

**EENGO RECOMMENDATIONS FOR THE  
IRISH NATIONAL SUSTAINABLE DEVELOPMENT STRATEGY**

**INTRODUCTION**

Climate change, oil and gas depletion, soil erosion, water shortages, and biodiversity loss, are among an array of threats that are consequences of a massively consuming and growing population in a finite global ecosystem. This ecosystem provides our food, water, and waste processing; it provides the energy, content and infrastructure of the global economy. Our economic system is a construct of human society, which is only one part of, and dependant upon, the Earth ecosystem.

Climate change, energy security, or biodiversity loss stalks the periphery of our public and political consciousness; but rarely do they undermine our faith in our economic future. As individuals we invest in pensions to be drawn on fifty years hence, and the government invests in long-term infrastructure projects such as roads and airport terminals. Behind this sits our faith in continuing economic growth. We may be warned by our investment advisor that “prices may fall, as well as rise...”, but a collective assumption prevails that market valuations as a whole will revert to an ever upward trend. Our casual relationship with the future is a gentle affirmation of the present.

Learning to live sustainability is a biological imperative; it is absolute in the sense that we must live within the laws of nature. Political imperatives, such as the desire to increase the material standard of living each year, are relative. Sustainable development means that the needs of the present generation to sustain itself should be met without compromising the ability of future generations to meet their own needs, but this also includes our own future and our expectations within it. The corollary is that continued unsustainable development is resulting in the collapse of resources and the human and societal structures they support. These consequences are very serious and systemic and, as limits are reached, we are losing our ability to adapt. We have begun trading critical resources off each other; thus in order to mitigate the effects of climate change (and soon oil peak), we have begun threatening food security, through the use of biofuels. A critical issue is the relationship between the environment and the economy. There is denial of the conflict within this relationship by Irish government, and the EU via the EU Sustainable Development Strategy (SDS) and the Lisbon Agenda that is subject to the SDS. Yet, they cannot deny that there is a conflict when tight limits on greenhouse gasses (GHGs) are proposed; a situation which the US government at least acknowledges.

This conflicting relationship is obscured by confining environmental risk to discrete areas of departmental concern. Were it not so, there would not be a separate National Development Plan, a National Spatial Strategy, a Decentralization Plan, the Framework Social Partnership Agreement “Towards 2016”, and a National Sustainable Development Strategy. But increasingly risks are broad-based. For example, a road construction project is currently assessed on the base of a cost-benefit analysis that assumes continuing economic growth. However peak oil and attendant high prices will likely reduce car numbers, removing the need for the road in the first place. Other maladapted costs are incurred; such as the cost of development of

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commuter housing based on the assumption not only of the road but also of cheap petrol. Opportunity costs are incurred, such as not using the investment resources on public transport; and the loss of fertile land for the road development that would have had high utility when food production was compromised by high energy prices. Similar risk management decisions become important when considering development of flood plains, and marsh land, or potential loss of biodiversity. In all cases the value of their environmental services will be heightened in the context of climate change as they ameliorate the effects of storms, sea-level rises, and changing climate.

We need to acknowledge the predicament we are in, and then identify what we can do to both mitigate the worst effects, and adapt to what may be inevitable.

This EENGO submission recommends radical new visions and policy mechanisms. One of our central themes is that within a market economy, human, social, and the Earth's ecological systems, that are our common inheritance, will be depleted or destroyed, unless they have the same protections as private property. Hence we suggest the establishment of these rights, and a variety of Trusts to administer the Commons Property for the benefit of current and future generations. We also propose human well-being as the appropriate political goal rather than economic growth. It is acknowledged that beyond a threshold level of wealth, well-being no longer increases. Beyond that point, increasing consumption leads to increased environmental risk and other externalised costs.

We are not naive about the political challenges this document presents; we challenge policy makers to be no less naive about the challenges they face.

### **OUR COMMITMENT TO SUSTAINABLE DEVELOPMENT**

We have read and agree with much of the text in the EU SDS Commitment section. Commentary will be forthcoming in our Final Document.

### **KEY OBJECTIVES**

We have read and agree with much of the text in the EU SDS Key Objectives section, with the following exception: We have replaced the Economic Prosperity objective with a Well Being objective (text below). Commentary will be forthcoming in our Final Document.

### **WELL BEING**

Create an economy that promotes a prosperous, innovative, knowledge-rich, competitive and cooperative, and eco-efficient society which provides for well being and a rich quality of life.

### **ECONOMIC PROSPERITY**

Promote a prosperous, innovative, knowledge-rich, competitive and eco-efficient economy which provides high living standards and full and high-quality employment throughout the European Union.

## **POLICY GUIDING PRINCIPLES**

We have read and agree with much of the text in the EU SDS Policy Guiding Principles section, with three additions: Integrated Risk Management, Recognise the People's Property Rights in the Commons, Recognise and Protect People's Right to Communicate (text below). Commentary will be forthcoming in our Final Document.

### **INTEGRATED RISK MANAGEMENT**

Ensure that risk management is broadened to include systemic risks and resilience building.

### **RECOGNISE THE PEOPLE'S PROPERTY RIGHTS IN THE COMMONS**

Propertise the social and ecological commons; give them independent management in trust for their human beneficiaries.

### **RECOGNISE PEOPLE'S RIGHT TO COMMUNICATE**

To enjoy fully the benefits of free speech, to participate in governance, to partake and contribute to the knowledge and cultural commons, open access to the mean of communications is now fundamental.

## **MAKING USE OF SYNERGIES BETWEEN THE EU SDS AND THE LISBON STRATEGY FOR GROWTH AND JOBS**

7. The EU SDS and the Lisbon Strategy for growth and jobs complement each other. The SDS is primarily concerned with quality of life, intra- and inter-generational equity and coherence between all policy areas, including external aspects. It recognises the role of economic development in facilitating the transition to a more sustainable society. The Lisbon Strategy makes an essential contribution to the overarching objective of sustainable development focusing primarily on actions and measures aimed at increasing competitiveness and economic growth and enhancing job creation.
8. The EU SDS forms the overall framework within which the Lisbon Strategy, with its renewed focus on growth and jobs, provides the motor of a more dynamic economy. These two strategies recognise that economic, social and environmental objectives can reinforce each other and they should therefore advance together. Both strategies aim at supporting the necessary structural changes which enable the Member States' economies to cope with the challenges of globalisation by creating a level playing field in which dynamism, innovation and creative entrepreneurship can flourish whilst ensuring social equity and a healthy environment.
9. In this context the EU SDS recognises that investments in human, social and environmental capital as well as technological innovation are the prerequisites for long-term competitiveness and economic prosperity, social cohesion, quality employment and better environmental protection.

### **Critique:**

The EU SDS, the National Development Strategy and the Lisbon Strategy for Growth and Jobs

1. A policy framework that considers it reasonable to separate a sustainable development strategy from a general development strategy does not understand sustainable development.
2. It is emphasized that conventional economic growth is a sub-system of our economic system, which is itself a sub-system of our ecosystem. Our economic system is totally dependent upon energy and

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other resource inputs, and waste sinks provided by our ecosystem, not the other way around. Where there is a discontinuity between inputs needed for an economy, and natural limits, systemic disruptions to the economy can be expected.

3. Not all goods and services in an economy are endlessly substitutable, irrespective of price signals. For example, capital and technology cannot 'make' energy.
4. The claim that further economic growth is necessary for environmental sustainability is erroneous and without empirical support. It is a gross generalization of the environmental Kuznets curve, which only applies in some special cases.
5. The Lisbon Strategy acknowledges the importance of removing perverse incentives and subsidies.
6. Price and propertisation enable both the Lisbon strategy and the SDS to find the fairest and most effective way to manage scarce resources and environmental services.

**BETTER POLICY-MAKING**

10. The EU SDS sets out an approach to better policy-making based on better regulation and on the principle that sustainable development is to be integrated into policy-making at all levels. This requires all levels of government to support, and to cooperate with, each other, taking into account the different institutional settings, cultures and specific circumstances in Member States.
11. In this respect all EU institutions should ensure that major policy decisions are based on proposals that have undergone high quality Impact Assessment (IA), assessing in a balanced way the social, environmental and economic dimensions of sustainable development and taking into account the external dimension of sustainable development and the costs of inaction. Other tools for better policy-making include ex-post-assessment of policy impacts and public and stakeholders participation. Member States should make wider use of these tools, in particular IA, when allocating public funds and developing strategies, programmes and projects.
12. All EU institutions should ensure that proposals for targets, objectives and measures are feasible and, where needed, accompanied by the necessary instruments at EU level.

**Critique**

1. Regulation and exhortation is not sufficient to develop policy for the EU SDS. Price signals through fiscal and other mechanisms should be at the centre of policy.
2. Impact Assessment must be part of a strategic risk management systems that is broad.. Independent impact assessment is critical and can only be assure by the Trusts representing the commons under threat.
3. Beneficiaries of the trust will insure there will be a net social and environmental gain in their interaction.
4. Requirement for feasibility is too open.

**KEY CHALLENGES**

13. Bearing in mind worsening environmental trends, the EU's economic and social challenges coupled with new competitive pressures and new international commitments, the EU SDS identifies 7 key challenges and corresponding targets, operational objectives and actions. Their future design and implementation will be guided by the principles mentioned above. Reference to any particular action is without prejudice to the division of competencies between the EU and the Member States.

**Introduce our new challenges**

Worsening environmental trends will undermine Ireland's economic and social structures unless prompt and visionary action is taken to mitigate these trends, and make a transition to a sustainable society. In addition to the 7 challenges identified in the EU-SDS, we include two more; Food and Fuel Security and Cultural Heritage and Diversity, to acknowledge the danger to the supply of cheap energy, and the consequent effect on food security and the need to preserve human biodiversity of knowledge and experience. Within each section we include a critique of current policy, operational objectives and actions.

## Climate Change and clean energy

Overall Objective:	To limit climate change and its costs and negative effects to society and the environment
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### EU SDS objectives and targets

- Kyoto Protocol commitments of the EU-15 and most EU-25 to targets for reducing greenhouse gas emissions by 2008 – 2012, whereby the EU-15 target is for an 8% reduction in emissions compared to 1990 levels. Aiming for a global surface average temperature not to rise by more than 2°C compared to the pre-industrial level.
- Energy policy should be consistent with the objectives of security of supply, competitiveness and environmental sustainability, in the spirit of the Energy Policy for Europe launched in March 2006 by the European Council. Energy policy is crucial when tackling the challenge of climate change.
- Adaptation to, and mitigation of, climate change should be integrated in all relevant European policies.
- By 2010 12% of energy consumption, on average, and 21% of electricity consumption, as a common but differentiated target, should be met by renewable sources, considering raising their share to 15% by 2015.
- By 2010 5,75% of transport fuel should consist of biofuels, as an indicative target, (Directive 2003/30/EC), considering raising their proportion to 8% by 2015.
- Reaching an overall saving of 9% of final energy consumption over 9 years until 2017 as indicated by the Energy End-use Efficiency and Energy Services Directive.

### EU SDS proposed actions

- Following up the Montreal Climate Action Plan under the UN Framework Convention on Climate Change, the EU is to prepare options for a post-2012 arrangement consistent with meeting the 2°C objective without delay through constructive engagement in a broad dialogue on long-term cooperative action and at the same time through a process under the Kyoto Protocol, in line with the principle of common but differentiated responsibilities and respective capabilities.
- Without prejudging new approaches for differentiation between Parties in a future fair and flexible framework, the EU looks forward to exploring with other parties strategies for achieving necessary emission reductions. The EU believes that in this context reduction pathways by the group of developed countries in the order of 15-30% by 2020 compared to the baseline envisaged in the Kyoto Protocol, and beyond in the spirit of the conclusions of the Environment Council, should be considered.
- In the framework of the second phase of the European Climate Change Programme, the Commission and Member States will prioritise new actions to systematically exploit cost-effective emission reduction options for cars and aviation. In this context carbon sequestration and storage will be explored as mitigation options.
- The Commission will complete a review of the EU Emission trading scheme (EU ETS) in a timely manner, thereby providing medium and long term certainty to investors, and will consider its extension to other greenhouse gases and sectors, specifically aviation as previously called for by the Council.
- The Commission and Member States will strengthen the EU leadership by adopting and implementing an ambitious and realistic Action Plan on Energy Efficiency bearing in mind the EU energy saving potential of 20% by 2020, as estimated by the Commission, and taking into account measures already implemented by Member States.
- The Commission will produce an analysis of how to achieve the existing targets (2010) for renewables and how further to promote renewable

energies in a cost-efficient manner over the long term and in the same way further the use of biofuels in the transport sector accompanied by a constructive dialogue with the oil industry and all stakeholders and giving maximum support to research on and development of 2<sup>nd</sup> generation biofuels. The setting of new targets shall be justified on the basis of thorough analysis of the potential and cost-effectiveness of further measures. Throughout these processes, account should be taken of Member States' specific characteristics and need for flexibility in developing their energy mix as well as of the problems of islands or regions largely isolated from the EU energy market.

- The Commission and the Member States are to promote the use of biomass with a view to diversifying the EU's fuel supply sources, reducing greenhouse gas emissions and offering new income and employment opportunities in rural areas by taking forward proposals in the Biomass Action Plan in all of its three sectors: heating and cooling, electricity and transport. This should be developed in the framework of a long-term strategy for bio-energy beyond 2010.
- Member States should enhance the efficiency of power stations in particular by further promoting the use of combined heat and power.

#### **EU SDS Critique:**

1. The targets are not ambitious enough to meet the target of limiting warming to 2 degC.
2. The modelling and assessments do not include the direct and indirect effects of peak oil, gas, and possibly coal .
3. Bio-fuel targets are problematical for first generation technology.
4. Carbon capture is ignored.
5. The rebound effect will negate the effects of efficiency gains unless there is a corresponding price rise.

#### **Irish Context**

1. In 2007 the Government published it's National Climate Change Strategy.
2. At present it is almost certain that our Kyoto commitments will not be met without emissions trading. Our GHG emissions are already 25% above 1990 levels, when we are committed to an increase of less than 13% by the commitment period 2008-2012.
3. Our energy use has climbed in concert with our growing wealth. Ireland is now the third most oil dependent in the EU.

