



STRONGER TOGETHER

**CONGRESS**

Irish Congress of Trade Unions

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# GREEN SHOOTS

Maximising Job Creation  
in the Green Economy

November 2009





**The focus of this report is on the potential for significant employment growth through moving to a greener Ireland:** an economy far less dependent on fossil fuels for energy and transport, one that will gain a reputation for enterprise and innovation in the field of environmental goods and services. The achievement of this vision requires strategic reorientation of existing economic instruments, incentives and regulation. Here the Irish Congress of Trade Unions sets out its ideas on what measures are necessary to create thousands of green jobs on the island.

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## Green Jobs Initiative

The economic crisis, and most especially the rapid increase in unemployment, requires a new approach to investment and job creation. With increasingly limited resources, more than ever the focus needs to be on projects that are economically and environmentally sustainable, that have significant job creation potential, that, as far as possible, utilise natural resources and address future challenges, especially in respect of energy and the environment. Congress believes that a green jobs initiative provides the best prospects for achieving sustainable employment and economic growth. Targeted measures embracing the energy, transport, manufacturing, construction and agricultural sectors can yield significant employment gains while reducing external energy dependencies and costs. Combating global warming is also important. Without a greening of our economy we risk financial penalties. While it's possible that the effects of the recession will mean that our EU obligations under the Kyoto Protocol will be met, a follow-on climate change agreement is likely to require further significant cuts in greenhouse gas emissions with the threat of significant penalties or charges in the event of failure. With economic recovery in the major economies the prices of oil and gas are likely to increase significantly placing us at additional disadvantage unless there is a major switch to alternative fuels.

The employment prospects for the Irish environmental goods and services sector have been the subject of much debate and some important initiatives in recent years. Progress is evident in some areas with wind generated energy being a case in point. Frequently, however, proposals in one area seem disconnected from activities in others. Targets have been set, some of which are modest, others more ambitious but without any implementation mechanism specified. There appears to be no overall framework or strategy that guides all government departments, state agencies, educational and research institutes. It is in this context that Congress is outlining its proposals for a strategic approach to green job creation which we see as a vital aspect of meeting the economic, employment and environmental challenges we face.

### Key Features of a Green Economy

A consensus should be formulated on the issues of green job creation and a greening of the economy. The vision should encompass movement in three primary areas:



**Decarbonisation of electricity generation**



**Energy efficiency and conservation**



**Non-fossil fueled transport**

# This report suggests a number of new initiatives that could alone create 5,000 to 6,000 jobs.

6 Important steps in this transformation would be:

- ☛ **A system of electricity generation that has renewables as its primary input.**
- ☛ **A transport system that changes to bio-fuels where electrification is not feasible.**
- ☛ **An expanding proportion of housing stock that conserves / generates energy to the point of carbon neutrality.**
- ☛ **Research, education, and training programmes that provide the knowledge and skill needs of a green economy.**
- ☛ **Investment in green product manufacturing and services capable of trading internationally.**
- ☛ **An agricultural and food producing strategy that trades on our green and clean image.**
- ☛ **A financial system that facilitates investment in the green economy.**
- ☛ **A waste collection and disposal system that links to energy as well as environmental needs.**

These issues are developed below with Congresses proposals highlighted.

## Green Job Potential

Combining sustainable job creation with environmental sustainability makes sense. As Juan Somavia, Director General of the ILO, pointed out, 'Investments in energy efficiency, clean energy technology, and in renewable energy have enormous potential to create productive and decent work'. President Obama's economic stimulus package includes \$140 billion for green investment. The Australian Government has recently announced a plan to

create 50,000 green jobs. The global environmental goods and services market is expected to double during the next decade with an employment potential, according to the ILO, of well over 30 million jobs worldwide<sup>1</sup>. All of this signals a paradigm shift in energy use, generation and conservation with a rapidly expanding market for new carbon free technologies. The economies that adapt quickest to the change will benefit most.

