown and protection of these natural assets.

Box 3: Natural Capital

Natural capital, like financial capital, can yield dividends in the form of benefits and services (Juniper, 2013). Natural capital refers to elements of nature which generates value for people by either directly provide benefits or underpinning human wellbeing. It includes, for example, the purifying effects of wetlands and oysters on water. If this is to be valued and costed where natural capital is being depleted then accounting mechanisms need to change. In the first instance, this will require the development of non-monetary indicators or measures of sustainability and environmental quality. Twenty years ago Agenda 21 identified the need for a systems approach to monitoring the transition to sustainable development and proposed a specific solution: the development of integrated environmental and economic accounts (Mazza *et al.*, 2013).

In the UK the Natural Capital Committee in DEFRA, chaired by Dieter Helm, has begun examine how changes in natural capital could be included in national and corporate accounts. It is considering detailed issues such as the valuation of forestry assets, habitats for wild birds and in more general terms a research agenda on natural capital to inform future collaboration with research councils.

The UK National Ecosystem Assessment (UK NEA), published in 2011, was the first comprehensive analysis of the UK's natural environment in terms of the benefits it provides to society and continuing economic prosperity. It was an inclusive process involving many governments, academic, NGO and private sector institutions.

In addition, the Economics of Ecosystems and Biodiversity Initiative (TEEB) is an ongoing international project which began under the Convention of Biological Diversity in 2007 and which examines and promotes the economic aspects of protecting biodiversity (TEEB, 2011).

6. Conclusion

The challenge of integrating environment and economy is complex, for a number of reasons. Some of these apply in most countries most of the time, and some are particularly relevant at times of economic crisis, unemployment and fiscal constraints. *First*, in most democratic countries public policy and politics tends to be strongly influenced by economic concerns, but interest in environmental protection certainly tends to increase with national income. *Second*, environmental issues, and the policy instruments that can address them, do not fall within the control of a single government department or agency; effective policy responses to cross-cutting issues are a challenge to all modern government systems which find it hard to incentivise and coordinate action across policy silos, and not just in the environmental area (See Box 4). *Third*, in times of acute economic crisis, unemployment and fiscal deficit, policy priorities tend to narrow in ways that can, but perhaps don't have to, weaken the focus on the environment and sustainable development. *Fourth*, in the past decade there is, internationally, much greater awareness that long-term prosperity is dependent on ecology, but the practical implications of this, and its interaction with short-term economic concerns, is only being discovered gradually. While gross damage to water sources and large-scale waste disposal are widely seen as wrong—in economic, environmental, social and health terms—the cost of losing biodiversity can be opaque and practical implications of protecting it while improving prosperity remain unclear to many economic actors. *Fifth*, it should not be surprising that real integration of economic and environmental perspectives is challenging; during the past decade it took several years of analysis and discussion for the Council to formulate a more integrated perspective on economy and society in the *Developmental Welfare State*. In the case of both society and environment it is relatively easy to enunciate the need for an integrated approach, but hard to make this real and comprehensible.

A key purpose of this paper is to help to discussion of the ways in which the environmental agenda has been integrated into Irish policy and how this can be taken further. As in other countries, there are a range of successful and less-successful approaches. As in other countries, the way in which environmental and sustainability issues are formulated and institutionalised in the policy system and society matters. There is more than one way of successfully integrating sustainability and more than one way of failing. The adoption of encompassing high-level strategies and frameworks can help in certain contexts, but is certainly no guarantee. The listing of concrete policy actions, and coordinated monitoring of their execution, seems to help—but depends on their political adoption and an unambiguous assignment of responsibility to particular departments and agencies.

Box 4: Departmental Responsibilities for Environment

Department of Environment, Community and Local Government: Responsibility for environmental planning and development, water quality and climate change and includes housing, protect and improve water resources and the quality of drinking water; environmental protection; sustainable and balanced development; & monitor, analyse and predict Ireland's weather and climate.