#### Objectives

- A planned reduction in total energy consumption.

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- An integrated climate protection and energy policy or it may be forced upon us by declines in global oil production, and increasing gas supply problems.
- The Kyoto commitments of Ireland to keep GHG emissions to less than 13% above 1990 levels by 2008-2012 must be met without the purchase of overseas credits.
  - Use price over exhortation, in establishing emission reductions.

#### Actions

- Bring in carbon rationing for domestic consumption of transport and the non-ETS business sector.
  - Set targets for emission reductions reducing 3-4% every year depending on scientific advice divide the emission into sectors; large producer emitters in the ETS, smaller producer emitters, transport and domestic allocate emission rights to citizen's on the electoral register covering the transport and domestic quota require all importers and miners of transport and heating fuel to surrender emission permits covering their CO<sup>2</sup> equivalent outputs
- Lobby at EU level for the ETS to be covered by such a scheme also.
- Lobby for a Cap & Share type system to replace the current EU-ETS post-2012.
- Introduce a climate protection bill that commits governments to long term rolling reductions in GHG emissions.
- Direct Eirgrid to facilitate small and medium scale distributed energy.
- Limit bio-fuel use to what is sustainable.
- Support the introduction of sustainable biofuels certification.
- Support adaptation to climate change by preserving the ecosystem services of wetlands and forests, whose value will rise in the context of stronger storms, sea-level rises, and greater precipitation.
- Support adaptation to climate change by preserving and enhancing bio-diversity.
- Support adaptation to climate change and peak oil by not encouraging mal-adaptation, that is, instituting actions and policies that rely on high energy use but are very difficult economically and socially to reverse. This includes spatial planning and development, road building, and airport building.
- Create a national sky trust to hold and manage the Earth's capacity to absorb and process CO<sup>2</sup> and other GHGs
- Offer emission rights to third countries from the ETS allocation as they expire in 2008 on a first come first served basis, targeting Africa in the first round of offers

## Sustainable Transport

Overall Objective:	To ensure that our transport systems meet society's economic, social and environmental needs whilst minimising their undesirable impacts on the economy, society and the environment
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### EU SDS objectives and targets

- Decoupling economic growth and the demand for transport with the aim of reducing environmental impacts.
- Achieving sustainable levels of transport energy use and reducing transport greenhouse gas emissions.
- Reducing pollutant emissions from transport to levels that minimise effects on human health and/or the environment.
- Achieving a balanced shift towards environment friendly transport modes to bring about a sustainable transport and mobility system.
- Reducing transport noise both at source and through mitigation measures to ensure overall exposure levels minimise impacts on health.
- Modernising the EU framework for public passenger transport services to encourage better efficiency and performance by 2010.
- In line with the EU strategy on CO<sub>2</sub> emissions from light duty vehicles, the average new car fleet should achieve CO<sub>2</sub> emissions of 140g/km (2008/09) and 120g/km (2012).
- Halving road transport deaths by 2010 compared to 2000.

### EU SDS proposed actions

- The EU and Member States will take measures to improve the economic and environmental performance of all modes of transport and, where appropriate, measures to effect a shift from road to rail, water and public passenger transport including lower transport intensity through production and logistic process reengineering and behavioural change combined with a better connection of the different transport modes.
- The EU and Member States should improve energy efficiency in the transport sector by making use of cost-effective instruments.
- The EU and Member States should focus on possible alternatives to road transport for freight and passengers including the appropriate development of the Trans-European Network and inter-modal links for freight logistics, *inter alia* by implementing measures envisaged in the Commission action programme for inland waterway transport "NAIADES" and the "Marco Polo II" Programme.
- The Commission will continue to examine the use of infrastructure charging for all modes of transport drawing on new opportunities arising with new satellite, information and communication technologies. In the framework of the Eurovignette-Directive the Commission will present, no later than 2008, a generally applicable, transparent and comprehensible model for the assessment of all external costs to serve as the basis for future calculations of infrastructure charging.
- The Commission and Member States should strive to make progress towards effective global solutions for the reduction of harmful impacts of international maritime and air traffic.
- With a view to halving road transport deaths as well as reducing the number of injured in road traffic, increasing road safety by improving road infrastructure, by making vehicles safer, by promoting common European-wide awareness campaigns with a view to changing road user behaviour as well as by establishing cross-border enforcement.
- In line with the thematic strategy on the urban environment, local authorities should develop and implement urban transport plans and systems taking into account technical guidance provided by the Commission in 2006 and considering closer co-operation between cities and surrounding regions.

- The Commission and Member States will develop a long term and coherent EU fuel-strategy.

**EU SDS Critique:**

1. There are no goals and actions covering on sustainable multifunctional settlement form i.e laid out to minimise transport demand by people (walking from home to schools, schools, services) and products: food, goods, energy, by spatial integration of different production activities.
2. Weak actions re infrastructure charging
3. Vague actions to tackle maritime and air transport
4. No goals and actions re minimising impact of quarrying for aggregates and cement for road construction
5. Positive recognition of potential of GIS and GPS and satellite data.

**Irish Context:**

1. Ireland has developed along a US rather than European spatial model that makes it the most car-dependent Member State
2. Ireland is almost entirely dependant on the most depleted imported fossil fuel (oil) for transport.
3. Experience and surveys indicate that the demand for transport fuel is extremely inelastic

Objectives and Actions:

- Decouple economic growth and the demand for transport.
  - Cap Irish transport emissions at current level and reduce 4% per annum. Require all importers of transport fuels to surrender permits for fuel imported. Issue equal emissions permits to citizens on the register that they can sell for market value to financial intermediaries who sell them on to fuel importers. This is the essence of the Cap and Share scheme for transport.
  - Fund research into technologies and systems that only use local resources, co-location of points of production, processing, supply and consumption.
  - Foster strong local economies, thereby reducing the need for international movements of goods by fiscal and monetary incentive systems (i.e. local money).
  - Fund further development and application of GIS, GPS using satellite data in transportation logistics.
- Remove perverse subsidies, incentives and investment in unsustainable transport modes and car dependent spatial development
  - Assess real environmental and social costs of road development projects (in concert with the Irish Sky Trust and other local resource trusts) and proceed only where there is genuine short and long term benefit.

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- Co-operate internationally to develop ways to levy duties/charges on aviation and shipping fuel equivalent to road and rail fuels.
- Review antitrust legislation and trade agreements to encourage the development of more rational and efficient patterns of production and distribution.
- Charge real cost of providing public services to non-functional dispersed houses in the countryside
- Require contribution to social and affordable housing (Part V of 2000 Act) from all new residential development including one-off houses in the countryside.
- Design, plan and develop compact walkable settlements and transport reducing spatial patterns
  - Review the National Spatial Strategy to give better support to sustainable village development in rural areas.
  - Rewrite the current decentralisation programme, replace with programme to devolve more power to local authorities.
  - Review the current Rural Housing Guidelines to eliminate car dependency and social discrimination
  - Completely revise recommended road standards for residential neighbourhoods to promote walkability.
  - Require local authorities make sustainable development plans that identify and protect vital natural resources (such as ploughland, sheep run, flaxfield and forest), and energy resources (wind, biomass, biogas, hydro, wave etc.), that provide the basics for human life for every town, village and local neighbourhood.
- Align fiscal incentives and public charges/levies for infrastructure with sustainable land-use planning and development control objectives
  - Require Section 48 and 49 levies to recoup 60% of the value-added to land by zoning, planning permission, infrastructure and services provided; to be paid a fraction annually, the balance on commencement of construction on site.
  - Require that a levy of 60% of value-added is paid on un-zoned land on grant of planning permission - with no exceptions for rural one-off houses
  - Require local authorities to invest the receipts in local infrastructure and local services that support sustainability including shared and public transport
  - Abolish rates on commercial properties and development land and replace with 1% annual land value tax.
  - Abolish stamp duties on property transactions and replace with 1% annual land value tax, on second homes, on rented property, on public and charitable property and on homeowners (but allowable against income tax for existing homeowners).
  - Offer choice of land value tax or conventional taxes on farmland for trial period - extend when

majority accept.

- Halve the volume of road transport by 2012 compared to 2000 AD.
  - Further develop non road systems with particular attention to rail; complete Western Rail Link project.
  - Preserved and develop waterways, coastal and inland seaports, freshwater ports and their attendant facilities.
  - Establish multimodal transport terminals to facilitate the connectivity of the more sustainable with the more wasteful conventional modes of transport, thereby allowing the former to increase without disruption of the system.
  
- Replace fossil fuels by renewables in transport
  - Leapfrog second generation bio-fuels to research and develop demonstration projects in third-generation bio-fuels especially cellulosic technologies such as developed by Biofines?
  - Promote research and demonstration of combined wind/electric car research whereby electricity generated by wind is drawn down by car batteries at night and inputted back into the grid during the day when the car is not in use.
  - Promote research and demonstration of biogas compression for use in agricultural machinery and transportation
  - Preserve and propagate non mechanical and non fossil fuel transport systems and their technologies: e.g. animal traction, sail, wood fired steam, horse, oxen
  
- Reduce impacts and pollution from transport (greenhouse gases, toxins, noise, disturbance etc)
  - Require certification to ensure that all aggregates, sand and cement for road construction is sourced from authorised quarries.
  - Require increasing percentage of recycled construction materials in road construction and topping
  - Require that 75% of cement used in bridges and underpasses is low GHG impact, i.e Ecocem
  - Reduce the obstructive effects of major arterial transport systems at local level (eg the disruptive effect at local level of a motorway).
  - Require that all road drainage is to SUDS (sustainable urban drainage systems) specification
  - Fund research into integration of renewable energy generation along roadways i.e. tree scale wind turbines and lighting masts.

## Sustainable consumption and production

Overall Objective: To promote sustainable consumption and production patterns

### EU SDS objectives and targets

- Promoting sustainable consumption and production by addressing social and economic development within the carrying capacity of ecosystems and decoupling economic growth from environmental degradation.
- Improving the environmental and social performance for products and processes and encouraging their uptake by business and consumers.
- Aiming to achieve by 2010 an EU average level of Green Public Procurement (GPP) equal to that currently achieved by the best performing Member States.
- The EU should seek to increase its global market share in the field of environmental technologies and eco-innovations.

### EU SDS Actions

- The Commission and Member States will explore specific actions to bring about more sustainable consumption and production patterns at EU and global level, in particular through the UN Marrakech Process and the Commission for Sustainable Development. In this context the Commission will propose an EU Sustainable Consumption and production Action plan by 2007, which should help to identify and overcome barriers for SCP and to ensure better coherence between the different related policy areas and to raise awareness among citizens and change unsustainable consumption habits.
- The Commission and the Member States should engage in a dialogue with business and relevant stakeholders aiming at setting environmental and social performance targets for products and processes.
- The Commission and Member States will develop a structured process to share best practice and expertise on GPP taking into account the potential to promote GPP at local and regional levels. The Commission will facilitate regular EU-wide benchmarking of GPP performance, according to an assessment methodology based on agreed and objective parameters, and examine with Member States how best to promote GPP for other major product groups by 2007.
- The Commission and Member States will step up efforts to promote and disseminate social and eco-innovations and environmental technologies, *inter alia* through effective implementation of the Environmental Technologies Action Plan (ETAP) by all actors concerned in order to create new economic opportunities and new markets.
- The Commission will propose extending performance labelling schemes from electrical appliances and cars to other groups of environmentally harmful products including products with high environmental impacts.
- Member States should support information campaigns with retailers and other organisations to promote sustainable products *inter alia* products that stem from organic farming and fair trade as well as environmentally sound products.

### Critique of EU SDS:

1. No understanding of how monetary system (debt-based money) drives excessive production and

consumption

2. Relies on exhortation and voluntary targets rather than the price mechanism or/and properly enforced regulation
3. Lack of clear rules within competition policy that would favour more sustainable products and services
4. Tendency to try to pick winners and to micro-manage for innovation.

**Irish Context:**

1. Very negative public response to water and waste charges
2. Participation of independent civil society organisations in consumer participative forums is weak or ignored where included ie. waste strategies.
3. Short term economic accounting in public procurement policies gives no support to more sustainable products and services
4. Poor enforcement of environmental regulation fosters a culture of irresponsibility in the production and consumer sectors

Objectives and Actions:

- Create new public sector markets for sustainable goods and services
  - Establish the Eco-Management and Audit Scheme (EMAS) in all sectors and at all levels of government as a starting point for the greening of government
  - Require annual review of the progress of delivery by The Comptroller and Auditor General.
  - Immediate introduction of green public procurement.
  - Enforce local food procurement policy for hospitals, schools, colleges, office canteens.
- Get full value for use of the commons of environmental and social resources and systems for citizen shareholders
  - Commons resource trusts to set limits for use of trust's resources and to distribute permits to citizens or to trade and distribute dividends to citizen shareholders
  - Commons resource trusts to estimate impact of proposed development and policies on the resources in their trust in SIA and EIS and to charge for permitted use or impact
  - Create Sky trust and distribute permits to citizens as per 'Cap and Share' for transport fuel, then heating fuel
  - Local authority or dedicated commons trust to proprietise potable water resources and manage it in trust for citizens within remit, provide free equal domestic water quota to citizens and charge extra and for all commercial and public use.
  - Ditto for land fill waste capacity
- Set ambitious production standards that are enforced universally and fairly in the marketplace
  - Raise Building Regulation standards to near 'passive house' standard i.e very high insulation and air tight construction and heat recovery for all buildings types

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- Work within the EU to agree rigorous emission standards for all new vehicles linked to levies on non conforming imports
- Ditto minimum sustainable life cycle standards for white goods and sanitary ware
- Ditto minimum sustainable life cycle standards for electronic goods
- Facilitate collective community scale action for sustainable production and consumption
  - Give the Consumers Association of Ireland and EENGOs representation on the Consumer Council and other similar fora
  - Create agency to support development of ethical consumer co-ops similar to the Dublin Food Coop
  - Create agency to support development of integrated local energy and waste systems and instruct local authorities to facilitate them in development plans and control
- Reform the monetary and fiscal systems to remove the imperative for excessive production and consumption
  - Encourage the creation and use of a non debt-based local money systems either issued by local government or backed by local resources
  - Support the creation of a fair non debt-based global money system backed by emissions permits (the ebcu)
- Decouple production (work) and income recognising non monetised work and social contribution of every citizen
  - Reform tax system from giving tax relief at the each bands to refundable tax credits
  - Introduce citizens income comprising returns/dividends earned by resource trusts or authorities collecting rents in trust for citizens (annual land taxes)
- Foster innovation in eco-technology and its rapid dissemination within Europe and the world
  - Create a fund to test, certify and indemnify against unforeseen failure of new sustainable construction systems that are 'open' i.e not proprietorial
  - Create fund for CPD and training in the workplace for the above
  - Create genuine partnerships with professional building, product and industrial design associations to encourage innovation and rapid adoption of best practice

**Conservation and management of natural resources**

Overall Objective:	To improve management and avoid overexploitation of natural resources, recognising the value of ecosystem services
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**EUSDS objectives and targets**

- Improving resource efficiency to reduce the overall use of non renewable natural resources and the related environmental impacts of raw

**EUSDS proposed actions**

- In the field of agriculture and fisheries Member States and the Commission will make further efforts through the new programmes for rural

materials use, thereby using renewable natural resources at a rate that does not exceed their regeneration capacity.

