



Llywodraeth Cynulliad Cymru  
Welsh Assembly Government

# Green Jobs for Wales

## A Consultation

*"We will develop an all-Wales Green Jobs Strategy"*

One Wales – A Progressive Agenda for the Government of Wales

November 2008



Helpu Cymru i leihau  
ei Hôl Troed Carbon

Help Wales reduce  
its Carbon Footprint



G/MH/3095/11-08  
ISBN 978 0 7504 4942 7

November  
CMK-22-04-045(162)

Typeset in 12pt  
© Crown copyright 2008

# Contents

	Page Number
Ministers' Foreword	2
Chapter 1 Introduction	4
Chapter 2 Setting the Scene	5
Chapter 3 'Greening' of Existing Jobs	8
Chapter 4 New Green Jobs	12
Chapter 5 How to Respond to this Consultation	17
Appendix A Evidence, Context and Issues	18
Appendix B Bibliography	22
Appendix C Policy Gateway Summary	25
Proforma for Responses	27

# Ministers' Foreword

The Welsh Assembly Government is committed to action on combating the causes of climate change, pursuing a more sustainable form of development that uses resources more efficiently, and setting Wales on a path to using only our fair share of the earth's resources.

Now is the right time to act on Green Jobs. In the current economic situation we have a responsibility to the people of Wales to direct economic growth in a way that will meet the needs of their future.

In this consultation, we want to hear your views on how we can further develop the Welsh Assembly Government's role, and understand how best to maximise the new opportunities in Green Jobs and to assist businesses to play their part in improving energy efficiency and combating climate change.

The development of a Green Jobs Strategy is a key element within our One Wales Programme for Government. We believe there will be new opportunities for existing businesses and new jobs as a result. Businesses in Wales can continue to be market leaders in areas of green technology and services, and new opportunities will open up as we move towards a low carbon low waste economy.

The Stern report was quite clear about the economic costs of delaying action; it also highlighted the potential rewards for those countries that take a lead by developing and exporting the new green technologies that will be required. This message is reinforced by the CBI climate change taskforce report ("*Climate Change: Everyone's Business*"), which highlights the complementary roles of consumers, government and business.

We are acutely aware that our carbon-intensive industries may feel threatened by the move towards low carbon, but we will continue to work with these sectors to support them to remain competitive and carbon-efficient rather than risk their loss to countries with less demanding standards.

On the other hand, as we move towards energy self sufficiency, and strive to live within our carbon budget, we will open up the opportunity for many new added value jobs. In particular, these opportunities will arise from the diversion of waste from landfill into new products for beneficial use, and the increased provision and use of renewable energy, including harnessing the power of the marine environment.

We look forward to working with Local Authorities to find ways to enhance the sustainability of developments in their area, encourage the new forms of development that a low carbon, low waste, economy will bring, and to ensure that economic, social and environmental factors are each given appropriate weight.

In preparing this consultation document, it has become increasingly obvious to us that Green Jobs are a key outcome arising from Wales becoming a more sustainable nation. The potential to create Green Jobs will arise in many areas of the Welsh Assembly Government, although it is natural for our Economic Development team to take the lead role. It is a cross-cutting agenda, and we are committed to joining up and integrating all our work to make Wales, as a small, smart nation, a beacon of sustainable development.

By placing the Greening agenda at the heart of our policy making and delivery activities, we hope to persuade the businesses and organisations we work with and support to do likewise, and as the CBI taskforce report says, **“incorporate climate change policies into their DNA”**.

A handwritten signature in black ink that reads "Ieuan Wyn Jones". The signature is fluid and cursive, with a long horizontal stroke at the end.

**Ieuan Wyn Jones AM**  
Deputy First Minister and  
Minister for the Economy and Transport

A handwritten signature in black ink that reads "Jane Davidson". The signature is cursive and elegant, with a large initial 'J'.

**Jane Davidson AM**  
Minister for Environment Sustainability  
and Housing

# Chapter 1: Introduction

*The value to the Welsh Economy of 'Green Jobs' is already estimated in excess of £1 billion (CBRMI, 2008).*

The Green Jobs Strategy will be the Welsh Assembly Government's framework for actions to enable businesses and organisations in Wales both to improve their own environmental performance and also to take advantage of business opportunities that arise as our society moves towards more resource efficient climate-conscious living and working. This move is now considered to be inevitable; it is widely accepted that climate change and resource scarcity will be key drivers in the way our society structures itself in the future.

Green Jobs are not just jobs in the renewable energy or environmental management sectors. We believe that the term '*Green Jobs*' can encompass jobs that arise from any activity which has positive outcomes for the economy, society and the environment.

Green Jobs come about as organisations take advantage of the economic opportunities that arise when they seek to reduce the environmental impact of their activity, particularly carbon reduction and resource efficiency. Even more jobs will be created as Welsh companies develop, commercialise, and sell the new products and services that will be required by changing consumer demand.

These activities are not just environmental in their aims – they also contribute to social justice and wellbeing through improved health and quality of living.

Action on Green Jobs will bring benefit to businesses and organisations at all stages of development. To enable the strategy to be delivered in a coherent and collaborative way, we propose that the actions from this strategy will be covered under the two key themes:

- '*Greening*' existing jobs: – "*Delivering environmental outcomes that create or safeguard jobs*" – the actions needed by businesses and organisations to adapt to increasing scarcity of energy and natural resources, and to the changing demands of supply chains, consumers, shareholders and stakeholders. We call this "Future Proofing".
- New Green Jobs – "*Creating new jobs that deliver environmental outcomes*" – Helping businesses take advantage of the new opportunities at home and abroad in the technology, goods and services that will be needed as we move to a low carbon, low waste economy.