Department of Communication, Energy and Natural Resources: Responsible for security and reliability of energy supply & to develop energy conservation; Natural Resources, Petroleum Affairs, Exploration, Mining, Geology & Inland Fisheries. Through its agencies for the conservation and management of freshwater fish and some marine fisheries, for renewable energy and Bord na Móna.

Department of Agriculture Food and the Marine: Responsible for policies and funding programmes in the areas of agriculture, food, fisheries, forestry and rural environment.

Department of Arts, Heritage and Gaeltacht: Heritage remit includes built and natural heritage functions, including a range of policy, regulatory, educational and promotional roles—focus on biodiversity, natural parks and wildlife. This includes the enforcement of wildlife legislation, designation and protection of Natura 2000 sites (Special Areas of Conservation and Special Protection Areas), management of State-owned National Parks and Statutory Nature Reserves, scientific research and monitoring programmes, preparation of species action plans etc.

Other departments include the **Department of Transport, Tourism and Sport** (Sustainable Transport); the **Department of Foreign Affairs and Trade** (sustainable development and trade); the **Department of Public Expenditure and Reform** (has input to green procurement, sustainability assessment, sustainable development indicators).

For all these reasons, this paper suggests the need to think carefully about the institutional means of connecting environment and economy. In this context, it is certainly worth noting that the food and agriculture agenda has aligned itself closely with the Action Plan for Jobs in large measure because the Department of Agriculture, Food and the Marine has created a government-led process which develops and monitors specific plans.

On environment and sustainability, it useful to ask two questions—one immediate and concrete, and one more exploratory:

- First, has the full job potential of environment-oriented actions been explored and incorporated in the Action Plan for Jobs, and if not, how can this be done in the short term?; and
- Second, could we identify short-term actions or projects, and institutional processes, which open up exploration of the more far-reaching perspectives on sustainability—such as the circular economy and zero waste?

In the face of the nature and scale of this crisis and the profound challenge of creating employment in local areas it is worth asking how might stakeholders be empowered to bring forward and develop proposals which could have both short-term benefits and, potentially, transformative effects on our future economic model, such as the closed loop factory, discussed at the start of this paper, or a regional biodiversity plan, or zero waste cluster of firms.

Annexes

Annex 1: Selected Key Policies and Reports of Environmental Significance

Ireland's Environment: An Assessment (EPA, 2012)	The four-yearly state of the environment report, provides an evidence-based assessment of the current state of the environment in Ireland and the pressures being placed on it. Four key challenges: Valuing and protecting our natural environment; Building a resource-efficient, low-carbon economy; Implementing environmental legislation; Putting the environment at the centre of our decision-making.
Our Sustainable Future (DECLG, 2012)	This is an overarching national policy framework for sustainable development. It aims to provide for the integration of sustainable development into key areas of policy, to put in place effective implementation mechanisms and to deliver concrete measures to progress sustainable development. Its objectives are to: (i) Identify and prioritise policy areas and mechanisms where a sustainable development approach will add value and enable progress towards the strategy aims; (ii) Highlight and promote existing sustainable practices that, with the correct support, can underpin sustainable development more generally; (iii) Strengthen policy integration, coherence and co-ordination and bring a long-term perspective to decision-making; (iv) Set out governance mechanisms which ensure effective participation within Government and across all stakeholders; (v) Set out clear measures, responsibilities and timelines in an implementation plan; (vi) Set out how progress is to be measured and reported on through the use of indicators; (vii) Incorporate adequate and effective monitoring, learning and improvement into the Framework process.
Delivering Our Green Potential (DJEI, 2012)	This policy strategy outlines the potential of the green economy for Ireland across: renewable energy; resource efficiency and energy efficiency; green products and services; green financial services; agriculture, marine and forestry; tourism; waste management; water management; low carbon transport; research development and innovation and other areas.
Harnessing our Ocean Wealth (DAFM, 2012)	This Integrated Marine Plan (IMP) sets out a roadmap for the Government's vision, high-level goals and integrated actions across policy, governance and business to enable our marine potential to be realised. It envisions ocean wealth as a key element of economic recovery and sustainable growth. Three high-level goals are included which focus on market opportunities and sustainable growth; achieving healthy ecosystems; and to increase engagement with the sea. It includes targets to: Double the value of our ocean wealth to 2.4% of GDP by 2030; Increase the turnover from our ocean economy to exceed €6.4bn by 2020.