- Gaining and maintaining a competitive advantage by improving resource efficiency, *inter alia* through the promotion of eco-efficient innovations.
  - Improving management and avoiding overexploitation of renewable natural resources such as fisheries, biodiversity, water, air, soil and atmosphere, restoring degraded marine ecosystems by 2015 in line with the Johannesburg Plan (2002) including achievement of the Maximum Yield in Fisheries by 2015.
  - Halting the loss of biodiversity and contributing to a significant reduction in the worldwide rate of biodiversity loss by 2010.
  - Contributing effectively to achieving the four United Nations global objectives on forests by 2015.
  - Avoiding the generation of waste and enhancing efficient use of natural resources by applying the concept of life-cycle thinking and promoting reuse and recycling.
- development, the reformed Common Fisheries Policy, the new legislative frameworks for organic farming and animal welfare as well as the biomass action plan.
- The Commission and Member States should build on the EU strategy on the sustainable use of natural resources which should be complemented by a number of targets and measures at EU-level. The European Environment Agency should give support regarding the measurement of resource efficiency.
  - Sustainable Forest Management will be strengthened through the adoption of an EU Forest Action Plan in 2006 and the Communities engagement in the Ministerial Conference on the Protection of Forests in Europe including the implementation of its resolutions.
  - Member States should complete the Natura 2000 network, including designation of marine areas. Particular attention should be paid to the need for improved implementation of both Natura 2000 and of species protection and management policies.
  - Member States should implement the EU Biodiversity Strategy in both its EU and its global dimensions (Convention on Biological Diversity) and, in cooperation with the Commission, take measures to identify and implement priority actions to achieve the objective of halting the loss of biodiversity by 2010 and beyond.
  - The Commission and Member States should work towards improving integrated water resources management, the marine environment and promoting integrated coastal zone management.
  - On the basis of the Commission Green Paper on maritime affairs, ocean and sea related policies will be developed in a more sustainable and integrated fashion from 2008 onwards.

#### **Critique of EU SDS:**

1. The EU's objectives and targets are entirely laudable and absolutely essential but the proposed actions are all regulatory i.e. there are no economic mechanisms to back up the regulations.
2. No action listed to remove perverse subsidies that support unsustainable use and abuse of resources.

#### **Irish Context:**

1. State resource agencies such as Coillte governing forests and Bord na Mona governing the bogs have been given a strong commercial remit that is at complete odds with the aims of resource and biodiversity protection
2. Agricultural land ownership is still widely spread, despite recent consolidation.

Objective and Actions commentary will be forthcoming in our Final Document.

Public Health

Overall objective:	To promote good public health on equal conditions and improve protection against health threats
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EUSDS objectives and targets

- Improving protection against health threats by developing capacity to respond to them in a co-ordinated manner.
- Further improving food and feed legislation, including review of food labelling.
- Continuing to promote high animal health and welfare standards in the EU and internationally.
- Curbing the increase in lifestyle-related and chronic diseases, particularly among socioeconomically disadvantaged groups and areas.
- Reducing health inequalities within and between Member States by addressing the wider determinants of health and appropriate health promotion and disease prevention strategies. Actions should take into account international cooperation in fora like WHO, the Council of Europe, OECD and UNESCO.
- Ensuring that by 2020 chemicals, including pesticides, are produced, handled and used in ways that do not pose significant threats to human health and the environment. In this context, the rapid adoption of the Regulation for the registration, evaluation, authorisation and restriction of chemicals (REACH) will be a milestone, the aim being to eventually replace substances of very high concern by suitable alternative substances or technologies.
- Improving information on environmental pollution and adverse health impacts.
- Improving mental health and tackling suicide risks.

EUSDS proposed actions

- The Commission in collaboration with Member States, the European Centre for Disease Prevention and Control (ECDC) and WHO will further develop and strengthen capacities at EU and Member-State level to respond to health threats in a co-ordinated manner *inter alia* by upgrading existing action plans on handling health threats.
- The Commission and Member States will promote better health and disease prevention by addressing health determinants across all relevant policies and activities. Particular attention will be given to the preparation and implementation of strategies and measures targeting life-style related health determinants, such as drugs, tobacco use, harmful drinking, poor diet and physical inactivity, and chronic diseases.
- Member States' health policies should aim at creating and implementing strategies to help women and men in achieving and maintaining positive emotional states thus improving their well-being, their subjective perception of quality of life and their physical and mental health.
- The Commission will propose further improvements in the food and feed legislation according to the principles of Articles 14 and 15 of Regulation (EC) 178/2002 on the safety of food and feeding stuffs. There is a particular need for improvements to the operation of the system on the production and use of genetically modified food and feed, in order to reassure Member States, stakeholders and the general public that decisions are based on risk assessment and risk management which also take into account possible long term effects on human life and health, animal health and welfare, environment and consumer interests.
- The Commission together with Member States will implement an EU Strategy to combat HIV/AIDS within the EU and in neighbouring countries. Member States should intensify efforts to implement the existing EU Programme for Action to confront HIV/AIDS, Tuberculosis and Malaria in third Countries. Concrete links should be established with other Community measures such as the Strategy for Africa.
- The Commission together with Member States will increase information on environmental pollution and adverse health impacts and will coordinate research into the links between environmental pollutants,

exposure and health impacts to improve our understanding of which environmental factors cause health problems and how best to prevent them.

- The Commission should propose a strategy for improving indoor air quality, with particular attention to VOC emissions.
- Special attention will be given by the Commission and Member States to vulnerable groups, in particular children through the EU's contribution to the Children Environment and Health Action Plan for Europe (CEHAPE).
- Further implementation of the Transport Health and Environment Pan European Programme (THE PEP) by the Commission and Member States *inter alia* through the integration of environmental and health aspects into transport policy decision-making, monitoring and impact assessment.

### **Critique of EU SDS:**

1. Does not make the link between car-based settlements, obesity levels and shorter lives
2. Does not make the link between economic inequality and poor health and unhappiness
3. Does not mention public procurement of healthy food in public services

### **Irish Context:**

1. Poor planning and absence of related fiscal incentives has contributed to urban sprawl and dispersed housing in the countryside that traps people in unhealthy lifestyles.
2. Despite high economic growth over 15 years, Ireland has increased gap between rich and poor, an important determinant of health and happiness.
3. A two tier health system in disarray with poor incentives to manage lifestyles for better health
4. A department of Agriculture and Foods that favours the interests of producers over consumers; i.e ambivalence over GMOs.
5. Compulsory fluoridation of the drinking water which masked the effects of sugary foods (Ireland highest consumption of sugar and confectionery) on teeth but whose effect on health was never properly considered
6. No local level contingency planning for disease epidemics
7. Building Regulations weak on air quality standards

### Objectives and Actions:

- Redevelop settlements so promote walking and cycling
- Address inequality with commons share, tax shift and citizens income
- Develop a health commons in which all can benefit equally from new technologies and treatments
- Set up a health commons trust to sue polluters on behalf of citizen shareholders
- More attention to consumer in agriculture policies and public services
- Require infectious disease emergency plan as part of all local authority Development Plans

**Social inclusion, demography and migration**

Overall Objective:	To create a socially inclusive society by taking into account solidarity between and within generations and to secure and increase the quality of life of citizens as a precondition for lasting individual well-being
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EU SDS objectives and targets

- Pursuing the EU objective that steps have to be taken to make a decisive impact on the reduction of the number of people at risk of poverty and social exclusion by 2010 with a special focus on the need to reduce child poverty.
- Ensuring a high level of social and territorial cohesion at EU level and in the Member States as well as respect for cultural diversity.
- Supporting the Member States in their efforts to modernise social protection in view of demographic changes.
- Significantly increasing the labour market participation of women and older workers according to set targets, as well as increasing employment of migrants by 2010.
- Continuing developing an EU migration policy, accompanied by policies to strengthen the integration of migrants and their families, taking into account also the economic dimension of migration.
- Reducing the negative effects of globalisation on workers and their families.
- Promoting increased employment of young people. Intensifying efforts to reduce early school leaving to 10% and to ensure that at least 85% of 22 year olds should have completed upper secondary education. By the end of 2007 every young person who has left school and is unemployed should be offered a job, apprenticeship, additional training or other employability measure within six months, and within no more than 4 months by 2010.
- Increasing the labour market participation of disabled persons.

EU SDS proposed actions

- On the basis of the new objectives and working methods for social protection and social inclusion endorsed by the European Council in March 2006, Member States and the Commission will continue their cooperation using the open method of coordination (OMC). In this context the EU and Member States will also take the necessary measures to rapidly and significantly reduce child poverty and will work towards giving all children equal opportunities, regardless of their social background, gender or disabilities.
- On the basis of the Communication on “Social Services of General Interest” the Commission and the Member States will continue efforts to ensure that social services contribute actively to social inclusion and cohesion, and support the objectives of growth and employment. The Commission and the Member States will also continue the work on a further clarification of the impact of Community law on social services of general interest.
- The Member States will continue implementation of the European Pact for Youth. In the structured dialogue with young people during each Presidency organisations active in the field of European youth policy, among them the European Youth Forum, should be invited to feed in sustainable development issues of interest for young people by preparing these dialogues between youth and governments.
- Member States and the EU will implement the European Pact for Gender Equality agreed at the European Council in March 2006.
- Taking into account the ageing of populations in all European countries, the sustainability and adequacy of pensions will remain an important issue for the coming decades. The EU will continue to support the efforts of Member States to modernise social protection systems and ensure their sustainability. Member States should reduce public debt at a satisfactory pace, raising employment rates and productivity, as well as reforming health care and long-term care systems.
- In 2006 the Commission will adopt a Communication on the demographic future of Europe examining how the EU can help Member States respond to the demographic challenges they face, notably by promoting active and healthy ageing strategies, the reconciliation of work and family life,

better conditions for families, also taking into account the contribution of immigration.

- Member States should analyse the possible implications of demographic change for land use and resource and energy consumption as well as mobility, and take them into account in planning and investment at all levels.
- The EU and the Member States will continue to develop an EU migration policy, accompanied by policies to strengthen the integration of migrants and their families, notably through the policy plan on migration, including admissions procedures. They will intensify cooperation with third countries and work towards joint responses to control migration flows. In 2006 the Commission will present a Communication on future priorities in the fight against illegal immigration.

### **Critique of EU SDS:**

1. Employment is seen as the prime remedy for poverty with a safety net of social supports allocated according to need
2. Equality of opportunity is promised but equality of access to and enjoyment of the ecological and social commons is not.
3. There is no acknowledgement of negative social effects of higher levels of participation in employment of both spouses to an older age
4. The desirability of a permanently high percentage of older residents in Europe for sustainability is not understood.
5. There is an implicit uncritical acceptance of migration as a necessary and inevitable consequence of economic growth and globalisation

### **Irish context:**

1. The Social Partnership Agreement Towards 2016, agreed by 'social partners' that excluded environmental/sustainability NGOs, is fundamentally flawed as does not mention the environment in any of its five goals illustrating that they believe that environmental issues are irrelevant to social inclusion.
2. Emigration can be seen as the result of the older, wealthier and more conservative cohorts of Irish society denying the young their fair share and rightful opportunity. While the young are no longer forced to emigrate, they are forced to mortgage their future earnings to an unprecedented degree to live here while capital assets (land, property, company shares) overwhelmingly owned by the above older cohort have increased in value as a result of the contribution of the young.

Objectives and Actions:

- Replace a needs-based / charitable social system with a rights-based / equitable social system bounded by environmental resource and system limits
  - Replace tax reliefs with refundable tax credits
  - Gradually eliminate all means testing for public services and supports such as pensions and move to universal benefits
  - Distribute an equal quota of emission permits to citizens that can be sold at market value; covering transport sector, extending to heating fuels and finally all GHGs emitting sectors.
  - Distribute a single equal housing benefit to citizens - funded by an annual site value tax on all land.
  - Ditto receipts from other environmental resource trusts, water, forestry, biodiversity.
  - Support the creation of Community Land Trusts
  
- Eliminate social dependency and economic disincentives to work
  - Consolidate social protection into a single equal (through a lifetime) citizens dividend that is paid whether the recipient works or not.
  - Abolish the private / public divide for housing and by extension communities by replacing all housing supports programmes with a single benefit that can be used to buy or rent in any sector without means testing (see above). Reform Part V of the 2000 Act to include all housing. Encourage competition for customers between housing production sectors private, local authority and not-for-profit. Ensure a mix of rental and purchase in all schemes.
  