**Chapter 2** describes the issues and context that have shaped our thinking to date.

**Chapters 3** and **4** outline the areas we think the strategy and implementation plan should focus upon, and what we think our aims should be in addressing them.

The concept of Green Jobs establishes an effective bridge between economic development and the less traditional business targets of environmental protection and social wellbeing. The creation of Green Jobs has the potential both for clear economic benefits and for attaining other targets relating to environmental protection and social welfare. The encouragement of 'Green Jobs' therefore is central to achieving a sustainable economy.

# Chapter 2: Setting the Scene

The Welsh Assembly Government is committed to pursuing sustainable development in all its activities, as reflected in the Sustainable Development (SD) Scheme which is now currently being revised. For the economic development aspects of our activities, we propose that our overall aim will be to achieve a strong, stable and sustainable economy for Wales that is able to continue to develop whilst stabilising and then reducing its use of natural resources and mitigating its impact on climate change. To achieve this aim, we propose to set the following purpose:

*We will pursue a sustainable, innovative and productive economy that delivers high levels of employment. We will do this in ways that contribute to:*

- *A pathway to Wales using only our fair share of the earth's finite resources*
- *Better economic and environmental conditions, particularly for our less well-off communities*
- *Meeting our targets on carbon emissions.*

## 2.1 Our Commitment

- *We will support and encourage companies to adopt 'greener' working practices; creating and diversifying jobs to help achieve these aims.*
- *We will encourage the growth of businesses and clusters that can deliver low carbon, low waste, goods and services, which meet the changing needs of customers.*
- *We will contribute to a vibrant, innovative and knowledge-driven economy that takes account of the needs of the future while ensuring a good quality of life our citizens.*
- *We will strive to maximise the positive social outcomes that can be achieved through the promotion of Green Jobs, particularly in our less well off communities.*

**Taken together, these commitments describe our first steps towards a new economy fit for the future.**

We believe that a Green Jobs strategy will bring together all of the good work already being done by businesses in Wales, and within the wider public sector and the Welsh Assembly Government. We want to assist businesses in a coherent and joined-up way building upon past successes of the Business Environment Action Plan and the Environmental Goods and Services Programme. We will take on board the recommendations of the Expert Panel on Resource Management for Wales in building a coherent and integrated system of business support that will deliver greener jobs for businesses throughout Wales.

By doing this, we will not only aim to change the business culture of Wales to be more environmentally aware and prepared for the future, but also contribute to a fair and just society, through increased skilled employment, encouraging social enterprises and promoting community engagement.



**Question 1.** Do you think that our aims and commitments are clear and realistic, particularly in view of the current economic situation?

*Please use the pro-forma at the back of the document to respond to this question.*

## 2.2 What This Consultation Covers

This consultation will cover how the Welsh Assembly Government can assist organisations and employers in Wales to best improve their own environmental performance and take advantage of the new growth market in green products and services.

We recognise that Green Jobs are not restricted to businesses in the private sector, so we define *organisations* as being any employer – small, medium and large enterprises, community or voluntary groups, corporate social enterprises, community interest companies and public sector organisations.

Many people in Wales are employed in organisations which are directly funded by the Welsh Assembly Government. We already have plans in place to deliver the First Minister's commitment to a carbon neutral Welsh Assembly Government, which include recommendations to improve our performance in relation to housekeeping, estates and procurement. As a major employer and a major procurer of products and services in Wales we are aware of our buying power and the need to harness this to stimulate the market for green, local goods and services for the benefit of Wales. This in itself will generate Green Jobs.

## 2.3 Evidence, Context and Issues

Ensuring that policy is evidence-based is important to the Welsh Assembly Government, and we have based this consultation document on three key areas:

- Environmental change
- Business opportunities
- Welsh and international policy context

A summary of the evidence context and issues is included in Appendix A. The bibliography in Appendix B includes many of the documents and reports that will be used in the creation of the final strategy. This is also available electronically at the Business and Economy section of [www.wales.gov.uk/consultation](http://www.wales.gov.uk/consultation).

## 2.4 Consultation and Response

Your views on the proposals we describe here are extremely important to us, and will guide us in deciding how the strategy should be structured and targeted. We are keen for you to suggest how you think the strategy objectives could be delivered.

If there are any gaps or areas that you feel we have not dealt with adequately, there is room for more general comments. There is an answer pro-forma included at the end of this document, where the questions are repeated for ease of use.

## About you

(Please note, there is a pro-forma at the end of the document for your answers – or you can download it in .doc format from [www.wales.gov.uk/consultation](http://www.wales.gov.uk/consultation) (Business and Economy section).



**Question 2.** Are you responding on behalf of an organisation or as an individual?

Business representative organisation

Private/commercial organisation

Social enterprise etc

Public sector

Environmental NGO

Private individual

**Question 3.** Are you currently greening your organisation? Yes / No  
(For example, energy management, water management, environmental policy, energy efficient lighting etc.)

If so, please list the key activities are you undertaking:

**Question 4.** Please list any environmental support organisations that you are aware of. Please mark those that you have received advice from.

**Question 5.** What action(s) (by the Welsh Assembly Government) might convince, or enable, your organisation to improve your 'green' credentials?

# Chapter 3: 'Greening' of Existing Jobs

*"Delivering environmental outcomes that create or safeguard jobs".*

'Greening' of existing jobs can happen as a result of changes to an organisation's management methods, product, service, process or premises. This can have the direct benefits of increased profit margins, increased competitiveness and compliance with environmental regulations. Less direct benefits have also been noted in improving businesses' reputation, staff retention and particularly contributing to future proofing against the changing climate conditions or future legislative requirements.

The case studies below gives an example of 'greening'.