Strategy for Renewable Energy 2012-2020 (DCENR, 2012)	The Framework within which Ireland has set out the detailed schemes, policies and measures underway and planned to deliver the trajectory of growth from renewable sources. This includes energy demand reduction, growing the renewable energy sector and five strategic goals: (i) Progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets; (ii) A sustainable bioenergy sector supporting renewable heat, transport and power generation; (iii) Green growth through research and development of renewable technologies including the preparation for market of ocean technologies; (iv) Increase sustainable energy use in the Transport sector through biofuels and electrification; and (v) An intelligent, robust and cost efficient energy networks system.
Food Harvest 2020: A Vision for Irish Agri-food and Fisheries (DAFF, 2010)	In 2010 an industry-led group developed a strategy for the food sector. At the time exports from the sector were €7.88bn and €12bn was set as target for 2020; progress to date suggests that this can be achieved. The strategy is based on increasing the output and the value-added of the sector. It argues that more resources must focus on 'the opportunity presented by consumers who demand the highest quality in production and environmental standards, expect clear visibility on sustainability issues and, crucially, are willing to pay a premium for this' (Department of Agriculture, Fisheries and Food, 2010: 3). In 2012 the Department of Agriculture, Food and Marine invited tenders from independent consultants to undertake an analysis and prepare a report on the likely impacts which might result from the implementation of Food Harvest 2020 targets. We understand that this analysis is currently being finalised.
Green Tenders, An Action Plan on Green Public Procurement (DECLG, 2011)	The public sector's total purchasing power is approximately €15 billion per year. This Action Plan on GPP commits the public sector to playing a sustainability role through its procurement activities. It seeks to build on existing legislation and public policy goals in the fields of procurement, environmental protection, social policy and fostering innovation. Including in its actions are that Government Departments and Agencies with a procurement role shall progressively integrate green criteria into public sector tendering processes, as appropriate.
Actions for Biodiversity 2011-2016: Ireland's National Biodiversity Plan (DAHG, 2011)	The overarching target of this plan is 'That biodiversity loss and degradation of ecosystems are reduced by 2016 and progress is made toward substantial recovery by 2020'. It contains 7 objectives: (i) To mainstream biodiversity in the decision making process across all sectors; (ii) To substantially strengthen the knowledge base for conservation, management and sustainable use of biodiversity; (iii) To increase awareness and appreciation of biodiversity and ecosystems services; (iv) To conserve and restore biodiversity and ecosystem services in the wider countryside; (v) To conserve and restore biodiversity and ecosystem services in the marine environment; (vi) To expand and improve on the management of protected areas and legally protected species; and (vii) To substantially strengthen the effectiveness of international governance for biodiversity and ecosystem services.