- Recognise the contribution of non-monetary work in the home and in the community
  - Citizens dividend along with receipts or benefits from commons trusts will provide a basic income that facilitates care for children, the elderly, the sick or disabled or to pursue education, the arts, religious or spiritual self development or contribute to civil society organisations or the local community
  - Develop local money or voucher systems to reward social contribution and enterprise
  
- Make the shift to a 'grown up economy' that reflects the reality of a stable older population demographic adjusted to environmental limits
  - Support local non debt-based money systems that do not need ever increasing consumption and economic growth
  - Support non debt-based global money system for international trade backed by the essential resource of a stable climate (ebcu) that can better ride out recessionary forces
  - Extend Cap and Share to other countries, giving citizens and equal per capita emission quotas that incentive moderating family size by giving a secure income in old age (especially to women)

Global poverty and sustainable development challenges

Overall objective:	To actively promote sustainable development worldwide and ensure that the European Union's internal and external policies are consistent with global sustainable development and its international commitments
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EUSDS objectives and targets

- Make significant progress towards meeting the commitments of the EU with regard to internationally agreed goals and targets, in particular those contained in the Millennium Declaration and those deriving from The World Summit on Sustainable Development held in Johannesburg in 2002 and related processes such as the Monterrey Consensus on Financing for Development, the Doha Development Agenda and the Paris Declaration on Aid Harmonisation.
- Contribute to improving international environmental governance (IEG), in particular in the context of the follow-up to the 2005 World Summit outcome, and to strengthening multilateral environmental agreements (MEAs).
- Raise the volume of aid to 0,7% of Gross National Income (GNI) by 2015 with an intermediate target of 0,56% in 2010,
  - i) Member States which have not yet reached a level of 0,51% ODA/GNI undertake to reach, within their respective budget allocation processes, that level by 2010, while those that are already above that level undertake to sustain their efforts;
  - ii) Member States which have joined the EU after 2002 and that have not reached a level of 0,17% ODA/GNI will strive to increase their ODA to reach, within their respective budget allocation processes, that level by 2010, while those that are already above that level undertake to sustain their efforts;
  - iii) Member States undertake to achieve the 0,7% ODA/GNI target by 2015 whilst those which have achieved that target commit themselves to remain above that target; Member States which joined the EU after 2002 will strive to increase by 2015 their ODA/GNI to 0,33%.
- Promote sustainable development in the context of the WTO negotiations, in accordance with the preamble to the Marrakech Agreement establishing the World Trade Organisation which sets sustainable development as one of its main objectives.
- Increase the effectiveness, coherence and quality of EU and Member States aid policies in the period 2005–2010.

EUSDS proposed actions

- Implementation of the EU “Water for Life” Initiative, the EU Energy Initiative for poverty eradication and sustainable development as well as the Johannesburg Renewable Energy Coalition and the Strategic Approach to International Chemicals Management (SAICM).
- Development of a Common EU Programming framework, using more joint actions and co-financing of projects, and increasing the coherence between development and other policies. The quality and effectiveness of aid could be increased through *inter alia* effective budget support, debt reduction and untying of aid.
- Member States and the Commission should implement the EU strategies on Africa, Latin America and the Pacific.
- The Commission and Member States will increase efforts to make globalisation work for sustainable development by stepping up efforts to see that international trade and investment are used as a tool to achieve genuine global sustainable development. In this context, the EU should be working together with its trading partners to improve environmental and social standards and should use the full potential of trade or cooperation agreements at regional or bilateral level to this end.
- Investments through the European Investment Bank and the EU-Africa Partnership for Infrastructure should support sustainable development objectives. The European Investment Bank should assess its lending against the contribution to achieving the Millennium Development Goals and sustainable development.
- Member States and the Commission should cooperate to promote the EU position on transforming the UN Environment Programme (UNEP) into a UN specialised agency or UNEO, based in Nairobi with a strengthened mandate and stable, adequate and predictable financing.

- Include sustainable development concerns in all EU external policies, including the Common Foreign and Security Policy, *inter alia* by making it an objective of multilateral and bilateral development cooperation.

#### **EU SDS Critique:**

1. The link between unequal access to, and use of ecological and social 'commons' and poverty is not drawn. Target 9 of the Millennium Development Goals includes reversing the loss of environmental resources.
2. Developing world debt is the direct result of an unfair global monetary architecture.
3. Reforming trade relations without reform of the money system in which trade is conducted will not solve underlying problems
4. Public Private Partnerships (Jo'burg) to develop natural resources must recognise the Peoples 'commons' ownership rights

#### **Irish Context:**

1. Ireland has a good overseas aid reputation for untied aid
2. Do as I say but not as I do : SD in NDP (Irish Aid). We could not do better than to follow our own advice to developing nations for sustainable development.

#### Objectives and Actions:

- End the Irish 'free ride' on the resources of the Southern world
  - Work to replace ETS in the EU with Cap and Share that recognises the co-ownership of the atmosphere, this would involve a significant transference of EU payments to the under developed nations for their unused GHG permits that can pay off debts and finance technology transfer for a carbon-decoupled development path.
  - Embargo imports of biofuels produced on land taken from old growth forestry or other important carbon and biodiversity reserves.
  - Do not allow dumping of Irish hazardous waste in developing countries
  - Support non debt-based global currency such as the ebcu (see Feasta Cap and Share)
  - Provide a worked example of our own advice: - our hypocrisy is not lost on South world politicians
- Ensure that the value of Irish trade and aid goes to the wider population in in recipient countries
  - Do not engage with or buy carbon permits from CDM projects where the proceeds go to Transnational Corporations or political elites rather than ordinary citizens.
  - Recognise citizens rights to resources in PPPs as in Type Two WSSD initiatives (note: ESB

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international). That means ensuring free quota for water and dividends or payment for its use by traded agriculture and business for citizens.

- Support secure individual and community use rights in land and annual land taxes to capture value created by Irish Aid infrastructure or services investment.
  - Recognise that Western science and technology was built using *global* finite fossil fuels and the *global* atmosphere and therefore all peoples, especially those in the South, have rights to the fruit of this investment.
  - Share intellectual property freely with developing nations - open access to science and technology
  - Support community rights and access to ICT
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- Structure aid and support by acknowledging that conventional economic growth is not sustainable, and that unsustainable development can lock-in bad infrastructure and dependencies. Instead focus on long-term sustainability.
    - Do not encourage export industries that depend on cheap manufactured goods, they are vulnerable to oil peak.
    - Do encourage local production for local consumption.
    - Do not encourage large-scale mechanised agriculture, or monocultures.
    - Do encourage bio-intensive farming, and local processing.

## **CROSS CUTTING POLICIES CONTRIBUTING TO THE KNOWLEDGE SOCIETY**

### **1. Education and training**

14. Education is a prerequisite for promoting the behavioural changes and providing all citizens with the key competences needed to achieve sustainable development. Success in reversing unsustainable trends will to a large extent depend on high-quality education for sustainable development at all levels of education including education on issues such as the sustainable use of energies and transport systems, sustainable consumption and production patterns, health, media competence and responsible global citizenship.
15. Education can contribute to greater social cohesion and well-being through investments in social capital and by ensuring equal opportunities, citizens' participation especially of disadvantaged groups to achieve a higher degree of awareness and understanding of the complexity and many interdependencies in today's world. Education that provides women and men with competences that increase their employability and lead to high quality employment is also key in strengthening the competitiveness of the EU.
16. On the basis of the Communication "i2010 - A European Information Society for Growth and Employment", the Commission and Member States should address issues such as equal opportunities, ICT skills and regional divides.
17. In the context of the UN Decade of Education for Sustainable Development (2005-2014), Member States could further develop their national action plans, making in particular use of the "Education and training 2010" work programme, whose objectives are focused on quality and relevance, on access for all and on the openness of systems and institutions to society and the wider world. Member States could develop education for sustainable development and targeted training for professions in key sectors such as construction, energy and transport. Special attention should be devoted to teacher training. They should also implement the UNECE Strategy for Education for Sustainable Development adopted in Vilnius in 2005. Education for sustainable development should also be promoted at EU level. The European Parliament and the Council will adopt an integrated action programme in the field of lifelong learning for 2007-2013 in 2006.

### **Critique of EUSDS:**

1. Education for sustainability is treated as a discrete field of knowledge not as it should be, a perspective within all fields.
2. The SDS does not emphasise that programmes for behavioural change should draw on different pedagogies, delivery methodologies and technologies according to the particular sector or participant.
3. Risk management is not identified as a key skill for Sustainable Development not only to mitigate exogenous and endogenous shocks but also to derive creative solutions, create new enterprises and strengthen the competitiveness of the EU.
4. Recognition that cultural education that increases quality of life by expanding physical, intellectual and aesthetic capacities for enjoyment creates the conditions to conserve and enhance the nation's cultural diversity and capital, is absent.
5. As the time frame for effective response to the environmental challenge of global warming is so short (10 -15 years according to the Stern Report) education for sustainability should be focused predominately on current decision-makers, public representatives and servants and secondly, private sector professionals and businesses.

## **Irish Context**

1. A basic understanding of science and scientific method is fundamental to education for environmental sustainability and is severely lacking at all levels of education achievement in Ireland and will be addressed as a priority in this strategy.
2. Participative learning opportunities are curtailed by the denial of full social partnership to the environmental/sustainability sector in Ireland at all levels
3. Education of disadvantaged groups overly concentrates on individual responsibility and does not create awareness of rights including to the environmental and social commons (including communication rights) or their collective powers within Irish governance structures.
4. While environmental especially energy issues are increasingly well catered for, social and economic dimensions are not currently included in professional under graduate, post graduate and CDP programmes.

## Objectives and Actions

- Achieve excellence rating in scientific knowledge at all levels of education in Ireland
  - Continue new approach to science programmes in junior school into secondary school through to school leaving.
  - Require a compulsory natural science subject for the Leaving Cert (that can be taken at a basic practical level) ensuring that all girls have equivalent standards of science education to boys; that qualified teachers are brought on stream quickly through an accelerated HDip programme for science graduates and the guarantee of a job within 6 months of graduation.
  - Develop high quality practical science laboratories in every community linked to the secondary school and open for use to the local community. Initiate a scheme whereby science teachers can supplement their income by giving adult courses see below and/or to use the facilities to provide services such as environmental monitoring, agricultural testing or to pursue their own pure or applied science interests.
  - Distribute free education vouchers to citizens for adult education programmes in the natural sciences, backed up by distance education modules over the Internet and Community TV.
- Achieve a high level of understanding of environmental, social and economic sustainability amongst the decision-makers in Ireland;
  - Develop training structures and courses designed to give an understanding of sustainable development for all civil servants, regional and local government officials and employees of government agencies.
  - Ditto access to justice in the delivery of SD and its cornerstone of participatory environmental democracy This training to include the necessary dialogue skills - a requirement that they be taken for further career advancement.
  - Welcome the environmental/sustainability sector as a partner at all levels of governance in order to to share their experience and insight with the other social partners in a mutually

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beneficial learning process.

- Infuse sustainability principles into third level, professional and CPD (continuing professional development)
  - Support existing sustainable design modules in undergraduate architecture, engineering, planning and related built environment courses and expand to include social and economic dimensions that are currently very weak. Support professional associations such as the RIAI in their sustainable design CPD programme emphasising greater inclusion of social and economic aspects of sustainability.
  - in farming, forestry and fishing.????
  - Mandatory inclusion of best practice sustainable design methodology such as 'Cradle to Cradle' and 'the Natural Step' in under-graduate consumer product design courses and examinations. Ditto consumer services educations such as in hairdressing, dry cleaning etc. etc. generally.
  - Require that 'the Natural Step' principles are included and examined in all under-graduate science degree sciences.
  - Require that environmental sustainability is a mandatory module in all sociology, politics and economics courses at under-graduate level, not, as is currently the case, an optional add-on. Third level institutions must demonstrate that they have adequate qualified teaching staff for this task; additional funding should be made available where expertise is lacking.
- Heighten sustainability consciousness and achieve significant behaviour change amongst Irish citizens
  - Provide rich learning environments where all aspects of environmental resource conservation and system integration are realised i.e. in the design, construction and servicing of new national junior and secondary schools programme and in the commissioning of all new third level institutions.
  - Support the design and construction of pilot sustainable settlements - eco-villages in rural areas, eco neighbourhoods in urban where all aspects of environmental, social and economic sustainability can be lived and modelled for others; priority and enhanced funding to be given to new Irish speaking settlements in areas of rural population decline or urban decay.
  - Support development of 'future living' kids camps and visitor activity centres, smaller but with all features of sustainable settlements described above where the benefits of sustainable living are demonstrated, celebrated and enjoyed. A significant part of future living is the re-learning the skills of the past.
- Maximise the benefit of new spatial IT tools to monitor, protect and enhance the natural, social and economic inheritance and capital of the nation
  - Develop Enfo as a centre for spatial (map based) information providing affordable access to

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hardware, software and training to citizens and free access to the OS map database; and make provision for a second such centre in a rural area also as a valuable visitor attraction.

- Provide funding to NGOs for hardware, software and education training in GIS (Geographical Information systems) so that they can better perform their monitoring function as social partners
- Initiate through local authorities the making of Local Maps by local communities describing and measuring every thing of value to the community to build into a national doomsday book as we enter this period of challenge and to serve as a benchmark by which our progress is judged (similar to the folklore project of the 1930s that gathered the oral knowledge of that time and place)
- To support the education and training for skills likely to be required in a fossil fuel and climate constrained future
  - Give vouchers for training in home and community food production.
  - Update third level degree courses in agriculture to include compulsory courses in permaculture, organic, and biointensive farming.
  - Distribute free culture vouchers to all citizens for Irish language, music, drama and art classes supported by distance education modules using the Internet and properly funded community media.
- **Research and technological development**

18. Research into sustainable development must include short-term decision support projects and long-term visionary concepts and has to tackle problems of a global and regional nature. It has to promote inter- and transdisciplinary approaches involving social and natural sciences and bridge the gap between science, policy-making and implementation. The positive role of technology for smart growth has to be further developed. There is still a strong need for further research in the interplay between social, economic and ecological systems, and in methodologies and instruments for risk analysis, back- and forecasting and prevention systems.
19. It is key in that regard to ensure effective implementation of the 7th Framework Programme of the European Community for research, technological development and demonstration activities, involving academia, industry and policy-makers and to advance the implementation of the Environmental Technology Action Plan.
20. For better understanding of interlinkages between the three dimensions of SD, the core system of national income accounting could be extended by *inter alia* integrating stock and flow concepts and non-market work and be further elaborated by satellite accounts e.g. environmental expenditures, material flows and taking into consideration international best practices.
21. Universities, research institutes and private enterprises all have an essential role to play in promoting research that supports efforts to ensure that economic growth and environmental protection reinforce each other. Universities and other higher education institutions have a key role in providing education and training that equip the qualified workforce with the necessary competences to fully develop and exploit sustainable technologies. They should also contribute to low environmental impact management through interdisciplinary approaches and by building on existing networks. Creation of partnerships and cooperation between European and third country universities and higher education institutions, encouraging networking and peer learning, should be promoted.