## Case Studies

**Kingspan Insulated Panels** manufactures a range of insulated roofing and cladding panels systems – some of the highest performing and long lasting energy efficient construction products on the market, which keep the amount of energy needed for heating a building over its lifetime to a minimum. Kingspan runs highly efficient and clean manufacturing processes – its Welsh plant is certified to Environmental Management Standard ISO 14001. There are several new initiatives to reduce any impact on the environment, for example, a met mast has been installed at its Welsh plant to measure wind speed as well as a bird migrating survey completed with the aim of installing a large scale wind turbine on site to generate electricity for the whole site. The intention is that in time all Kingspan plants will be run from renewable energy.

The Kingspan energi™ centre in Wales uses a small wind turbine, solar panels, photovoltaic and a water recycling system and is in itself a highly energy efficient building. Plastic, cardboard and steel waste from manufacturing operations is all recycled. A new scheme has just been launched with RJ Jones to allow a Pallet Returns Service, which fits with Kingspan's environmental policy of reduce, reuse and recycle.

**Corus Strip Products UK, (CSP UK)** has invested £60 million into energy management technology at its Port Talbot steelworks.

The investment will materially reduce carbon dioxide emissions at the site through the reuse of gas generated inside the Basic Oxygen Steel (BOS) plant.

Reducing the cost of energy has been identified as an important priority for the company to meet its challenge to compete on the global stage, and work on the project has already commenced.

The investment is the site's largest since Corus' acquisition by Tata Steel in April last year. The investment is expected to play a significant part in creating a sustainable steel industry in Wales. Port Talbot steelworks' current demand for energy is about 140 Megawatts (MW), about half of which is internally generated. Corus already recovers process gas produced in the steelworks' coke ovens and the blast furnaces. This gas is used to generate heat and power, which contributes to the energy requirement for the whole plant. Reducing the steelworks' external energy requirements makes a significant contribution to reducing the future energy requirement for Wales.

### **3.1 How greening contributes to business outcomes:**

Organisations are subject to increasing costs as a result of scarcity of key resources such as fossil fuels, metals and other materials. Security of energy and water supply is a prime concern for many organisations, not only because of resource scarcity but also because of threats posed by the changing climate and increasing dependence on overseas sources of supply. Increasingly stringent regulation and legislation are further driving organisations to take account of the environmental and social impacts of their everyday activities.

Organisations can reduce their everyday outgoings by maximising the efficiency of energy and resource use at the workplace and taking into account the way that people interact with their working environment, This will make them more competitive, and also help to ‘future proof’ them against the impacts of climate change or rising energy costs. Both of these outcomes could result in new or safeguarded jobs for the Welsh economy.

### **3.2 Our Intentions**

We aim to provide a coherent and coordinated infrastructure for businesses in Wales that will include advice and support to be more resource efficient and able to cope with the challenges posed by resource scarcity and climate change.

We propose to use our influence to encourage businesses, both large and small, to improve and maximise their resource efficiency and continue to improve their environmental performance year on year.

We are already working, through the Green Compass pilot scheme, to develop a framework for recognising and promoting waste management companies that process Construction and Demolition waste to a high degree of recycling and re-use.

### **3.3 Proposed actions for the strategy**

The Welsh Assembly Government aims to assist organisations by ensuring advice and assistance is available, enabling them to understand the drivers for increased resource efficiency in their day to day business practices and helping them to maximise the efficiencies in the production of goods or services.

Our ability to achieve the impacts we aspire to with businesses will depend on the nature of our relationships with them. Our most direct influence is linked to the way we provide support to businesses, including working in joint ventures. It is also in the way we buy goods and services. We can use softer levers such as information, persuasion and working with networks where we do not have these direct relationships. Networks take a variety of forms, such as business representative organisations, trade associations, professional institutions, chambers of commerce, etc.

We seek your views on what other approaches we could use to reach as wide an audience as possible. We have identified a number of actions:

- Businesses Fit for the Future
- Products Fit for the Future
- Buildings Fit for the Future

These are discussed in more detail below. There is an opportunity (see page 28) to give your opinion on whether this course of action will enable organisations in Wales to overcome the existing barriers to greening their operations products and premises.

### **Action A: Businesses Fit for the Future**

We have recently reviewed and restructured our overall approach to the way we provide support to businesses in Wales – “Flexible Support for Businesses (FS4B)”.

At the same time, we have reviewed the previous Business Environment Action Plan, and we have received recommendations from the Expert Panel on Resources Management. In the light of this, we propose that support for the “Greening” of businesses will form an integral component of FS4B, and be delivered by a specialist dedicated team working alongside our business advisers and relationship managers.

Our aim is that all the businesses we support and advise will also receive advice on operating in an increasingly carbon-constrained world and the challenges that will pose. We will do this through specialised diagnostic tools that will identify the needs and potential for improvement, and then ensure a link to an appropriate source of advice and support.

We will reach out to the wider audience of businesses, organisations and householders by continuing to support specialist providers including the Carbon Trust, Energy Savings Trust, Envirowise, the Waste & Resources Action Programme (WRAP) and Constructing Excellence Wales. We also propose to work to ensure that businesses and organisations have access to the leadership and management skills that will be critical to success.

### **Action B: Products Fit for the Future**

Individual sectors have the potential to develop the innovative products and services suitable for the future, and will need tailored specialist support.

Our strategy will include a proposal that our strategy and delivery teams will identify where the principles of eco-design, lean manufacture and life-cycle analysis could be used to benefit enterprises, and assist them in getting the correct advice. Design solutions and technology will be needed to ensure that they will remain competitive into the future. At the same time, this approach will open up new business opportunities in the development and provision of the specialist services and technologies required. Work is already in hand on a pilot Eco-Design project.

Emphasis on this topic will be incorporated into our work with sectors as shown in the table on page 14.

### **Action C: Buildings Fit for the Future**

The cost of fitting out and operating business premises can represent a significant percentage of an organisation’s outgoings. The way that premises are used can also have a proportional effect on the level of emissions or pollution that an organisation is responsible for.