A Resource Opportunity: Waste Management Policy in Ireland (DECLG, 2012)	This policy statement sets how to implement the waste hierarchy set out in the Waste Framework Directive by aiming for more prevention, reuse and recycling and so that we reduce the impact of waste on the environment. This includes a focus on waste management; waste prevention and the national Waste prevention programme; reuse and recycling; recovery and disposal.
Sustainability Development Indicators Ireland (CSO, 2013)	A first report of its type, these indicators are presented under four domains: Global Indicators; Economy; Social; and Environment. ¹¹ Key environmental indicators include GHG emissions, forestry levels, water quality, energy use, natural habitats and birds.
Ireland's Second National Energy Efficiency Action Plan to 2020 (DCENR, 2012)	This Action Plan follows on from the 2009 NEAP and contains 97 actions, measures and Programmes which aim to secure a more sustainable energy future for Ireland. Five are to play a key role in the delivery of the national target: (i) Public sector obligations to address consumption, procurement and reporting of energy use; (ii) Establish a national Energy Performance Contracting (EPC) process to deliver innovative models of retrofitting and financing of energy efficiency measures in the commercial and public sectors. (iii) Introduce a Pay-As-You-Save (PAYS) model for Ireland to replace existing Exchequer supports for domestic and non-domestic energy efficiency upgrade measures. (iv) The Better Energy programme will deliver energy efficiency savings across a number of sectors and (v) A Cross Departmental Implementation Group will be established to ensure that all the actions contained in this Action Plan are delivered.
Review of National Climate Policy (DECLG, 2011)	This review sets out the challenges remaining to meet 2020 targets. It concludes that 'In terms of a long-term national vision of a carbon-constrained world, Ireland is faced with both the challenge of addressing a unique greenhouse gas emissions profile and the opportunity to position itself as an enlightened society with an environmentally sustainable and competitive, low-carbon economy'.
Ireland and the Climate Change Challenge: Connecting How Much with How To (NESC, 2013).	This report sets out the NESC Secretariat's vision for Ireland in 2050, and the key building blocks that can underpin it. It outlines a way of thinking about the challenges—of climate-change policy and the global resource crunch—and proposals for a pragmatic approach involving simultaneous action along three tracks. It includes Five Guiding Principles for Climate Action to underpin Ireland's strategy to become a carbon-neutral society. These are: (i) Economic prosperity, recovery and social development; (ii) Incremental and permanent decarbonisation; (iii) Responsibility, integrity and leadership; (iv) Reform of public institutions and governance; and (v) societal engagement

¹¹ The CSO (in 2013) state outline that for the next edition it is planned to have a broader set of environment-related social and economic data such as on well-being, quality of life, raw material consumption, and the green economy. The availability of data on areas such as biodiversity and the ecosystem will have to be improved so that more indicators on those areas can be included in future publications.

Annex 2: Selected EU/International Policy and Legislative Context

EU 2020	The EU 2020 strategy aims to ensure smart, sustainable and inclusive growth and, includes a focus on sustainable growth, better use of resources and the green economy. One of its 5 headline targets is on climate change and energy sustainability. It puts forward seven flagship initiatives to set the EU on the path to this transformation including a focus on resource efficiency.
EU 7th Environmental Action Programme proposal (under consideration) <i>Living Well within the Limits of our Planet</i>	EU environmental action programmes provide strategic environment policy focus and direction. These proposals set out a vision— <i>In 2050, we live well, within the planet's ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed in ways that enhance our society's resilience. Our low carbon growth has long been decoupled from resource use, setting the pace for a global sustainable economy.</i> The Commission proposes to focus action on nine priority objectives including three thematic objectives: Natural capital; Resource efficient, low-carbon economy and health and well-being. These are supported by an enabling framework on implementation, knowledge, investment and integration.
EU Roadmap to a Resource Efficient Europe	<i>Resource Efficient Europe</i> is a flagship initiatives adopted by the European Council as part of its <i>EUROPE 2020</i> strategy. Its vision is to help move European business, energy systems, farms, households and communities towards a model of growth in which resource constrains and planetary boundaries are respected. Resource efficiency will bring increased competitiveness and new sources of growth and jobs through cost savings from reduced raw material use, commercialisation of innovations and better management of resources over their whole life cycle.
Our Life Insurance, our Natural Capital: an EU Biodiversity Strategy to 2020	The EU strategy has six main targets which focus on: full implementation of EU nature legislation; better protection for ecosystems and more use of green infrastructure; more sustainable agriculture and forestry; more sustainable fisheries; tighter controls on invasive alien species; and a greater contribution to averting global biodiversity loss.
OECD Environmental Performance Review of Ireland 2010	This report analyses the extent to which Ireland has met its national objectives and international commitments regarding the management of the environment and natural resources. It noted that environmental policies had been improved and that environmental institutions had been strengthened. Overall, Ireland was judged to have generally good air and water quality and an energy intensity (energy use per unit of GDP) that was the lowest among OECD countries. Some significant challenges were identified in relation to climate change, water resources and public participation.
EU Waste Directive	This Directive underpins the drive towards seeing waste as a resource by clarifying the concepts of by-products in addition to end of waste criteria, thus providing a high level of environmental protection and economic benefit.
EU Habitats Directive	The Habitats Directive (more formally known as Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora) is one of the EU's two directives in relation to wildlife and nature conservation, the other being the Birds Directive. It aims to protect some