**Critique of EUSDS:**

1. There is no recognition of the increasing erosion of the knowledge commons by restrictive copyrights and patents; access to RTD knowledge bearing on sustainability must be free and open especially to developing nations.
2. RTD success should not be judged simply minimising impact on environment and social systems but whether it enhances the environment and reinforces the diversity of all life on Earth.
3. The sheer complexity of the reflexive interplay between social, economic and ecological systems challenges existing methodologies requires the rapid adoption of 'action research' exploiting the fractal nature of the CAS (complex adaptive system) and study of higher level patterns or 'emergent effects' typical of a CAS
4. Neglects potential of research and development at the local level; 75% of all measures to address sustainability are at the local level
5. The RTD Framework Programmes are an inherently contradictory attempt to direct innovation and to pick winners leading to enormous wasted resources and frustration

**Irish Context:**

1. Monitoring function is separated decisively from decision-making in Irish environmental governance structure, contrary to Agenda 21 guidelines and environmental NGOs are excluded from social partnership at all levels. Participation is limited to a post analysis of policies and actions already decided upon by public and private actors.
2. Access to environmental information is hampered by 'commercial' barriers i.e. costly OS maps and obstructive public management
3. The wealth of knowledge and experience of the environmental NGO sector is not recognised and supported

Objectives and Actions:

- Involve civil society in research and technological development
  - invite NGO representatives from the social and environmental sectors onto the boards of supervisory agencies for RTD such as the EPA.
  - make proposal development grants for 7th Framework RTD programme available to independent environmental research organisations on the same basis as public sector research organisations.
- Support innovation in sustainable construction
  - provide a fund to research and test novel sustainable construction systems for Agreement Certification to make them freely available to specifiers
  - amend the 'durability' standards for housing construction from a 60 year life to the EU

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standard of 30 so that new sustainable construction systems can be used for social, affordable and other grant-aided and tax-relieved housing.

- Create trusts charged to conserve and/or enhance the environmental or social property in their care.
  
- Spread appropriate sustainable development technology rapidly within Ireland and with third countries especially in the developing world
  - Foster research and development 'tripartnerships' (public, private, commons trusts partnerships).

## **FINANCING AND ECONOMIC INSTRUMENTS**

22. The EU will seek to use the full range of policy instruments in the implementation of its policies. The most appropriate economic instruments should be used to promote market transparency and prices that reflect the real economic, social and environmental costs of products and services (getting prices right). Their potential to reconcile environmental protection and smart economic growth and exploit win-win opportunities should be recognised. Additionally, their suitability should be judged against a set of criteria, including their impact on competitiveness and productivity.
23. Member States should consider further steps to shift taxation from labour to resource and energy consumption and/or pollution, to contribute to the EU goals of increasing employment and reducing negative environmental impacts in a cost-effective way. In this context, the Commission should gather relevant information by 2007.
24. By 2008, the Commission should put forward a roadmap for the reform, sector by sector, of subsidies that have considerable negative effects on the environment and are incompatible with sustainable development, with a view to gradually eliminating them.
25. In order to ensure that EU funding is used and channelled in an optimum way to promote sustainable development, Member States and the Commission should co-ordinate to enhance complementarities and synergies between various strands of Community and other cofinancing mechanisms such as cohesion policy, rural development, Life+, Research and Technological Development (RTD), the Competitiveness and Innovation Program (CIP) and the European Fisheries Fund (EFF).

### **Critique:**

1. 'Grown up economy' versus 'smart growth'
2. ETS and competition policy
3. Punitive taxation versus fair shares
4. Free rides and free lunches
5. Picking winners; making losers
6. Making the price right

### **Irish Context:**

1. Dangerous dependence on tax receipts from construction

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2. Virtually no taxes on land or property
3. Dominance of vested interests
4. Growing inflation and erosion of competitiveness
5. Low levels of enterprise and innovation

Objectives and Actions

- To eliminate perverse, inefficient and unfair subsidies
- To recognise citizens ownership of the natural, social and cultural commons
- Get value for money for public goods
- Align fiscal incentives and public charges/levies for infrastructure with sustainable land-use planning and development control objectives
  - Require Section 48 and 49 levies to recoup 60% of the value-added to land by zoning, planning permission, infrastructure and services provided; to be paid a fraction annually, the balance on commencement of construction on site.
  - Require that a levy of 60% of value-added is paid on un-zoned land on grant of planning permission - with no exceptions for rural one-off houses
  - Require local authorities to invest the receipts in local infrastructure and local services that support sustainability including shared and public transport
  - Abolish rates on commercial properties and development land and replace with 1% annual land value tax.
  - Abolish stamp duties on property transactions and replace with 1% annual land value tax, on second homes, on rented property, on public and charitable property and on homeowners (but allowable against income tax for existing homeowners).
  - Offer choice of land value tax or conventional taxes on farmland for trial period - extend when majority accept.

**COMMUNICATION, MOBILISING ACTORS AND MULTIPLYING SUCCESS**

26. The Commission will mainstream sustainable development in its information, awareness-raising and communication activities and continue, together with other Community institutions, to organise events and stakeholder meetings on the various strands of the strategy, to disseminate new ideas and exchange best practices. In this context the Commission should produce a layman's guide to this strategy, including good practice and good policies in Member States, to help increase public awareness of sustainable development. Use should be made of valuable communication tools to measure the impacts of human activities on the earth's capacity to support life in its diversity.
27. The Commission should elaborate a concrete and realistic vision of the EU on its way to sustainable development over the next 50 years. Such a vision should be prepared in a participatory manner and should identify the main long term objectives and describe intermediate stages and steps towards their achievement.
28. Member States have the key role in targeting communication to the most appropriate level.
29. With regard to the important role of local and regional levels in delivering sustainable development and building up social capital, it is the overall aim to build sustainable communities in urban and rural areas where citizens live and work and jointly create a high quality of life. Approaches like Local Agenda 21 and other processes with broad public participation must be further strengthened and promoted. Municipalities, cities and towns should be invited to sign and implement the Aalborg Commitments. Networks at different levels should support these activities.
30. In this connection the Commission is invited to elaborate possible options of how to promote the "European Sustainable Cities & Towns Campaign" which provides an exchange of good practice including the elaboration of quality criteria, indicators and instruments like impact assessment. The best sustainable development initiatives taken by regional and local authorities will be awarded prizes on an annual basis. The Commission will invite proposals from other EU institutions and organisations on how best to organise this.
31. Business leaders and other key stakeholders including workers' organisations and nongovernmental organisations should engage in urgent reflection with political leaders on the medium- and long-term policies needed for sustainable development and propose ambitious business responses which go beyond existing minimum legal requirements. A proposal to foster this process will be made by the Commission in 2007. In accordance with the European Alliance for Corporate Social Responsibility (CSR), awareness and knowledge of corporate social and environmental responsibility and accountability should be increased.
32. The EU welcomes civil society initiatives which aim at creating more ownership for sustainable development and will therefore intensify dialogue with relevant organisations and platforms that can offer valuable advice by drawing attention to the likely impact of current policies on future generations. In this context, the EU will also continue to promote full implementation of the Aarhus Convention Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

**Critique of EU SDS:**

1. 'Ownership' offer to civil society is disingenuous; valuable commons rights to emit were given free to industry under the ETS
2. Local Agenda 21 appears to be treated as a PR strategy rather than offering genuine partnership in decision-making
3. Does not address fundamental problems of communication within civil society
4. Lack of strategy for winning the hearts and minds of third countries especially developing countries without whose co-operation the EU's vision for sustainability is lost

**Irish Context:**

1. Ireland has not ratified Aarhus Convention and is in breach of its commitments on access to environment information and participation
2. Irish local government has little power and autonomy; role limited to administrative layer of central government. It does however have a great deal of responsibility for environmental protection without the right to raise funds.
3. Environmental sector systematically excluded from national and local decision-making structures. Except partially in SPCs through the community fora, but here they are not supported in their involvement, and treated with suspicion and sometimes ignored by the local councillors.
4. Ireland has a poor climate for public debate on environmental and sustainability issues ; no whistle blowers charter, strict defamation laws and poor support for community media

Objectives and Actions

- Foster responsibility and innovation at local government level
  - Scrap 'decentralisation' programme that is reality, an unsustainable form of dispersed centralism
  - Give more powers (real decentralisation) in particular tax raising (land value taxes) powers and responsibility to local government - 'no representation without taxation'. no responsibility without resources
  - Amend the City and County Management Act that gives most power to non-elected manager
  - Provide for directly elected mayors with cabinets and specific mandates
- Extend partnership to environmental sector, deepen social partnership generally
  - Invite environmental sector into social partnership, bring Comhar under Dept. of Taoiseach
  - Reform CDBs to comply with Local Agenda 21 - add environmental dimension/platform.
  - Ratify and implement Aarhus
  - Provide increased independent funding support to environmental NGOs (citizen vouchers could facilitate monitoring of sector)
- Create a media environment to steer society, invigorate the public sphere, and ensure a genuine democracy
  - Change the freedom of information legislation back to its original form but to include greater access to corporate information of public interest and provide support to 'whistleblowers'.
  - Amend the defamation laws to encourage more investigative journalists and enhance accountability
  - Tighter regulation should be introduced to reduce concentration and possibly the effect of

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foreign ownership.

- Non-profit forms of ownership could be encouraged, such as trusts, whose explicit goals are related to the public interest.
  - The independence from government of public service media (RTE) and its accountability to the public should be reinforced by allowing the civil society sector to nominate a given number of members to the RTE Authority.
  - All RTE programmes and other public media archives should be made available to all for non-profit purposes – as is becoming the case with the BCC.
  - The capacity of community radio and television to contribute to the new internet based media needs to be reinforced with core funding derived from the commercial sector
- 
- Initiate SD 'stick and carrot' programmes to citizens that can replicated and/or be extended to third countries especially Africa
    - Implement Cap and Share for transport and extend it to heating fuel in Ireland and press for its adoption in Europe.
    - Campaign in Europe to abolish the ETS in 2012 and replace with Cap and Share offering the released permits to developing countries (first refusal to Africa) according to an equal per capita share thus reducing indebtedness and fostering technology transfer and decoupled economic development. (See detail in Feasta pamphlets)
    - Integrate GHG permits into a GHG sequestration scheme, awarding permits against certified sequestration projects in agricultural land practices, forestry and especially biochar production and soil incorporation in Ireland and Cap and Share partners overseas.

**See Supporting Material sample at the end of this document.**

## **IMPLEMENTATION, MONITORING AND FOLLOW-UP**

33. The Commission will submit every two years (starting in September 2007) a progress report on implementation of the SDS in the EU and the Member States also including future priorities, orientations and actions. As for the monitoring at EU level, the Commission will, in analysing the state of play with regard to the challenges described above, draw on a comprehensive set of sustainable development indicators (SDIs), taking into account the EUROSTAT SD Monitoring Report, to be updated every two years, as well as on the latest scientific evidence and on developments in relation to key EU activities (strategies, action plans, legislation).
34. To ensure both a comprehensive and in-depth coverage of the complexity of sustainable development, the indicators are to be developed at the appropriate level of detail to ensure proper assessment of the situation with regard to each particular challenge.
35. The Commission, in cooperation with Member States through the working group on SDIs, will further develop and review indicators to increase their quality and comparability as well as their relevance to the renewed EU SDS, also taking into account other indicator initiatives and focusing on those indicators marked as most needed.
36. In 2007 at the latest, and at regular intervals after that, the Council will examine progress with regard to sustainable development indicators and will consider endorsement of a limited set of indicators for monitoring the SDS at EU level and for communication purposes.
37. With regard to the national level, the Commission progress report will build on Member States' actions to implement the EU SDS and the results gained from completed Peer Reviews. Each Member State will appoint a representative acting as SDS focal point enabled to provide, at the latest by June 2007 (and then at two-year intervals), the necessary input on progress at national level in accordance with National Sustainable Development Strategies (NSDSs) and if appropriate taking into account developments at sub-national level. Best use will also be made of relevant information from other reports by the Member States.
38. On the basis of the Commission progress report and the contributions of the Council, the December European Council should review progress and priorities every two years (starting in 2007) and provide general orientations on policies, strategies and instruments for sustainable development, taking account of priorities under the Lisbon strategy for growth and jobs. In that way, results from the EU SDS can contribute to work in the Lisbon context, including on the integrated guidelines, allowing for coherent treatment of cross-cutting issues such as climate change, energy efficiency, ageing and social cohesion.
39. The European Parliament will be invited to contribute views in the context of future progress reviews and engage in close cooperation with the Council and the Commission to ensure that the EU SDS enjoys the broadest possible support. The European Parliament could also liaise with national Parliaments. The European Economic and Social Committee (EESC) should play an active role in creating ownership *inter alia* through acting as a catalyst to stimulate debate at EU level, and is invited to prepare input to the biennial progress report of the Commission including a collection of best practices of its members. The Committee of the Regions could liaise with the sub-national and local levels.