Standards have been agreed for new public sector buildings and new buildings developed by the private sector as a result of Welsh Assembly Government finance or sale of land for development. Proposed changes to the planning system and building regulations will have an impact on standards for new buildings in the private sector.

However, new buildings represent a small percentage of all premises used by businesses and organisations in Wales. We will shortly be consulting separately on a National Energy Efficiency and Savings Plan for Wales, which will focus on saving energy and reducing emissions in the existing building stock.

By working together, the public sector, construction sector and building users can overcome barriers previously perceived in building and operating sustainable sites and premises. This would result in lower operating costs and a healthier working and living environment, as well as contributing to new green jobs associated with sustainable construction and building management.

As well as working on the procurement and maintenance of our own buildings, we want to demonstrate the cost savings and other benefits of the low carbon approach where we have an influence over the way major sites are prepared for regeneration. Using masterplanning techniques we want to drive forward the wider sustainability agenda, with a particular focus on low carbon, exploring the technology that will be required, overcoming the barriers, and preparing the construction and development sector to adapt in advance of changes in the regulatory framework.

### 3.4 Measurement and targets

We will measure progress through the environmental outcomes achieved, as well as the economic benefits such as jobs created or safeguarded.



**Question 6.** Do you believe that the actions proposed above will lead to a coherent network of support for organisations intending to future proof their operations, products, services or premises?      Yes / No

**Question 7.** Please list any areas or gaps that you are aware of in the existing direct support to organisations that the above actions do not address.

**Question 8.** Please list the networks (such as professional or trade bodies, business clubs etc) that you or your organisation are a member of. Please mark those that you believe could be used to reach a wider audience with advice or support on future proofing.

# Chapter 4: New Green Jobs

*“Creating new jobs that deliver environmental outcomes”.*

New jobs will come about as employers take the opportunity to grow and meet the demands of the future. We want to encourage this and assist organisations to take advantage of these new opportunities in Wales.

The case studies below give examples of ‘New Green Jobs’.

## Case Studies

**Sharp**, one of the world’s leading electronics manufacturers, opened its Manufacturing Company of the UK in Wrexham, North Wales in 1984, and by 2004 the decision was made to establish the production of the company’s solar modules for the European market at the plant. Today, the factory is working 24 hours a day, with 2000 modules being shipped each day. To date, £21 million has been invested in production capacity at Wrexham, allowing use of state-of-the-art production equipment, and the site employs more than 500 people

Sharp has established local working partnerships with Government agencies, Higher Education Institutes and sector specialists to provide technical expertise, skills training and environmental sector knowledge. In addition they have worked to reduce their own environmental impact including significant reductions in energy, waste and packaging.

From its plant in Wales, Sharp serves the whole of Europe, with the UK only accounting for 5% of its sales. The strategic location allows the plant to serve these markets, with excellent transport links throughout the UK and beyond. The strong optoelectronics industry in North Wales has aided the company in being able to capitalise upon the huge growth in demand for solar technology products, and ultimately win a major share of the European market.

**TyreGenics**, a pioneering £4 million recycling facility – the first of its kind in northern Europe – was launched in Wales just over a year ago. TyreGenics is a joint venture between majority shareholder Credential Environmental, the UK market leader in recycling used tyres, industrial gases expert BOC, world-leading Canadian-based artificial sports pitch business FieldTurf Tarkett, and Canadian cryogenic plant manufacturer RTI Cryogenics Inc. This groundbreaking collaboration was backed by a grant from the Wales European Funding Office.

The state-of-the-art plant reprocesses some four million used tyres each year, handling 80 tonnes of tyres a day, making Wales a leader in automotive recycling initiatives. The innovative process uses a liquid nitrogen by-product to freeze shreds of tyre to below -80°C, at which point they become brittle, then mechanical ‘hammers’ smash the rubber into tiny pieces known as ‘crumb’. The product has a number of uses, including the production of artificial sports pitches, insulation products and rubber flooring.

The plant is not only the most advanced in the world but also puts Wales at the forefront of this type of environmental technology, creating up to 30 new jobs in the process.

#### 4.1 What 'New Green Jobs' will achieve for businesses:

The growth of the 'green' technology and services sectors, sometimes called 'environmental goods and services' or 'sustainable technologies' has been rapid over the past five years; the sector is already estimated at 9% of Welsh GVA and is one of the fastest growing areas for financial investment in the City of London.

Making choices to tackle climate change has the opportunity to develop new areas of wealth creation; the global market in environmental industries was estimated to be €1,000 billion in 2005 and could reach €2,200 billion in 2020. Welsh employers have a real opportunity to supply goods and services to the growing global market in this area, especially as environment related activities already amount to 15% of the total value of Welsh goods and services.

Encouraging and facilitating 'greening' as outlined in chapter 3, together with other pressures such as effective regulation and public sector procurement will further stimulate the demand for new products, systems or services. This in turn will lead to new business and job opportunities. The challenge will be to support the capture and development of these new business opportunities for Wales.

#### 4.2 Our Intentions

Where the first theme is intended to improve the efficiencies of existing organisations, this theme contributes to a wider economic vision where knowledge and new technologies are produced in Wales, supporting our own needs and also meeting the needs of a global market.

It is our aim that an increasing number of the new jobs created in Wales will be 'green'. This means that we want to see more people employed in Wales creating products or processes, or providing services that have much lower environmental impacts. This new employment may come about through many means; particularly through the start up and growth of new companies in the green sectors, and through existing businesses diversifying into new green products or services.