Ireland has been slow to adapt to the change. Although there has been a significant expansion in wind power generation capacity it remains well below other small countries like Austria and Denmark. In Denmark strategic decisions taken in the early 1990s have put it in a leading position, not just in wind power generation, but in the manufacture of turbines of which it supplies 35% of global demand. There are 400,000 people employed in the sector in the UK. In the island of Ireland there are only about 6,500 people employed in the provision of environmental goods and services according to an Intertrade Ireland/Forfas Report<sup>2</sup>. This report describes the Irish EGS sector, with a few notable exceptions, as displaying low R&D investment. There is no reason why, with the right strategy, we cannot aim to have 40,000 working in the sector within a number of years. This report suggests a number of new initiatives that could alone create 5,000 to 6,000 jobs.

The Government's *Building Ireland's Smart Economy* framework report<sup>3</sup> spoke of the importance of the 'greening of the economy and the development of green enterprise'. A number of

<sup>1</sup> Green Jobs – Facts and Figures. ILO (2008)

<sup>2</sup> Environmental Goods and Services Sector in the Island of Ireland – Enterprise Opportunities and Policy Implications (2008)

<sup>3</sup> Building Ireland's Smart Economy – A Framework for Sustainable Economic Renewal (2008).

# A strategy for green jobs should be the subject of a social dialogue involving the social partners, including relevant industry representatives .

disparate actions were specified in support of this but without any evidence of a comprehensive strategy being put in place. This may result from the largely uncoordinated involvement of upwards of twenty government agencies and departments in green policy issues. **There is a need for a central coordination unit for all green policy issues and projects.** This is best located within the Department of the Taoiseach. This unit should be the focus for consultation and dialogue with representative groups.

## Making the Deal - Building Consensus

A strategy for green jobs should be the subject of a social dialogue involving the social partners, including relevant industry representatives . The proposal is for dialogue on a strategic framework that allows for input and buy-in by the social partners and the main political parties, building on the work undertaken by the Oireachtas Sub-Committee dealing with the issue.<sup>4</sup> Policy formation is enhanced by the participation of employers and workers representatives who have detailed knowledge which can inform the decisions of politicians and public servants. Such a process would commit all to the outcome and reduce the potential for conflict. The issue is too important to remain the subject of political, inter-departmental or inter-agency wrangling.

## Sustainable Electricity Generation

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The move towards sustainable sources for electricity generation is already underway. Renewables which accounted for just 4% of generation in 2003 now produce about 12% of our electricity. Over 100 wind farms (including one offshore) comprising more than 1,000 wind turbines are currently connected to the grid system in the island of Ireland. However, there will have to be significant further expansion if the government's target of 40% of electricity being generated by renewables by 2020 is to be achieved. Ireland has natural advantages in wind generation with relatively high wind frequency and intensity particularly on the western seaboard, offshore and on high ground. These advantages are offset by what are referred to as 'bureaucratic barriers' which may prevent Ireland from achieving the maximum potential from these available resources. Every effort should be made to reduce such barriers where they are not justified.

The biggest drawback with wind generation is its unpredictability; if there's no wind or if the wind is too strong generation ceases. Back up conventional capacity is therefore required to ensure continuity of supply during periods of calm. Technical ways of overcoming this problem have been suggested. One proposal<sup>5</sup> is to construct hydro storage reservoirs which would allow stored hydro generation to compensate for lost wind power. Another is to use spare capacity during windy periods to compress air in underground caverns which can be used to generate power as required. An enhanced inter-connector

<sup>4</sup> Oireachtas Sub-Committee on Creating Jobs Through Use of Renewable Energy Resources.  
<sup>5</sup> Advanced by Spirit of Ireland Group.

a technical working group be established to recommend on the most cost efficient and sustainable way to ensure continuity of supply in future years when a significant proportion of electricity is generated from wind power.

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network that would link Ireland to the European market for electricity would help overcome variability problems thereby reducing the need for back-up capacity. All of these would require significant capital expenditure and have implications for prices to consumers. Congress proposes that a technical working group be established to recommend on the most cost efficient and sustainable way to ensure continuity of supply in future years when a significant proportion of electricity is generated from wind power.