40. Member States elaborating their first national NSDSs should complete these by June 2007. Future reviews of NSDSs should be undertaken in the light of the revised EU SDS, to ensure consistency, coherence and mutual supportiveness, bearing in mind specific circumstances in the Members States.
41. Voluntary peer reviews of NSDSs should start in 2006 with a first group of Member States. These should involve officials and stakeholders from other Member States, including national councils for sustainable development and, where appropriate, international observers. Peer reviews could focus either on the strategies as a whole or on specific themes. They should also serve to identify examples of good policies and practices. A subsequent round of peer reviews could start in 2007 with the next group of Member States. Peer reviews could be supported by scientific evidence through external evaluation.
42. Member States could make use of the existing European Sustainable Development Network with the aim of facilitating the exchange of good practices and experiences. It could gather views on specific priority themes and issues to be discussed by Member States in order to exemplify and document good policies and practices. This network could also be used to enhance the mainstreaming of sustainable development issues, vertical integration and coherence between the EU, national and sub-national levels of policy-making.
43. Member States should consider strengthening or, where these do not yet exist, setting up multi-stakeholder national advisory councils on sustainable development to stimulate informed debate, assist in the preparation of NSDSs and/or contribute to national and EU progress reviews. National sustainable development councils are meant to increase the involvement of civil society in sustainable development matters and contribute to better linking different policies and policy levels, also by using their network of European Environmental and Sustainable Development Advisory Councils (EEAC).
44. The EU institutions should improve internal policy coordination between different sectors. While the Council (General Affairs) should ensure the horizontal coordination of the EU SDS, other Council formations should verify implementation in their respective areas of responsibility. When reviewing progress, the Council should consider different options on how its work could be further strengthened to ensure proper implementation of the EU SDS.
45. At the latest by 2011, the European Council will decide when a comprehensive review of the EU SDS needs to be launched.

#### **Critique of EUSDS:**

1. Table above shows overlapping and intrusive implementation and reporting systems for *outputs* of a sustainable development strategy rather than the *outcome* of sustainable development.
2. There is an incompatibility between the goals of Sustainable Development and the Lisbon Strategy for economic growth that attention to cross-cutting issues cannot ameliorate as there is no economic linkage.
3. There is no mechanism for sustainability indicators to impact on decision-making or to direct change other than by exhortation.
4. Monitoring is not properly integrated with policy-making and science in a seamless closed loop, as advised under Agenda & Action 21.

#### **Irish Context:**

The challenge for Ireland is to stop pursuing the clearly quantified 'growth economy' where it has had considerable success, to that of the much more fuzzy qualitative goals of a mature 'grown up' economy.

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1. There is a widespread perception that our environment has less need for protection than other Member States because of our relatively low population and mild weather.
2. Private property rights are better protected in the Constitution and legislation than the common good; this is particularly evident in the case of land.
3. There is weak legal protection for any property held in trust

Objectives and Actions

- Provide the basis for the protection of environmental 'commons' wealth within the market system.
  - Pass enabling legislation for the setting up and management of commons trusts giving their assets equivalent protection to private property in law with a guarantee against confiscation
  - Set up appropriate trusts at arms length from government with articles and constitutions and with representation from the environmental and social sectors
  - Provide the powers for commons trusts to issue permits for use and/or shares and/or dividends as appropriate to citizens.
  - Charge them with the task to collect best available scientific information and to derive and maintain indicators for the protection and sustainable use of the commons assets inputting especially into the cross cutting issues of the NDP and satellite accounts of the Social Partnership agreements.
  - Give commons trusts the responsibility for strategic and other impact assessments (ex post and ex anti) of major projects and the powers to initiate legal actions against public and private interests on behalf of citizens where the trusts assets are threatened.
  - Ensure that commons trusts are independent through self-funding from a percentage of leases or sale of use permits and SIA and IA and other fees.
  - Assess executive appointments and remuneration by external evaluation based on performance indicators.
  - Actively work to reverse the ETS that has privatised commons property worth billions to large polluting industry and that has disastrously undermined the credibility of the European project.
- Provide a clear structure for dialogue and partnership between the third sector (including environmental NGOs and commons trusts), the private and public sectors at all levels of governance
  - Give full social partnership status to environmental sector including commons trusts
  - Move Comhar from the DoEHLG to the Department of the Taoiseach to join NESC in its supporting role to social partnership. Give direct representation to environmental/sustainability pillar on Comhar and social partnership.
  - Appoint single SDS representative to prepare progress report every year nationally and every two years to Europe.

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- Reform CDB (City and County Development Boards) to conform with Local Agenda 21 i.e include stronger environmental sustainability remit and a separate environmental pillar with equivalent EENGO and commons trusts representation
  - Substantial multi-annual financial support for national and local ENGOs. In particular, the full funding of An Taisce in its role as the watchdog body for sustainable planning and development.
  - immediate capacity building measures should be provided for in the voluntary sector
  - The ratification and full implementation of the spirit and provisions of the Århus Convention, and its enacting Directives.
- 
- Prioritise sustainable development objectives consistently in government programmes and plans at all levels
    - Proof the current and future NDPs against the National Sustainable Development Strategy and amend as necessary
    - Proof the Spatial Strategy against the NSDS- start by scrapping the Rural Housing Guidelines as being clear and blatant breach
    - Direct that the NSDS is enforced and carried through in City and County Development Plans
    - Direct that the NSDS be taken as the ultimate policy document informing An Bord Pleanala decisions
  - Grasp the opportunities of the INSPIRE directive to make new knowledge-based jobs and a step change improvement in environmental and social monitoring for SD.
    - Direct the Ordinance Survey to make all its maps available to the public at the cost of printing (as does the US and most EU States already)
    - Set up a powerful task force to expedite the coordination and vetting of metadata sets with spatial dimensions across all departments, local governments and agencies.
    - Invite spatial information sharing; gathering and incorporation of GIS onto base maps from the private and third sector on the basis of a 'copyleft' or similar open licensing arrangement
    - Publish environmental data monitoring in real time on the Internet i.e water and air quality sample data.

## **EENGO Recommended Topic to Add to Key Challenges: FOOD AND FUEL SECURITY**

### **Introduction**

This contribution to the NSDS will introduce a section to this report that attempts to give energy and food security the prominence they deserve.

Energy security has become an issue of increasing concern, not just in the EU, but world-wide. However

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it has not been included in the EU SDS, where it should most definitely belong. Fossil fuels are finite natural resources, whose inputs support the world economy, and access to a myriad vital services, including food production. The availability of cheap energy on demand has been assumed, or seen as a primarily political or economic issue. This thinking is myopic and dangerous; the finitude of energy resources is the most pressing issue of the day. According to Robert Hirsch “The peaking of world oil production presents the US and the world with an unprecedented risk management problem”. In addition natural gas supplies are uncertain, and there are growing concerns about coal.

The EU Commission’s Strategic Energy Review and Action Plan published in January 2007 sets out a policy for Europe. It remains largely blind to the real possibility of peak oil and gas, though it is alive to the possibility of supply disruptions and geo-political risk. It has set a target for renewable energy to supply 20% by 2020. Within this it sees a prominent role for biofuels.

#### **Irish Context**

1. Ireland’s fuel mix is 93% dependent on hydrocarbons, of which almost all is imported. This is made up of: oil-55.8%, Natural Gas-24.35, Coal-12.9%.
2. The Government White Paper [Delivering a Sustainable Energy Future for Ireland Energy 2007] is the government’s energy policy framework for 2007-2020. It builds upon various contributions including one from Forfas based on the work of Robert Hirsch and Amarach Consulting report on Ireland’s oil dependence and vulnerability to peak oil.
3. The report largely assumes supply will meet demand, though acknowledges the possibility of supply disruptions.
4. The report does not consider the implications for food security due to a decline in fossil fuel production.

#### Objectives and Actions

To manage Ireland’s transition to a low energy use economy

- To set up a cross-departmental office of strategic risk management to assess, integrate, and plan for major consequences arising from society-ecosystem break-downs.
- The state, via the national pension reserve should buy up any available rights to oil or gas deposits discovered in Irish waters. These should be developed and kept as a strategic reserve, and not sold on the open market.
- A rapid deployment of alternative energy resources and public transport networks should be initiated immediately, while we have the financial resources. This funding could be diverted from road building.
- Public spending should factor in the risks arising from energy depletion, for example, when building infrastructure. It should also account for mal-adaptation, as part of the cost of bad decisions.
- Public planning should factor in the risks arising from energy depletion, for example, in spatial

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planning, and building standards.

- The risk of long term global economic decline and depression arising from energy depletion should be factored into asset allocation such as the nation pension reserve.
- The risk of long term global economic decline and depression arising from energy depletion should be factored into schemes to support investment in localized resources. For example, supporting the financial architectures to allow individuals diversify some of their assets out of pensions, and into community energy schemes.

To support the move towards food sustainability

- Commit government funded institutions, such as hospitals, to purchase a rising percentage of sustainable produced Irish food.
- Support individuals, families, and communities in contributing towards their own food security, for example, by issuing vouchers for education in organic and bio-intensive agriculture.
- Support the further development of farmers markets and value-added food production close to food sources.
- Enhance biodiversity, and soil structure to manage both food security and climate change.
- To direct and support Universities and Teagasc, to re-orientate their research and education towards sustainable agriculture.
- Biofuel production should be limited to what Ireland can produce itself.

**See Supporting Material sample at the end of this document.**

**EENGO Recommended Topic to Add to Key Challenges: CULTURAL HERITAGE AND DIVERSITY**

**Critique of EU SDS**

1. The EU SDS does not include a Cultural Objective which is counter to the spirit certainly, if not the letter, of Agenda 21. Human cultural diversity is just as vital to sustainability as biological diversity.

**Irish Context:**

1. Poor protection of the non special but characterful and vernacular in the built environment.
2. Too much reliance on regulation rather than incentive to deliver cultural objectives.
3. Loss of truly independent expression in the Arts i.e Temple Bar
4. Lack of legislation protecting the property of Trusts holding property for the common good
- 5.

Objectives and Actions

- To protect and enhance the special and the characteristic of the Irish practical culture including landscape, architecture, archeology to artifact, furniture and other objects as well as abstract culture i.e language, music, drama, art etc.
- Maintain the significant and characteristic features of the Irish landscape
  - Ensure the implementation of the Convention for the Protection of Archaeology (Valetta, 1990)
  - Ensure the full implementation of the European Landscape Convention, 2000,
  - Introduce Landscape Conservation Areas as defined under Section 204, Planning & Development Act, 2000, to ensure significant areas of landscape in a national basis.
  - Take general measures applied to outstanding, as well as every day or degraded landscapes to achieve landscape protection and enhancement at all levels of planning and decision-making.
  - Incentivise the active stewardship of the landscape by farmers and land owners through reduction in land taxes and in appropriate cases, disbursement of annual fees or grants in recognition of the reduced economic value and enhanced community gain.
- Preserve, preferably in situ, the archaeological heritage to include structures, constructions, groups of buildings, developed sites, movable objects, monuments of other kinds as well as their contexts whether situated on land or under water.
  - Ensure the continuous monitoring and updating of the Records of Monuments and Places (RMP);
  - Ensure that environmental impact assessments and the resulting decisions involve full consideration of archaeological sites and their settings;
  - Ensure that that archaeological excavations are undertaken through non-destructive methods of investigation where possible;
  - Prevent any illicit excavation affecting archaeological heritage;
  - Provide for the acquisition or protection of areas constituting archaeological reserves;
  - Allocate of sufficient time and resources for an appropriate scientific study to be made of any site investigated and for its findings to be published.
- Recognise and protect all buildings and structures of historical, architectural or artistic, scientific, social or technical interest, including their fixtures and fittings, groups of urban or rural buildings and sites which are combined works of man and nature.
  - Ensure the implementation of the Convention for the Protection of Architectural Heritage (Granada, 1985)
  - Ensure the completion of the National Inventory of Architectural Heritage by the end of 2008;

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- Amend planning legislation to provide that all sites identified as being of international, national or regional importance in the national Inventory of Architectural Heritage be scheduled as Protected Structures under Section 59, Planning & Development Act, 2000;
  - Ensure the taking of effective legal enforcement action against dilapidation and unauthorised works;
  - Provide resources for the training and development of traditional skills in conservation.
  - Incentivise the active stewardship of listed buildings by property owners owners through reduction in land taxes and in appropriate cases, disbursement of annual fees or grants in recognition of the reduced economic vlaue and enhanced community gain.
- Foster a vibrant independent cultural diversity and all its physical and immaterial expression
    - Liberate culture from intrusive public sector oversight by abolishing the Arts Council and other public arbiters of taste and political acceptability
    - Distribute free culture vouchers equivalent to current public support of the Arts, to all citizens to use to enjoy cinema, all kinds of music, all kinds of drama and art. Extra vouchers to be targeted at disadvantaged groups, minorities etc.
    - Set up representative (non Art elite) forum of civil society to check individuals and groups providing cultural services ad products for bone fides but not quality.
    - Revisit copyright laws for music film etc
  - Enact Commons Trust legislation.

## **Samples of Supporting Material**

### **Sample One – Communication Section**

#### **An Appropriate Media and Communication Environment**

Media, whether print, broadcast, internet or other, have never been perfect in generating the kind of inputs and debate that are needed for people to steer society, invigorate the public sphere, and ensure a genuine democracy, and they probably never will be. But it is extremely important that we create a media environment that guards this aspiration as its core driving principle. Such a media environment must exhibit a number of basic characteristics:

1. Media and communication must be free from manipulation and censorship by government and other major vested interests;
2. There must be a great plurality of media sources for people to access and interact with;
3. They must be great diversity of views expressed;
4. All people and communities must have the means to create and disseminate their own content;
5. There must be ready and open access to information and knowledge of public interest, from both public sector and corporate sources, the stuff from which accountability is extracted;
6. People must understand the media fundamentals, how to interpret and assess content, to spot hidden messages and read between the lines, and how to shape their own messages;
7. Media governance must be an open and participative process, involving all stakeholders.

These are prerequisites of a media environment capable of public sphere capable of raising and taking on issues of global concern. The job of government is to nurture this media space into existence and to nourish and sustain it. First, good old-fashioned government censorship and oppression is not dead, by a long shot in many parts of the world from Tunis to China. In Europe, especially Eastern Europe, significant progress has been made in the last decade, but nevertheless both public service media and media regulators are still largely, though usually indirectly, influenced and manipulated by government. But other countries are not immune. Ireland has over the years seen regular attempts by government to limit reporting and investigation by RTE, the country's defamation laws have a serious 'chilling' effect on reporting, and the freedom of information laws, a model of open government when they were first introduced, were subsequently significantly curtailed. However, government control is not the major trend; nor is it the major threat in Ireland or globally. The emerging threat is the process of concentration of global media ownership into fewer hands, and the accompanying commercialisation and commodification of communication. Commercial media has exploded in the last couple of decades, beyond its original home in the Americas and across Europe, Asia, Africa. The flip side of this coin is increasing pressure brought to bear on public service media to adopt commercial principles and to scale down its activities. Media conglomerates have now become accepted as the norm, at global and national levels. Indeed, the policy of some governments is focused on how to ensure 'their'

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conglomerates can complete. Less than 10 media corporations control the majority of the world's media.