We want to create a simple approach to helping employers to create "New Green Jobs", and propose to support and grow key supply areas. Our approach will be two fold:

- **Economic Sectors.** Ministers have decided that a sectoral approach will encourage long term sustainable growth. As well as encouraging businesses in these sectors to green their operations and their core products, as outlined in chapter 2, we will also help them to explore the potential to diversify into producing the new greener goods and services that a low carbon low waste economy will require.
- **Sustainable Technologies and Services.** We have done much to support and encourage businesses working in these sectors. We propose to continue to work with existing and new businesses to consolidate their progress and to capture new opportunities to meet demand within Wales and in the global market. The list below gives an indication of the likely scope of topics that could be included in the strategy.

Economic Sectors	Sustainable Technologies and services
ICT	Renewable Energy technology and production
Bioscience	Environmental Management and Monitoring
Health	Energy efficiency and management
Financial services/products and professional services	Waste management
Creative industries	Water management
Automotive	Land remediation and regeneration, air quality, etc
Aerospace	Landscape, wildlife and biodiversity management
Construction	Lifecycle assessment and design
Food	Clean Technologies and Processes
Defence	Niche areas such as marine science and noise
Retail	
Leisure and tourism	

### 4.3 Proposed actions in the strategy

We propose that our support is structured around the following stages of business growth:

- Identifying markets and drivers
- Supporting diversification or new business set up
- Innovation and commercialisation (R&D)
- Accessing a skilled workforce
- Supply chains and networks

These are discussed in more detail below. There is an opportunity below (see page 30) to give your opinion on whether this course of action will enable organisations in Wales to capture opportunities for new green jobs.

#### Action D: Identifying markets and drivers

In developing and implementing the Green Jobs Strategy, correctly identifying and supporting these growth markets will be of prime importance; we intend, as a result of the strategy, to be well informed and proactive in supporting the growth of New Green Jobs.

The Welsh Assembly Government has a significant influence on Welsh markets through both our policy making and our procurement. We already collect and collate a level of forward market intelligence in Wales for use in our policy making. The Green Jobs Strategy will be informed by this market intelligence. It will also incorporate an action to work with businesses to develop effective methods for communicating market intelligence to maximise the potential for supply to that market.

### **Action E: Supporting diversification or new business set up**

We propose to ensure that within FS4B (see Action A page 10) a coherent network of specialist support is in place to encourage entrepreneurship and successful business start up and growth.

The specialist support provided through FS4B, including Technology and Innovation advisors and the specialist support provided to members of the Technium Network, will be key in delivering this action.

### **Action F: Innovation and commercialisation (R&D)**

Research, development and subsequent commercialisation, to increase Wales' market share of low carbon products and processes is considered to be a priority by the Welsh Assembly Government. The Science Strategy for Wales proposed the formation of a Low Carbon Research Institute which has since been created through partnership between the largest research-led Universities in Wales. This collaborative university project looks to research into, and develop future technologies, as well as test and demonstrate them in preparation for commercialisation. We have also funded the Wales Waste and Resources Research Centre with a specific remit to provide solutions to business needs.

The strategy will focus on how research undertaken by universities, institutes such as IBERS, and other organisations, can be assisted, developed, and taken to market, both through collaborative partnerships and through financial packages. These mechanisms are likely to include existing projects such as our Technium network and innovation spin-out programmes. Such projects could be potentially relevant for convergence funding.

### **Action G: Accessing a skilled workforce**

We believe that assisting organisations through adequate training and education of the potential workforce will be a key step in motivating and enabling change. Leadership and management skills will be very important to both the Greening and New Green Jobs themes of the strategy.

We propose that the Green Jobs strategy will identify how skills will be provided for the development, maintenance, installation and manufacture of sustainable technologies. The areas where we intend skills to be improved will be identified during the market research activities that we have proposed in Action D.

### **Action H: Supply chains and Networks**

It is our intention that the strategy will include a section on the use of supply chains and networks to influence the stimulation and capture of new Green Jobs in Wales. Cluster type activity, such as the Green Energy Cluster, and the Wales Opto-electronics Cluster, has been successful in this regard previously. We seek views on whether this method could be used to reach organisations effectively in promoting the opportunities for New Green Jobs in Wales, as well as networking and experience sharing by Welsh organisations.

## **4.4 Measurement and targets**

We will use the outcomes of our activities to measure our performance. This will include measuring jobs created in key sustainable technologies sectors, and new products, R&D and market development as a result of activities undertaken or facilitated by our business support teams.



**Question 9.** Do you believe that the actions proposed above will help to stimulate the creation of New Green Jobs in Wales? Yes / No

Please state why.

**Question 10.** What forms of market intelligence do you think that businesses will need in order to identify the new opportunities in a low carbon economy?

**Question 11.** What additional help do you believe that businesses need in order to increase the number of new Green Jobs in Wales?

**Question 12.** Do you think that schools, colleges and/or Universities in Wales will need to provide additional training or skills in order to support the anticipated increase in Green Jobs? Yes / No

If yes, please list any key skills or training provision that you believe to be missing.

**Question 13.** We believe that we will be able to influence the creation of New Green Jobs in Wales by working with organisations through their supply chains and networks. Do you agree? Yes / No

Please state why.

**Question 14.** Please use this opportunity to state the three most important issues that you would like to see addressed or given higher priority in the proposed Green Jobs Strategy.

# Chapter 5: How to Respond to this Consultation

Your views on the proposals we describe in the document will be extremely important to us, and will guide us in deciding how the strategy is to be structured and targeted.

We look forward to receiving responses from anyone with an interest in this area, particularly organisations such as small, medium and large enterprises, business representative organisations, community or voluntary groups, corporate social enterprises, community interest companies and public sector organisations.