	<p>220 habitats and approximately 1,000 species listed in the directive's Annexes. It led to the setting up of a network of Special Areas of Conservation, which together with the existing Special Protection Areas form a network of protected sites called Natura 2000.</p>
<p>EU Water Framework Directive</p>	<p>This directive (2000/60/EC) aims to achieve good qualitative and quantitative status of all water bodies (including marine waters up to one nautical mile from shore) by 2015. It includes protecting all waters and water dependent ecosystems: groundwater, rivers, lakes, transitional waters (estuaries), coastal waters and wetlands. The Directive requires an integrated approach to managing water quality on a river basin basis; with the aim of maintaining and improving water quality. It prescribes steps to reach the common goal rather than adopting the more traditional limit value approach.</p>
<p>EU Birds Directive</p>	<p>The Birds Directive (more formally known as Council Directive 2009/147/EC on the conservation of wild birds) and aims to protect all European wild birds and the habitats of listed species, in particular through the designation of Special Protection Areas.</p>
<p>UN Convention on Biological Diversity</p>	<p>This 1993 convention was the first global agreement to cover all aspects of biological diversity: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of benefits arising from the use of genetic resources.</p>
<p>The Aarhus Convention</p>	<p>The 2001 Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, usually known as the Aarhus Convention was ratified by Ireland in 2012. It grants the public rights regarding access to information, public participation and access to justice, in governmental decision-making processes on matters concerning the local, national and transboundary environment. It focuses on interactions between the public and public authorities.</p>
<p>EU Environmental Impact Assessment Directive</p>	<p>This directive (2011/92/EU) (known as 'Environmental Impact Assessment'—EIA Directive) or for public plans or programmes on the basis of Directive 2001/42/EC (known as 'Strategic Environmental Assessment'—SEA Directive). The common principle of both Directives is to ensure that plans, programmes and projects likely to have significant effects on the environment are made subject to an environmental assessment, prior to their approval or authorisation. Consultation with the public is a key feature of environmental assessment procedures.</p>
	<p>The 1992 United Nations Framework Convention on Climate Change (UNFCCC or FCCC) is an international environmental treaty which seeks to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." The treaty itself set no binding limits on greenhouse gas emissions for individual countries and contains no enforcement mechanisms. In that sense, the treaty is considered legally non-binding. Instead, the treaty provides a framework for negotiating specific international treaties (called "protocols") that may set binding limits on greenhouse gases.</p>