Several sub-trends are involved:

1. growing concentration of media ownership, transnationally, across and within media;
2. greater commercialisation of media as profit-generation gains higher priority;
3. greater commodification of content in the form of standardised media output;
4. growing reliance on advertising as a source of revenue.

In the Irish media, scant consideration is given to the effects of this – not surprisingly perhaps since much of the media is either: seeking to be bought out by (new commercial radio and television channels), has been bought out by (innumerable radio channels, regional and national newspapers), aspires to be (Denis O'Brien's stable of radio and other media interests), or already is (Tony O'Reilly's group), a media conglomerate. RTE is probably afraid to tackle the issue head on because of fear of a backlash from commercial media – and attention to its own dominant position. And if there is one thing worse than politically manipulated media and profit-driven corporate media, it is the two together. Recent examples of this combination are not hard to find from Berlusconi's Italy to Thaksin's Thailand (both gone), to Putin's Russia; and closer to home, to the deal struck between Tony Blair and News International for positive coverage in return for looser regulation; and even to talk of implicit deals between Fianna Fáil and O'Reilly's Independent Group. The deeply entrenched corporate-government links in the US were exposed with the invasion of Iraq – so clearly that it became an embarrassment to some of them (though there are few blushes at Fox News, the worst offender).

The European Parliament has already expressed serious concern about both media concentration and the links to politics. But why should we be concerned about the ownership concentration and commercialisation of media? Many argue we need larger media enterprises to compete globally. The trouble here is that treating media primarily as a commercial enterprise undermines its ability to act in the wider public interest and to contribute to the public sphere. The effects of these trends include the following:

1. Fewer genuinely diverse sources of information, as compliant editors and journalists are recruited to reflect the views and interests of their corporate owners and shareholders;
2. A reducing diversity of content, culturally as well as in news and analysis, as global entertainment perennials of violence, sex and spectacle become the norm; and costly current affairs are slimmed down in favour of cheaper infotainment and glossily packaged prejudice. And despite the promise offered by new technologies, most international news is still controlled by a handful of sources;
3. A narrowing of focus onto advertisers' needs, i.e. the middle classes, and burgeoning advertising space spilling into and contaminating editorial content;
4. A new variety of indirect political influence on news and current affairs, not so much self-censorship as an active bias towards political friends;

An ever growing distance between media and people, as corporate and agendas prevail and media and communication become merely another means to generate profits, and opportunities to influence media

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agendas grow more remote as self-serving politicians sell-out the public's right to govern to market mechanisms.

There is a further point. For the role of media is society goes beyond informing the public domain and enriching democracy. It also plays a crucial and growing role in the formation of individual and collective identity. With the dissolution of the extended family, social solidarity and (for that matter) structures of subservience in society, mass media become central to both individual identity formation, especially for young people, and for collective identity formation. Often unknown to us, the media play a huge role in determining not only 'who we are' and 'what group we belong to' – but the range of possible identities available to us and whether they embody solidarity, cooperation, understanding and respect, or fragmentation, competition and difference.

The danger with a highly commercialised media, driven by advertising and brands, is that it promulgates only a limited set of 'identity options', operationalised by the individual selection and consumption of branded goods associated with carefully crafted 'lifestyle values'; and carries an associated implicit but powerful devaluation of identities associated with shared ideals. At the core of the identity promoted by such media is individualist consumerism, an identity in which consumption, and conspicuous consumption, is at a premium. Evidence in Ireland of the aspiration to this identity – by no means the result solely of media given that the government appears to share the view that is a worthy enterprise – is all around. The problem is that it tends to run counter to the tenets of environmental sustainability, through on the one hand a lifestyle choice of maximum resource consumption, and on the other the weakening of an ethos of collective action and political participation. The impact of commercial media on identity in countries undergoing a process of deep and rapid cultural change, such as India and China (to name some of the larger ones), is even more dramatic. In short, the risk with current trends is that the process and content of the cycle of communication between people - our culture, our politics, our identity - are processed and packaged into commodities, with the goal of maximising the profits of media corporations. This in turn limits both the extent to which media are capable of enriching the public sphere with timely and trenchant criticism and knowledge, and the extent to which people are inclined to act on that information.

What can the government do to ensure that the media will actively enrich the public sphere with debate and analysis on key issues such as sustainable development, and will continue to do so against the pressures of vested interests? The first steps are to acknowledge the problem and to examine the scale of it. The process of media concentration and commercialisation and its manifold impact on society should be examined in depth and public debate opened on the issue of the kind of media environment we want. Furthermore public participation in the process of policy making should be vastly improved, as the rationale and underlying objectives of media policy are seldom aired. Such participation would need proper resourcing, be able to draw on serious and independent research, and take place from the earliest stages.

One of the few times such a discussion was opened out, in the form of the Forum on Broadcasting that reported in 2002, it strongly endorsed the value of both public service and of community media, against pressures from commercial media, for the first time emphasizing that there must be three Pillars to Irish

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media. The creation of a balanced media structure, in which commercial media exist alongside fully independent and well financed public service media as well as strong and vibrant community media sector should be a key objective for media in Ireland. Public service media can set standards for commercial media in terms of news and current affairs, and programme production generally; but community radio, television and other media provide a much more direct means for people to raise and debate issues and a tool for empowering people in relation to how the media operates and enabling them to become directly involved. Although all three sectors are finally recognised in Ireland, the current balance is skewed far too much in favour of commercial media, and provides virtually no concrete support for the community element

The main tools available to the government to influence the media are laws, policies and regulations which can be deployed as passive (non-interference) or active measures. Passive measures clear the way for responsible media to do their job; active measures offer inducements and other means to shape the sector and encourage and enable media to focus on the public interest. Among urgent passive measures are the need to amend the defamation laws to encourage more investigative journalists and enhance accountancy; and to change the freedom of information legislation back to its original form but to include greater access to corporate information of public interest and provide support to 'whistleblowers'. Active measures are more important to a balanced media environment. The media market in Ireland is among the most concentrated in terms of ownership, and tighter regulation should be introduced to reduce concentration and possibly the effect of foreign ownership. Non-profit forms of ownership could be encouraged, such as trusts, whose explicit goals are related to the public interest.

The independence from government of public service media (RTE) should be reinforced, and its accountability to the public reinforced, for instance by allowing the civil society sector to nominate a given number of members to the RTE Authority. All RTE programmes and other public media archives should be made available to all for non-profit purposes – as is becoming the case with the BCC.

Most of all community radio and television, and indeed their capacity to contribute to the new internet based media, needs to be reinforced. At present they have no secure funding and at least some core funding should be derived from the commercial sector. In France, for instance, community radio is funded through a scheme resourced by a proportion of advertising revenue of all media. But community media could also be transformed into a vehicle to educate the public about media, not just technically but through outreach programmes in schools and communities and so forth. And there is also a role for changes in the formal school curriculum to education new generation about media.

## **Sample Two – Food and Fuel Security Section**

### **Background and Context for Energy**

A simple definition of energy is *the ability to do work*. Energy animates our lives and our marshalling of it has shaped the contours of human development. An investment of fossil fuel resources are present in almost all that exists around us, including the food and water that sustains us, and all man-made objects. Oil and natural gas are valuable not just because they provide a source of energy, but that source of energy is concentrated and of high quality; and especially in the case of oil, easy to transport.

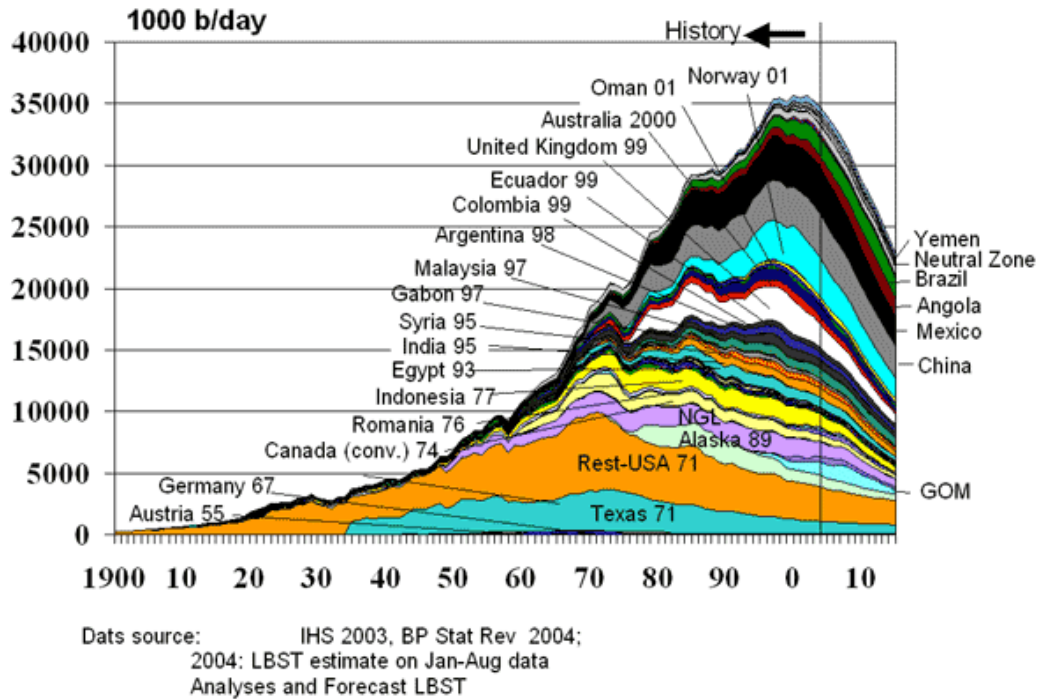
The evolution of modern society is itself a creature of fossil fuels; our mode of habitation, work, culture and leisure reflect this. Without a large flow of energy through society, economies would crash, and social structures shatter. Perhaps this very ubiquity has made us blind to how critically human life and civilization depends on access to it, as desired, and at an affordable price.

There are very good reasons for concluding that this assumption is about to break down due to the immanent onset of Peak Oil, severe natural gas supply issues, and Peak Gas. The attendant issue is what replacement energy sources are available, the quality of that energy, its cost, and to what extent it can be scaled up to replace the declining fossil fuel input and the increasing energy required by economic growth.

Peak Oil refers to the point at which the global production of oil can no longer increase. It does not mean oil has run out, but that after this point net production is will go into decline. There are many things that may hinder oil production, including geo-political conflict, and under-investment in production. However the fundamental point about peak oil is that it is based on geological constraints. A rise, peak, and decline in oil production has been seen in many local contexts, oil production has been in decline in the lower 48 states of the US since 1971 as famously predicted by M King Hubbard; and in the UK's North Sea fields, since 1999, figure 1. In both cases neither higher oil prices nor new technology arrested decline; decline is the inevitable consequence of production. Nor are non-conventional supplies likely to substantially alter the picture, they have a very low energy return on energy invested (EROI), and the invested energy is most likely to be from another critical resource, natural gas.

It is almost universally agreed that peak oil will occur, the debate is about timing. Some believe that we are at the peak today, others that it may not happen until after 2030. Appendix I lists the most up-to-date series of estimates. The majority suggest the peak will be prior to 2015. That is within the life of this NSDS.

Oil forms 40% of energy traded and over 90% of transport fuel globally [Campbell, C. *When will the World's Oil and Gas Production Peak?* In "Before the Wells Run Dry, Ed Douthwaite R., Feasta and Lilliput Press 2003]. Ireland has the third highest oil consumption per capita in the EU, arising from its use in transport and electricity generation, though in the latter case it is being phased out. This makes Ireland very sensitive to oil price shocks, and peak oil in general.



**Figure 1:** Oil production, and peaking for countries outside the Middle-East and the former Soviet Union.

## Natural Gas

The International Energy Agency expects the global demand for natural gas to continue rising indefinitely. Sustainable Energy Ireland expects natural gas to rise from 40% of fuel inputs for electricity generation in 2005, to 51% by 2010, and 45% by 2020 [ref: quoted in: Delivering a Sustainable Energy Future for Ireland, Government White Paper, 2007, page 27] Natural gas is also a finite resource, that will at some time peak, though estimates of when are more difficult to ascertain for a variety of reasons. In 2001 and 2002, for the first time, more gas was used globally than found, this is a repeat of the situation that occurred twenty years ago for oil [ref: Darley, J. High Noon for Natural Gas. Chelsea Green, 2004]. The former head of exploration technique at Total, Jean Laherrere has predicted a global gas peak in 2025.

There is a more pressing problem for natural gas supply than its peak. Natural gas cannot be transported except at very high pressure, or very low temperatures, making delivery very expensive and technically complex. Coupled to this, most gas reserves are a long way from their markets. This means that gas must be delivered along fixed pipelines, must be planned long in advance, and that long-term contracts are the norm. Whatever about the infrastructure, the gas must be there in the first place. The onset of peak gas may be more sudden for gas fields, and the decline rate much greater than for oil. Nevertheless, the IEA is already warning that Russian investment in infrastructure may prove inadequate to supply existing contracts.

Many gas producers are in decline (UK and US for example), and global demand is rising... This is having more and more countries energy security placed in the hands of fewer producers, and this dynamic will continue. While much comment has focused upon the geo-strategic aspects to this, particularly European-

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Russian relations, the underlying factor is that the pool of supplier countries will shrink because natural gas production is peaking in supplier countries. Even with the best of relations between Russia and the EU there is scepticism that gas will keep flowing according to IEA projections [Stern, J. The New Security Environment for European Gas: Worsening Geopolitics and Increasing Global Competition for LNG, Oxford Institute for Energy Studies, NG15, 2006].

Natural gas can be liquefied at atmospheric pressure when cooled to -260°F, this reduces the volume and allows for shipping and transport. The process from extracting natural gas through delivering it to a customer, via Liquefied Natural Gas (LNG), is known as the LNG Train. It is exceedingly expensive and very energy intensive. Just to ship LNG from Qatar to the eastern US would cost 15% of the energy contained within the shipment. [Darley, page 60]. While massive investment is going into this area, there is a wide spread fear of a large shortfall between the demand for LNG and the ability to supply it. Thus supply disruptions and high prices are an inevitable before peak gas.