We have published this consultation section on the web at the Business and Economy section of:

**[www.wales.gov.uk/consultation](http://www.wales.gov.uk/consultation)**

In order to reduce the amount of paper used in this consultation exercise, please submit a response electronically wherever possible by completing and emailing the Word version of the consultation document to:

**[business&environment@wales.gsi.gov.uk](mailto:business&environment@wales.gsi.gov.uk)**

Alternatively, you can post your response to:

Sustainable Business Team  
Department for Economy and Transport  
Welsh Assembly Government  
Plas Glyndŵr  
Kingsway  
Cardiff  
CF10 3AH

A pro-forma for the submission of responses is at pages 27-32 and **responses should be received by 20th February 2009.**

Please contact the team on **029 2036 8004** or **[business&environment@wales.gsi.gov.uk](mailto:business&environment@wales.gsi.gov.uk)** if you have any enquiries.

**Confidentiality** – the Welsh Assembly Government plans to publish the responses of the consultation document. Normally the name and address (or part of the address) of its author are published along with the response. If you wish for any part of your response to, or your name and address, to remain confidential, please state this clearly in writing to us.

Please note that any confidentiality disclaimer generated by your IT system in email responses will not be treated as such a request.

Additional copies and further information are available from the contact details above.

# Appendix A: Evidence, Context and Issues

## 1 Climate change, environmental justice and resource scarcity

The latest calculation of Wales' ecological footprint shows that it is 5.16 global hectares (gha) per person against a global availability of 1.88 gha/person. In other words if everyone on the earth lived as we do, we would need almost another 2 planets to sustain this level of resource use. Unchecked, Wales' footprint could rise to 6.19 gha/person by 2020, an increase of 20%. The case for reducing Wales' ecological footprint is therefore urgent and compelling, and the latest report (Wales' Ecological Footprint – Scenarios to 2020, published report to WAG, 2008 ) shows that actions in our One Wales programme for Government have the potential to stabilise the footprint in the 3 key areas of food, housing and transport.

We have the following headline indicators of sustainable development in Wales which collectively are intended to give a high level measure of progress – these headline indicators emphasise the interaction between the economy, our environment and our social progress:

- Economic progress: Gross Value Added (GVA) and GVA/person
- Social Progress: % of population living in low-income households
- Environment progress: progress in Wales Biodiversity Action Plan species and habitats
- Global resource use: Wales' ecological footprint.

Climate change is a real and immediate threat. New data suggests that we must minimise our carbon emissions as soon as possible if we are to prevent permanent negative impacts to our way of life in years to come (IPCC, 2007). Even if we do this, climate change isn't the only threat. Finite resources such as fossil fuels, metal ore, silicon and even water are increasingly scarce, and areas of our environment are easily polluted by industrial activity without proper control. Biodiversity has been decreasing since the industrial revolution, threatening many basic natural services for our population, such as fresh water, fertile soil and clean air.

Environmental decline often goes hand in hand with social deprivation, and we want to achieve better environmental and economic conditions for our less well off communities.

All of these threats need to be considered and responded to if our economy is to survive into the future, but greater than that, mitigating and adapting to climate change and environmental harm will have direct positive consequences on quality of life in all sectors of society, especially children and older people, who are often the most vulnerable to environmental change or economic downturn. The Welsh Assembly Government already has key strategies and plans in place to deal with some of these impacts, including the Climate Change adaptation plan and the Rural Development plan. We will specifically consider the economic impacts and opportunities, not dealt with elsewhere, in the final strategy. We recognise that there's a need for waste and energy infrastructure to be in place for this to be effective, this will be delivered by other strategies and plans, for instance, the Wales Waste Strategy or the Renewable Energy route map.

Many organisations are keen to improve their performance; however they are unable to individually impact on some aspects, where the infrastructure for change is not available to them. These may include aspects of reuse and recycling of waste, availability of renewable energy, or the management and development of the wider environment.

It is our intention that the strategy will include elements of infrastructure provision to enable organisations to overcome the often overlooked barrier of availability of renewable energy or sustainable waste management.

## **2 Potential for economic growth and the need for future proofing**

The threats to the environment represent not only a challenge but also an opportunity.

There is a great deal of evidence now building up, from work that has been happening across Europe, as well as case studies from businesses in the UK, that 'greening' businesses makes good economic sense. Reducing resource requirement has direct impact on profit margins. Improving the public image of a company by taking responsibility for its impacts on the environment and people has a direct impact on its competitiveness, particularly in the light of publicity about the impacts of climate change, pollution, poverty and injustice.

In fact, the Welsh Assembly Government's own Ministerial Advisory Group has recommended Environmental Management and Energy as two of the three enabling core sectors for business in Wales.

The potentially massive impact of resource scarcity and security of supply has been seen most recently in the rising costs of all areas of living as a result of the increasing costs of oil. Fossil fuels are currently used in all areas of our lives, from familiar oil based products such as fuels, plastics and construction materials through to clothing, food and food additives, even medicines. The impact that rising costs of these has on the production and manufacture of almost all products, from food to computer software is highly significant, and the costs are unlikely to go down. Alongside these acute concerns, are the realities that our landfill sites are nearing capacity, and the natural resources that we relied on so heavily in the past are being rapidly depleted.

Much of our rural economy is based on agriculture, forestry, tourism and environmental management. Supporting Green Jobs in these areas will have much wider reaching consequences, not least in preserving our environment as an economic asset, contributing to improve average rural wages and supporting rural communities where Welsh is still widely spoken as the first language. In doing this we will link with the Rural Development Plan for Wales 2007 – 2013 and Welsh Language strategy, as well as linking with existing programmes supporting agriculture and forestry.

As well as those areas where 'green jobs' are classically seen to be – energy, waste and water, other sectors will be able to benefit from support and assistance. For instance we believe that greening the key areas where Wales' economy is already predicted to grow, such as information technology, aerospace and life sciences, will make those growth sectors better able to compete in a global context. The full list of these growth sectors is included on page 14.