Bibliography

- Bullock, C., Kretsch, C. & Candon, E. (2008), *The Economic and Social Aspects of Biodiversity: Benefits and Costs of Biodiversity in Ireland*, Dublin: Government of Ireland.
- Cashman, L. (2012), 'Commission Enforcement of EU Environmental Legislation in Ireland—a 20 Year Retrospective' in Kingston, S. (Ed.) *European Perspectives on Environmental Law and Governance*, London: Routledge.
- Comhar (2011), *Making the Case for Resource Efficiency in Ireland and Options for Taking it Forward: Policy Paper*, Comhar. http://files.nesc.ie/comhar_archive/Comhar%20Papers/Comhar_Paper_9_2011.pdf, 02/08/13.
- Convery, F., McDonnell, S. & Ferreira, S. (2007), 'The Most Popular Tax in Europe? Lessons from the Irish Plastic Bag Levy', *Environmental and Resource Economics*, 38(1): 1–11.
- Department of Agriculture, Fisheries and Food (2010), *Food Harvest 2020: A Vision for Irish Agri-food and Fisheries*, Dublin: Department of Agriculture, Fisheries and Food.
- Department of Environment, Community and Local Government (2012), *Our Sustainable Future*, Department of Environment, Community and Local Government. <http://www.environ.ie/en/Environment/SustainableDevelopment/PublicationsDocuments/FileDownload,30452,en.pdf>, 03/10/13.
- Department of Jobs, Enterprise and Innovation (2012), *Delivering Our Green Potential*, Government Policy Statement on the Green Economy, Dublin: Department of Jobs, Enterprise and Innovation.
- Ellen MacArthur Foundation (2013), *Towards the Circular Economy*, Isle of Wight: Ellen MacArthur Foundation.
- EPA (2012), *State of the Environment report*. <http://www.epa.ie/pubs/reports/indicators/irelandsenvironment2012.html>, 13/09/13.
- European Commission (2011), *Roadmap to a Resource Efficient Europe*, COM 571 final, Brussels.
- European Commission (2013a), *Building the Single Market for Green Products*, Communication from the Commission to the European Parliament and the Council, 9.4.2013, COM 196 final, Brussels: European Commission.
- European Commission (2013b), *Building the Single Market for Green Products in a Resource Efficient Europe*, Presidency Discussion Paper, Informal Meeting of EU Environment Ministers, Brussels: European Commission.
- European Environment Agency (2010), 'Further Environmental Tax Reform—Illustrative Potential in Ireland: Staff Position Paper', Presentation to the Comhar "Sustainable Development Council Workshop", October.
- Green Economy Group (2012), *Creating Sustainable Employment by Greening the Economy*, Dublin: Green Economy Group <http://ien.ie/files/2012/10/Creating-Sustainable-Employment-by-Greening-the-Economy1.pdf>.
- Juniper, T. (2013), *What has Nature Ever Done for us?*, London: Profile Books.
- Mazza, L., Bröckl, M., Ahvenharju, S., Brink, P. & Pursula, T. (2013), *Natural Capital in a Nordic Context: Status and Challenges in the Decade of Biodiversity*, Gaia Consulting Oy and Institute for European Environmental Policy (IEEP) /Norden, Copenhagen: Nordic Council of Ministers.
- Moore, J. (2013), *Social and Behavioural Aspects of Climate Change*, Background Paper No. 3, Dublin: National Economic and Social Council.
- NESC (2005), *The Developmental Welfare State*, Dublin: National Economic and Social Council.
- NESC Secretariat (2011),

Ireland's Economic Recovery: An Analysis and Exploration, Secretariat Paper No. 1, Dublin: National Economic and Social Council.

OECD (2010), *Environmental Performance Review of Ireland*.
<http://www.oecd.org/ireland/environmentalperformance/sireland2010.htm>, 05/11/13.

OECD (2012), *Towards a Green Investment Policy Framework*, Paris: Organisation for Economic Co-operation and Development.

TEEB, Edited by ten Brink, P. (2011), *The Economics of Ecosystems and Biodiversity in National and International Policy Making*, London: Earthscan.

National Economic and Social Council Publications

NESC Secretariat Papers

No.	Title	Date
1.	Ireland's Economic Recovery: An Analysis and Exploration	2011
2.	Understanding PISA and What It Tells Us About Educational Standards in Ireland	2012
3.	Towards a New National Climate Policy: Interim Report of the NESC Secretariat	2012
4.	Ireland and the Climate Change Challenge: Connecting 'How Much' with 'How To'. Final Report of the NESC Secretariat	2012
5.	Review of Developments in Banking and Finance	2013
6.	Employment and Enterprise Policy	2013
7.	Greening the Economy: Challenges and Possibilities for Integrating Sustainability into Core Government Policy	2013
8.	Activation	2013
9.	Consumer Prices	2013