#### **Adaptation to oil and gas constraints**

The onset of peak oil will give rise to higher prices, \$200 and more per barrel [ref: Leeb, S, The Coming Economic Collapse, Warner Business Books, 2006]. This will raise the price of petrol, aviation fuel, and a vast array of petroleum based products and services, from plastics to food. Oil price increases will reduce national income because there will be less available to spend on other goods and services. Tax revenues will decline.

Large inflationary pressures will restrict growth and lead to rising unemployment. Attempts to manage it using traditional economic instruments such as raising interest rates are likely to be counter-productive, pushing economies, including Ireland into depression. Unlike the oil shocks of 1973-4 and 1979, once the continual downward trajectory for oil production is noted, stimulating the economy through debt will become very difficult as repayment will become more and more uncertain. Demand destruction (due to unemployment, business failures) may lead to fall in oil prices temporarily as a new dynamic equilibrium is reached, until the cycle begins again as oil production falls even further. Large levels of consumer and public debt at the onset of peak oil will exacerbate the crisis.

The direct effects of gas shocks are likely to be more sporadic and localized, though with many similar effects to oil price rises. However as the countries at most risk, the US and those of the EU, are also the most globalize, the effects will be felt world wide. It will principally effect electricity generation and food production, causing further inflation.

#### **Renewable Energy**

We have large complex infrastructures, and capital invested in our current energy generation, distribution, and modes of use. The transition from our current patterns of use to a new form would be time consuming and expensive. Robert Hirsch [Hirsch, R. Peaking of World Oil Production: Impacts, Mitigation, and Risk Management, SIAC, 2005] has emphasized the rate of turn-over of capital stock, the average age of road transport stock is 9 years, and aircraft have median lifetime of 22 years. Because our economy and spatial

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development is so dependent on car use, adapting to a sudden change would be very difficult to engineer, either by reversal or adaptation. Hirsch suggests we would need 20 years prior to the onset of peak to prepare for the transition, and 10 years would be a very difficult and traumatic. Acknowledging that there is a good to medium change that we will have peaked within 8 years, alarm bells should be sounding.

Steel and polycrystalline silicon production is currently limited by the rate of extraction of base resources and the physical capital to process them. Wind turbines and solar panel production is currently limited by the availability of these processed resources and the physical capital to turn them into finished goods. This has resulted in acquisition costs for wind turbines rising and waiting times increasing to over 2 years as supply has continued to lag growing demand. In future, especially once energy prices rise considerably and oil and gas peaking are felt and noted, a new constraint may come to the fore. These processes are very energy intensive; the embodied energy for polycrystalline silicon is 3 years, at peak output. As energy prices rise, so will the cost of alternative energy sources. In addition, one only needs to imagine that to transform all Europe's electricity to solar generation (assuming it would always give us peak power) would require all of Europe's electrical energy use for 3 years just to build the panels. While this would be impossible, it gives an idea of the constraints that transition will bring.

There is at present no realistic alternative to petrol. Biofuels are very land hungry and compete directly with food. In addition the current economics and productivity of food and biofuels are dependent upon fossil fuel inputs. Biofuels can only ever replace a small part of oil use, and the price is likely to rise in tandem with oil. Developing technologies such as cellulosic ethanol are practically some years off, and crucially will rely on fertilizers (from natural gas) and compete for land with food.

The hydrogen economy is decades off, even if viable. At this stage expecting it to release pressure on falling oil production is not a policy, it is wishful thinking. The situation is similar for electric cars. We soon will have problems supplying our current base-load electricity production, expanding it to include the energy required by road transport is not realistic.

Natural gas-to-liquids could be used to run transport but would be based on a very energy intensive, and equally precarious gas supply. That means it would be neither cheap nor secure.

Coal-to-liquids is a well developed technology that could replace some oil, though it is very energy intensive. Traditionally coal reserves were thought to have a production-to-reserve ratio of over 100 years, recent research for the German parliament, and for the European Commission suggest this may be very optimistic [1: Zittel, W and Schindler, J. Coal: Resources and Future Production, Energy Watch Group, EWG Paper 1/07. 2: Kavalov, B. and Petev, S. Institute for Energy (IFE) for the European Commission Joint Research Centre, 2007]. However, even if reserves are plentiful, the risk will rise of an even greater switch to coal with a corresponding rise in GHG emissions. This would be particularly serious in the context of declining economies (arising from peak oil, gas issues), when the extra expense of cleaner coal power plants or sequestration might be considered an unaffordable luxury in the short-term.

Ireland has great potential in generation electricity from wind. In spite of this Ireland's wind. As wind is effectively the only potential large scale indigenous generator of electricity, its development lags that of our

European partners such as Denmark and Germany. However wind remains cost effective, and may be cheaper than fossil fuel electricity sources, if subsidies to the fossil fuel industry are accounted for.

A number of Irish and international companies are in the research and development stage with various devices to obtain energy from wave and tide. None are in commercial production as yet and it is likely to be some years before they are.

Anaerobic digestion of human and animal waste has a large potential for deployment. It is particularly suited to local distributed energy production.

### **Background and Context for Food Security**

The issue of food security might seem at first glance to be an odd concern, considering that Ireland has a relatively low population density, good land, access to water, and a highly efficient productive base. However to understand why food security is of such importance one needs to step back and explore some of the origins of the agricultural revolution, and its critical dependence on unsustainable systems.

Between 1900 and today, the gap in productivity between the least and most productive agriculture ranged from ten quintals per agricultural worker to a hundred, a ratio of 1 to 10. Today that ratio is about 1 to 1000 [Mazoyer, M, Roundart, L: A History of World Agriculture, p441, Earthscan, 2006]. This massive increase in productivity became known as the agricultural revolution. It enabled the global population to increase from 1.6 billion in 1900 to six and a half billion people today. It also meant that for the first time ever a large majority of Europeans have never experienced food shortages. All this was achieved while food prices dropped in real terms, so even the poor in developed countries could afford regular meat.

The agricultural revolution referred to new plant and animal breeding technologies, but most of all it was the marshalling of fossil fuel energy to satisfy our most basic need, food. Natural gas is the feedstock of fertilizer (accounting for a third of agricultural energy consumption, and supporting 40% of world food protein production [Lucas, C, Jones, A, Hines, C :Fueling a Food Crisis. The Greens/ European Free Alliance. 2006 page 8]), and oil the feedstock of herbicides and pesticides. Oil supports the use of farm machinery and irrigation pumps, the operation of animal facilities, food storage and transportation.

The secondary effects of this revolution were profound. Increased productivity meant that agricultural labourers, who once made up 40%-60% of the working population, left the land and moved to cities, driving urbanization and releasing the productive forces that drove industrialization. Land that formerly supported working horses and oxen was released for food production as farms became larger and mechanized. It has supported a globalization of food production and distribution that is highly efficient but utterly dependent upon liquid fuel.

Since the 1970s the marginal returns in agricultural productivity by investments in machinery, pesticides, and new crop varieties etc have been declining. This is due to reaching more rigid biological and photosynthetic limits; and the increasing investment required to militate against the damage and disturbance modern agriculture embodies. For example 10% of energy in US agriculture is used to off-set the effects of erosion,

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partially caused by mechanization, and increasing pesticide use is required to fight against pests developing resistance. Ultimately these are expressions of thermodynamic limits being reached.

The supply-demand balance, and food access and distribution are the kernel of human food security.

### **Demand side drivers**

*Population:* As population rises demand for food grows. The current global population is 6.56 billion, by 2050 the UN expects it to rise to 9 billion (a 37% rise).

*Diet:* As societies grow richer, their diets tend to move up the food pyramid, to more energy, land, and water intensive food production. Lester Brown has calculated that if everybody on earth ate at a US level, the world would with current harvests support 2.5 billion people(calculated using grain equivalents) ; an Italian level of consumption would support 5 billion people; at Indian levels of consumption, 10 billion people [ref: Brown, L. Plan B2.0. Norton 2006 page 177].

### **Supply Side Drivers**

*Soil:* Globally the stock of food producing soil has been declining due to increasing salinity, desertification, loss of land to the built environment; and nutrient loss [ref: Goudie, Andrew, The Human Impact on the Natural Environment, Blackwell Publishing, 6<sup>th</sup> Ed. 2006]. Carbon loss due to deep tilling has had the additional effect of contributing to large emissions of GHGs.

The amount of reclaimed land has been a much smaller fraction of land loss. Deforestation, particularly in South America and South-East Asia have released land previously unavailable for food production, but at the cost of increasing GHG emissions, and loss of biodiversity.

*Water:* It takes 1,000 litres of water to grow a kilo of wheat, between 2,000 and 5,000 litres of water to grow one kilo of rice, 5,000 litres for a kilo of cheddar cheese; and 11,000 litres to grow enough feed for enough cow to make a quarter-pound hamburger [ref: Pearce, Fred, When the Rivers Run Dry, Eden Project Books, 2006]. The human impact on water sources and courses had become a more critical issue as demand rises, quality declines, and the unsustainable depletion of aquifers continues. Growing regional conflict over water resources is increasing, reflecting the current pressure on an increasingly scarce resource.

*Fishing:* More fish are now being commercially farmed, deflecting some of the pressure of increased fish consumption away from non-farmed stocks. The state of the worlds fish stock remain unchanged for the last fifteen years: 52% of stocks fully exploited; 20% moderately exploited; 17% over exploited; 7% depleted; 3% underexploited; and 1% recovering from depletion [[ref: State of the Worlds Fisheries and Aquiculture, FAO March 2007]. However, climate change is expected to put considerable strain on fish stocks due to rising sea temperatures, and the loss of breeding sites such as coral reefs [Ref: IPCC 4<sup>th</sup> Assessment: Impacts, Adaptation and Vulnerability, 2007]. The ability to significantly increase farmed stock will be limited by energy, water, and other environmental concerns. The conclusion therefore is that total food produced from fisheries and aquiculture is likely to decline over time, unless substantial action is taken on several fronts, especially climate change and fisheries management.

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*Climate Change:* Climate change is expected to have a complex and non-linear relationship to food production, directly and via its effect on soil, biodiversity, and water. In addition, deforestation for food production or bio-fuels will provide a positive feedback to climate change. In some parts of the world, yields are expected to rise, in other parts, fall. The net effect according to the IPCC could be a modest rise in agricultural productivity below a 3C rise in average global temperature, and a fall there after. However, flooding and droughts would have a negative impact on this [Ref: IPCC 4<sup>th</sup> Assessment: Impacts, Adaptation and Vulnerability, 2007].

*Biofuels:* Recently a direct competitor for agricultural land has been bio-fuel production. Its development has been driven by climate change concerns and the rising oil prices. Increasing biofuel production has already affected food prices. Tyson, the world's largest protein producer has warned that higher grain prices were pushing up the cost of beef and chicken [ Tyson chief cautions on impact of rise in grain prices, Financial Times, 14 Nov. 2006]. It has played a part (along with drought in Australia) in reducing wheat stocks to the lowest level in 25 years [ref: World wheat stocks at lowest level for more than 25 years, Financial Times 13 October 2006]. The growing displacement of grain for biofuels in the US doubled the cost of tortilla in Mexico in 2007, leading to riots. These concerns were amplified by the UN Energy report warning of possible major detrimental impacts on food security by bioenergy [ref: UN Energy: Sustainable Bioenergy: A Framework for Decisionmakers May 2007].

Biofuel production, productivity, distribution, and economics are all dependent upon fossil fuel derived inputs and thus vulnerable to oil and gas price rises. The result is that post-peak, many of the targets for biofuel production in Europe may come under new pressures.

Oil has such a central role in the functioning of modern economies that very high oil prices and oil scarcity could drive a major expansion of biofuels, effectively converting dwindling food production capacity in an attempt to prolong an increasingly strained but unsustainable way of life. The obvious tensions between the wealthy and the rest could end up causing massive social unrest.

-----a Biofuel graph will go here-----

*Plastics:* Chemical plants consume about 10% of global oil supply, and about the same again in natural gas. The oil is used as feedstock that supports for a vast array of products, including; plastics, detergents, computers, DVDs, paints, dyes, food coloring, and perfume. Plant-derived carbohydrates would be suitable to replace oil in this context, however it is estimated that it would take 27% of the combined US harvest of maize, soya and wheat to replace US plastics production. In addition, this assumes current production technologies, mechanization and fertilizer, all of which would be expected to be scarce and expensive in such a context.

*Fossil fuels:* It has been estimated that ten calories of fossil energy is required to give us one calorie of food energy. Energy investment in the whole food production process is so ubiquitous that only certain aspects will be highlighted.

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Nitrogen fertilizer formed by the Haber-Bosch process uses hydrogen to capture atmospheric nitrogen and make ammonia. The hydrogen to make this comes from natural gas. Hydrogen could of course be produced from coal, or electrolyzing water, but at a huge energy cost, and in the case of coal, massive GHG emissions. The utility of nitrogen fertilizer is clear, allowing crop yields to double and triple. It has been estimated that without nitrogen fertilizer no more than 48% of today's population could be fed at a generally inadequate per capita level of the year 1900 [ref: based on Simil, V. Long-Range Perspectives on Inorganic Fertilizers in Global Agriculture. International Fertilizer Development Centre, 1999]..

Irrigation is used on only 17% of the world's cropland, but that land produces 40% of the world's food. Irrigation is very energy intensive, for example, it consumes 10-11 billion litres of diesel per year on the Indian subcontinent. "Energy costs are a life-and-death issue for small farmers in South Asia", according to Tushaar Shah, a scientist with the International Water Management Institute [ref: quoted in Strahan, D. The Last Oil Shock. John Murray Pub. 2007, page 128].

The mechanization of farming, and the global distribution, transport, and packaging of food depend upon cheap and plentiful oil. The natural consequence of high oil prices and scarcity is more human labor involved in agriculture, and more local and seasonal food.

#### **Summary**

The assumption of a continuing growth in food supply to meet an expected rise in population and the transformation in dietary habits would be questionable without having to consider oil peak, gas supply crunches and peak. If into this precarious mix large-scale biofuel production is added as a competitor to food production the consequences are likely to be severe.