### 3 Welsh and International Policy context, areas of influence and One Wales

The new EU Sustainable Development Strategy, adopted at the European Council meeting on 15 and 16 June 2006, identified sustainable modes of consumption and production as one of the major focuses of sustainable development. The EU Sustainable Consumption and Production and Sustainable Industrial Policy Action Plan which is currently being developed will focus on a range of measures, including a review of the factors that may encourage the development of the EU's environmental industries. Innovation, public procurement, and a strong "products" focus are proposed, emphasising the opportunities for industry of a shift to a low carbon economy.

Regulation can drive and open up opportunities for new jobs and expanded markets. We want to capture these for Wales, but we are also aware of the opportunities to achieve and deliver other strategies as well.

Not only will Green Jobs help deliver some of the actions outlined in the sustainable development scheme, but they will also contribute to existing and new strategy and policy targets for energy, water and materials use, the diversion of waste from landfill, and materials substitution. The economic and environmental outcomes of the strategy are intended to also drive improvements in well-being and quality of life that have wider social implications. We will integrate our work with programmes relating to social impacts, including Want2work, and rural programmes such as Axes 3 and 4 of the Rural Development Plan for Wales 2007 – 2013.

The targets set by Government, particularly the Welsh Assembly Government's 3% year on year target for carbon reduction, will have an indirect impact on business through our procurement processes – acting as a stimulus to business to improve their own energy efficiency, to realise the competitiveness benefits that will result, and to seize the new "Green Jobs" opportunities. Assisting companies to deliver Green Jobs, as well as incorporating the concept of Green Jobs into our own organisation will contribute to the wider vision we have for Wales.

We aim to stabilise and then reduce our ecological footprint so that Wales will only use our fair share of the earth's finite resources, a just society that improves the lives of our less well off communities, and we will pursue this in an integrated way through a sustainable, innovative and productive economy.

The Department for Environment, Sustainability and Housing already delivers many potentially synergistic plans and programmes, including those relating to renewable energy, energy efficiency and savings, fuel poverty, climate change, planning and sustainable development.

The new Wales Spatial Plan Update 2008 will be formally launched in Autumn 2008. This document is now in line with *One Wales* and in the context of the proposed Green Jobs Strategy, as well as other strategies or plans; it will present the roles of and interactions between places. The proposed Green Jobs Strategy will integrate with the updated plan to ensure that decisions are taken with a regard to their spatial impact beyond administrative boundaries. The work in progress on Low Carbon Regions will be particularly relevant in giving a spatial context to the Green Jobs Strategy.

As stated in our National Housing Strategy – the design and construction of housing has a large part to play in achieving a sustainable economy and in this context it relates directly to Green Jobs. The 2006 update of the associated action plan further reinforced this message by stating that the investment in new housing, refurbishment and maintenance provides opportunities for social and economic benefits to the local community and economy. It identified targets for

energy use and the promotion of microgeneration and renewable energy technologies, as well as innovative design for sustainability. In this way, the construction sector is both a candidate for 'greening', but also delivers opportunities for 'new Green Jobs' in the areas of design and renewable energy. This is reinforced by other policies within the Welsh Assembly Government to build to high standards of energy efficiency and using resource efficient construction methods, as well as methods which mean that carbon emissions during use remain low.

In both the areas of new green jobs and greening of existing jobs, the availability of suitable skills is a key concern. The Welsh Assembly Government's vision for a society which is actively engaged in acquiring new knowledge and skills will be fundamental to delivering the kind of skills and understanding required to mainstream environmental concerns into Welsh organisations.

Another area of Welsh Assembly Government policy which overlaps both Greening and New Green Jobs is planning. In the Greening theme, the planning system can, for example, help to promote the take up of green products such as microgeneration products or changes to existing business premises – thereby reducing the barrier to business reducing their own carbon emissions. In influencing organisations in this way, they can indirectly cause the creation of New Green Jobs. For instance – new building standards will require changes to the construction sector and the products and services that they use – leading to new markets and new jobs.

### **Equality and Human Rights**

The Government of Wales Act 2006 places a legal duty on the Welsh Assembly Government to promote equality for all people in the exercise of its functions. In addition to this, the Welsh Assembly Government has a statutory duty to promote equality and prevent discrimination and harassment on the basis of race, disability and gender. The Welsh Assembly Government's Single Equality Scheme aims to build on these duties and signals its intention to extend the equality and human rights agenda by also promoting equality on the basis of age, religion or belief and sexual orientation. The scheme will seek to raise awareness of human rights and its core principals across the organisation.

In enabling Green Jobs and advising organisations on their performance, any implementation of the proposed Green Jobs Strategy will take the scheme in account.

The Welsh Assembly Government is also committed to fair trade, which we consider to be a first step towards promoting equity through our own procurement and management decisions.

# Appendix B:

## Bibliography

*A Strategy to Improve the Resource Efficiency of Organisations in Wales (EPRM)*. University of Wales Swansea; Technium Sustainable Technologies; The Expert Panel on Resources Management. 2006.

*A Winning Wales – The National Economic Development Strategy of the Welsh Assembly Government*. Welsh Assembly Government. 2002.

*Better Homes for People in Wales – A National Housing Strategy for Wales*. Welsh Assembly Government. 2001.

*Better Homes for People in Wales – A National Housing Strategy for Wales, Action Plan*. Welsh Assembly Government. 2006.

*Building a Low Carbon Economy: Unlocking Innovation and Skills*. DEFRA, HM Government. 2008

*Business and Environment Action Plan for Wales*. Welsh Assembly Government. 2003.

*Business and Environment Action Plan for Wales: First Annual Report 2003-2004*. Welsh Assembly Government. 2004.

*Business and Environment Action Plan for Wales: Third Annual Report 2005-2006*. Welsh Assembly Government. 2006.