Other renewable sources include hydro, solar, geothermal, biomass and the harnessing of wave and tidal power. There is only small additional potential for hydro dams. Biomass, while having potential, can add to CO<sub>2</sub> emissions. Solar power and geothermal energy is being used to supplement conventional power supply in a small percentage of buildings. Ocean energy has particular attractions. Much of the coastline has significant wave energy potential and some sea inlets are viewed as having strong tidal energy flows. A number of wave energy generator prototypes are being tested. One company<sup>6</sup> has recently announced the successful completion of trials of a two megawatt unit located in Galway bay. The hope is to have 200 MW of ocean energy from all sources installed by 2020; enough power to supply up to 140,000 homes. A tidal stream generator is located in Strangford Lough and is the first grid connected tidal energy generator in these islands. These examples carry promise of significant generation potential around the Irish coastline. Research work is

being assisted by the Ocean Energy Development Unit in Sustainable Energy Ireland and the Marine Institute with the participation of most of the universities. Despite progress, the resources applied to research and development in this area can never match that available elsewhere. It is important, therefore that resources are not spread too thinly. Consideration needs to be given to the creation of designated centres of excellence for both wave and tidal energy involving a more focussed distribution of research funding.

### **Job Opportunities from Renewable Power Generation**

The major job potential from alternative energy is not in the generation side but in manufacturing and servicing. It is estimated that installation of turbines provides 5 jobs per MW of installed electricity whereas manufacturing provides 17<sup>7</sup>. By comparison, servicing and maintenance has a low labour content. Manufacturing of ocean energy equipment and generators would have an even higher potential for employment per MW of power generated. A major obstacle to realising the potential for manufacturing jobs is the small size of the metal engineering sector in Ireland, most particularly in the Republic. The Forfas / Intertrade Ireland study commented that: 'Companies on the island of Ireland have relatively little capabilities in the area of wind turbine design and manufacture. This is an extremely competitive market led by a number of large global players who supply the most efficient cutting-edge

<sup>6</sup> Ocean Energy

<sup>7</sup> Source: Danish Wind Turbine Manufacture's Association – contained in presentation by Sean O'Leary, IFA, to Oireachtas Sub-Committee on Creating Jobs Through Use of Renewable Energy Resources.

Consideration needs to be given to the creation of designated centres of excellence for both wave and tidal energy involving a more focussed distribution of research funding.

solutions for the utilization of the wind's power.<sup>8</sup> Encouraging, nevertheless, is the announcement by C&F Tooling that it is to begin designing and manufacturing wind turbines in its plant in Athlery, Co Galway, leading to the creation of 250 jobs. Indigenous companies entering this market are likely to be supplying the home market, at least initially, and therefore will have difficulty in accessing grant support from Enterprise Ireland. This will be equally true if and when the even more significant employment prospects for ocean energy equipment are realised. Unless the regime changes, the jobs generated by Irish public funded research will be exported. **A major review of the investment, employment and training supports needs to be initiated to ensure that the maximum employment potential from wind and ocean equipment manufacture is realized in Ireland.** This should be focused on attracting new and increased investment in hardware and software components.

A cautious estimate would suggest that over 3,000 jobs could be delivered within a few years.

### Fueling Green Transport

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Greenhouse gas emissions from vehicles in Ireland almost tripled between 2000 and 2007. To reduce emissions the Government have set a target of 10% of vehicles – equivalent to a quarter of a million cars - being electric by 2020. The announcement in April 2009 of a collaborative venture involving ESB and Renault-Nissan, is designed to assist this. It is intended to install kerbside and car parking charging points throughout the country along with 500 battery exchange centres. Renault-Nissan has committed to marketing a range of electric cars by 2011 and it is hoped that other manufacturers will also enter the market. Currently, a range of electric vehicles are being sold, mainly in the commercial transport sector. Hybrid vehicles have a small but growing share of the domestic car market encouraged by incentives under the new car tax regime. ESB has launched a pilot project involving a large segment of its fleet running on biofuel. While ESB's commitment is to be commended, the use of battery or biofuelled vehicles remains negligible at present and this is only likely to change if there are more inducements and, or, regulatory requirements. There is little likelihood of the government's targets being achieved unless the cost of electric vehicles becomes more attractive. The Commission on Taxation has recommended the substitution of VRT by a carbon based tax. The reform / abolition of VRT should be the occasion to bring in new measures that further incentivise the purchase of electric vehicles.

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Despite occasional trials, buses and taxis remain entirely fueled by diesel or petrol. This contributes to pollution in our cities and to our failure to meet our Kyoto targets; something that is likely to cost us hundreds of millions of euro. In other countries there are planned switches to alternative fuels. For example, it is expected that half of all busses in Helsinki will be powered by biofuels by 2010. **There is an urgent need to require public transport providers, especially those that operate in urban environments, to move within a specified time frame to biofueled or electric powered vehicles.** Uncertainty about the market makes farmers reluctant to invest in biofuel crop cultivation. As a result biofuel producers in this country have to import a significant proportion of their raw materials. A guaranteed outlet would encourage more farmers to produce, reduce imports and assist the growth of this manufacturing sector. Biofuel production was blamed for a rise in international food prices in 2007 which effected poorer countries. A move to second generation biofuels is designed to avoid this in the future. Ireland, in any event, has significant underutilised land capacity. In 2007 over 28,000 hectares remained in set-aside. Cut-away bogs can be used for biomass and bio-fuel production and Bord na Mona have major plans in this regard.

Moves to increase the electrification of our public transport system should continue. In this context, **the Metro North, the Dart Interconnector and Luas extensions planned under Transport 21 should be supported,** not least for their employment and environmental benefits.

### **Job opportunities from a greening of transport**

ESB has calculated that the roll-out of the infrastructure to facilitate electric vehicles will create 600 jobs. Construction work on Metro North will lead to about 3,000 jobs for a number of years and the Dart Interconnector will create almost as many. These jobs could provide a vital boost to employment and the economy and help recovery. Longer term benefits will only be derived if new businesses emerge to supply the electric vehicle market. Given a switch to new and lighter components the prospects for car manufacturing should not be ruled out although component manufacturing is more likely to emerge through either indigenous enterprise or FDI. In either event, if we are to achieve an employment dividend we need to develop educational, research and skills training in electric vehicle and battery technologies and in other green / clean technologies. A significant expansion in the use of electronic vehicles could attract investment in R&D, component manufacture and services with upwards of a thousand more jobs possible.

### **Energy Conservation in Buildings**

While regulations for new buildings have improved energy efficiency, the bulk of our housing stock remains poorly insulated with significant energy loss. Nearly 60% of the 1.6 million houses in the state were built before the relevant building regulations came into force. Energy conservation can be improved in these by the installation of energy saving materials and devises – including smart metering. This can be encouraged

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by user cost savings, tax incentives, subsidies or grants, or legislation building on the building energy ratings (BER)<sup>9</sup> requirements. The ban on non-energy saving light bulbs would also assist. SEI provides support and some grant aid for home energy conservation through the Home Energy Saving Scheme and the Warmer Homes Scheme. The ESB piloted a similar scheme in a number of counties and intends to extend this elsewhere in the near future. Through a combination of such measures the government hope to achieve a 20% improvement in energy efficiency by 2020. This is a modest target given the fact that Irish homes are already 29% less energy efficient than the EU average.

### Job Potential in Retro Fitting Homes

A major scheme of retrofitting houses built pre 1990 could greatly improve energy efficiency and, at the same time, create more than a thousand jobs. It is estimated that, with reasonable incentives, the market could encompass retrofitted about 200,000 homes at an average capital expenditure spend of €3,000 per household.

At a rate of 50,000 homes per year the estimated employment yield would be of the order of 1,500 jobs<sup>10</sup>.

The type of work involved would match the skills profile of many unemployed building workers. Over 6,000 persons have completed BER assessor training courses with SEI although it is likely that

only a small proportion of these have significant work of this type currently. Clearly the existing grant scheme will not provide sufficient inducement for this level of activity. However, a new method of financing could bridge the gap. Congress recommends that one or more financial institutions should be encouraged to extend loans to householders to finance greater energy efficiency, in conjunction with the main energy providers, on a 'pay as you save' basis, i.e. repayments would not exceed anticipated annual savings.

### Financing Green Jobs

Credit restrictions as a result of the banking crisis will potentially act as a brake on green investment without remedial action. In that context consideration should be given to the creation or designation of a Green Bank, which would have a specialist function in extending credit for green / clean projects and new business ventures. Such a bank would have to have sufficient assets to engage in commercial lending to businesses in the green sector. It could be assisted through links with the European Investment Bank which launched a 'Climate Awareness Bond' public offer in 2007<sup>11</sup>. In addition, **a Government backed Green Bond issue should be considered as means of funding new green ventures.**

<sup>9</sup> Since January 2009 all buildings being sold or rented must have a certified BER.

<sup>10</sup> We are grateful for the assistance of Aiden Burke of the Construction Industry Federation on this subject.

<sup>11</sup> The World Bank launched a Green Bond in January 2009.

# A major research project should be initiated focussed on extracting biogas from animal and human waste.

## Reuse of Waste

Waste, instead of being buried, should be reused or recycled wherever possible, and the possibilities for this are expanding. Thermal treatment (incineration) remains the most developed means of converting waste to energy and improved technology and regulatory control means this does not have to be seen as a dirty industry. Other systems include gasification (use of heat to produce gases that can generate electricity); anaerobic digestion (use of micro-organisms to breakdown sludge and slurry or land fill deposits to produce methane or other biofuels). These technologies are proven although the economic case for investment still remains problematic. However, there are many examples of slurry and sewage being successfully used to produce biogas for use in power generation or as a transport fuel. The raw material is free and as soon as the technology is perfected this is likely to become a viable alternative fuel on the market. Ireland, with a significant cattle herd has better than average potential. A major research project should be initiated focussed on extracting biogas from animal and human waste. New developments in this area could lead to hundreds of jobs being created

## Trading on a New Green Isle Image

The transformation envisioned in these proposals creates new possibilities for marketing the country and its produce. Because of climate and relatively low population density Ireland has advantages which can be built on if waste and pollution are minimised. The resulting rebranding opportunities could significantly boost employment. Food will remain a mainstay of economic activity and consumers worldwide are becoming increasingly concerned about quality and hygiene. Demonstrating a pollution free environment will greatly enhance food exports and the tourist industry. A new manufacturing sector can be developed in the green tech sector. However, tighter regulatory controls will be necessary to avoid near disasters as occurred in the bacon industry in the recent past. Additional regulation may also be necessary to achieve some of the goals envisaged in the Green Deal for Jobs. Should quieter and exhaust free vehicles be given exclusive access to the centres of our cities? Should our public transport systems be required to lead the way? Such questions need to be discussed by all concerned within the social dialogue framework proposed in this report. A consensus can be achieved if all focus on the goal of an Ireland fully employed in developing a clean and green future for our children.

# Summary of Proposals

- ☛ **A central coordination unit for all green policy issues and projects. This is best located within the Department of the Taoiseach.**
- ☛ **A strategy for green jobs to be the subject of a social dialogue involving the social partners, including relevant industry representatives.**
- ☛ **A technical working group to be established to recommend on the most cost efficient and sustainable way to ensure continuity of supply when electricity is largely generated from wind power.**
- ☛ **Consideration to be given to the creation of centres of excellence for both wave and tidal energy involving a more focussed distribution of research funding.**
- ☛ **A major review of the investment, employment and training supports to ensure maximum employment potential from wind and ocean equipment manufacture.**
- ☛ **The reform / abolition of VRT to be the occasion for new measures that incentivise the purchase of electric vehicles.**
- ☛ **A requirement on public transport providers to move within a specified time frame to biofueled or electric powered vehicles.**
- ☛ **Metro North, the Dart Interconnector and Luas extensions planned under Transport 21 to continue to be supported.**

- ☞ **Strategy to develop educational, research and skills training in electric vehicle and battery technologies and in other green / clean technologies.**
- ☞ **A major scheme of retro fitting houses to improve energy efficiency and create around a thousand jobs**
- ☞ **One or more financial institutions should be encouraged to extend loans to finance home energy efficiency work, on a 'pay as you save' basis.**
- ☞ **The creation or designation of a Green Bank which would have a specialist function in extending credit for green / clean projects and new business ventures.**
- ☞ **A government backed Green Bond issue as a means of funding new green ventures.**
- ☞ **A major research project focussed on extracting biogas from animal and human waste.**





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