*Climate Change 2007: The Fourth IPCC Assessment Report*. Intergovernmental Panel on Climate Change (IPCC). 2007.

*Climate change adaptation for UK businesses – A Report for the CBI Task Force on Climate Change*. Met Office. 2007.

*Climate Change: Everyone's Business*. CBI Climate Change task Force. 2007.

*Commission on Environmental Markets and Economic Performance (CEMEP)*. Department for Business, Enterprise and Regulatory Reform (BERR); Department for Environment, Food and Rural Affairs (DEFRA); Department for Innovation, Universities and Skills. 2007.

*Communities First Guidance*. Welsh Assembly Government. 2007.

*Comparative Advantage and Green Business*. Ernst & Young; published by BERR (Department for Business, Enterprise and Regulatory Reform). 2008.

*Delivering a Low Carbon Economy – Business Opportunities for UK Manufacturers*. EEF. 2008.

*Eighth Annual Report on work to Promote Equality and Diversity for 2006-2007*. Welsh Assembly Government. 2007.

*Environment Strategy for Wales*. Welsh Assembly Government. 2006.

*Environmental Goods and Services: Innovation and R&TD (EGSI) – Final report, Jan-March 2008.* Environmental Goods and Services: Innovation and R&TD (EGSI). 2008.

*Going for Green Growth: A Green Jobs Strategy for Scotland.* Scottish Executive. 2005.

*Green Jobs Strategy Review – Scottish Executive Social Research.* Scottish Executive. 2004.

*Green Jobs, Towards Decent Work in a Sustainable, Low Carbon World.* United Nations Environment Programme. 2008.

*Iaith Pawb – A National Action Plan for a Bilingual Wales.* Welsh Assembly Government. 2003.

*Learning to Work Differently – Sustainable Development Action Plan.* Welsh Development Agency. 2001.

*Low Carbon Wales – To improve Resource Efficiency in Wales.* The Expert Panel on Resources Management for Wales, Welsh Assembly Government. 2007.

*Mainstreaming Equality – A Strategy by the Welsh Assembly Government.* Welsh Assembly Government. 2005.

*NetRegs surveys (2002, 2007).* NetRegs. 2002.

*One Future – Different Paths; The UK's shared framework for sustainable development.* DEFRA. 2005.

*One Wales – A progressive Agenda for the Government of Wales.* Welsh Assembly Government. 2007.

*One Wales: Connecting the Nation – The Wales Transport Strategy.* Welsh Assembly Government. 2008.

*Our Environment, Our Future, Your Views – Consultation on the Environment Strategy for Wales.* Welsh Assembly Government. 2005.

*People, Places, Futures – The Wales Spatial Plan.* Welsh Assembly Government. 2004.

*People, Places, Futures – The Wales Spatial Plan Update.* Welsh Assembly Government. 2008.

*Prime Minister's Speech to CBI Scotland 28th Annual Dinner – 5.09.2008.* [www.number10.gov.uk](http://www.number10.gov.uk). 2008.

*Recommendations on the Future Development of the EGS Programme in Wales.* Quantum Strategy and Technology, prepared for the Welsh Assembly Government. 2007.

*Reducing Carbon Emissions: The Assembly Government's Operations (2007) SDSP(06-07)19.* Cabinet Sub Committee on Sustainable Development and Spatial Plan – Welsh Assembly Government. 2007.

*Responding to our Changing Climate – A Consultation on a Climate Change Adaptation Action Plan for Wales.* Welsh Assembly Government. 2007.

*Rural Development Plan for Wales 2007-2013.* Welsh Assembly Government. 2008.

*Science and Technology Committee – Waste reduction Volume1: Report.* House of Lords. 2008.

*Securing the Future – UK Government Sustainable Development Strategy.* UK Government. 2005.

*Skills that Work for Wales – A Skills and Employment Strategy, Consultation.* Welsh Assembly Government. 2008.

*Social Enterprise Strategy for Wales.* Welsh Assembly Government. 2005.

*Social Justice Report.* Welsh Assembly Government. 2006.

*Starting to Live Differently – Sustainable Development Strategy for Wales.* Welsh Assembly Government. 2004.

*Stern Review on the Economics of Climate Change.* Stern. The Office of Climate Change. 2006.

*Supporting Innovation in Services.* Department for Business, Enterprise and Regulatory Reform; Department for Innovation, Universities and Skills. 2008.

*Sustainable Development Action Plan for Wales 2004-2007.* Welsh Assembly Government. 2004.

*Sustainable Wealth Creation within Environmental Limits.* Forum for the Future – Chambers, Porritt, Price-Thomas. 2008.

*The Expert Panel on Resources Management for Wales – First annual report.* The Expert Panel on Resources Management for Wales, Welsh Assembly Government. 2005.

*This is Sustainable Technologies Wales.* International Business Wales. 2007.

*Towards a Green Jobs Strategy: Opportunities for Business – A consultation.* Scottish Executive. 2004.

*Towards a Green Jobs Strategy: Opportunities for Business – Consultation Response.* Sustainable Development Commission. 2004.

*UK Aims for a Million Green Collar Workers – article 8.5.2008.* Edie (Environmental Data Interactive Exchange). 2008.

*United Nations Environment Programme Background Paper on Green Jobs.* United Nations Environment Programme. 2008.

*Valuing our Environment Partnership – Conference Paper.* Valuing our Environment. 2007.

*Valuing our Environment: The Economic Impact of the Environment of Wales.* Valuing our Environment. 2003.

*Valuing the Environment of Wales: A Review 2001-2006.* Valuing our Environment. 2006.

*Wales: A Vibrant Economy – The Welsh Assembly Government's Strategic Framework for Economic Development, Consultation document.* Welsh Assembly Government. 2006.

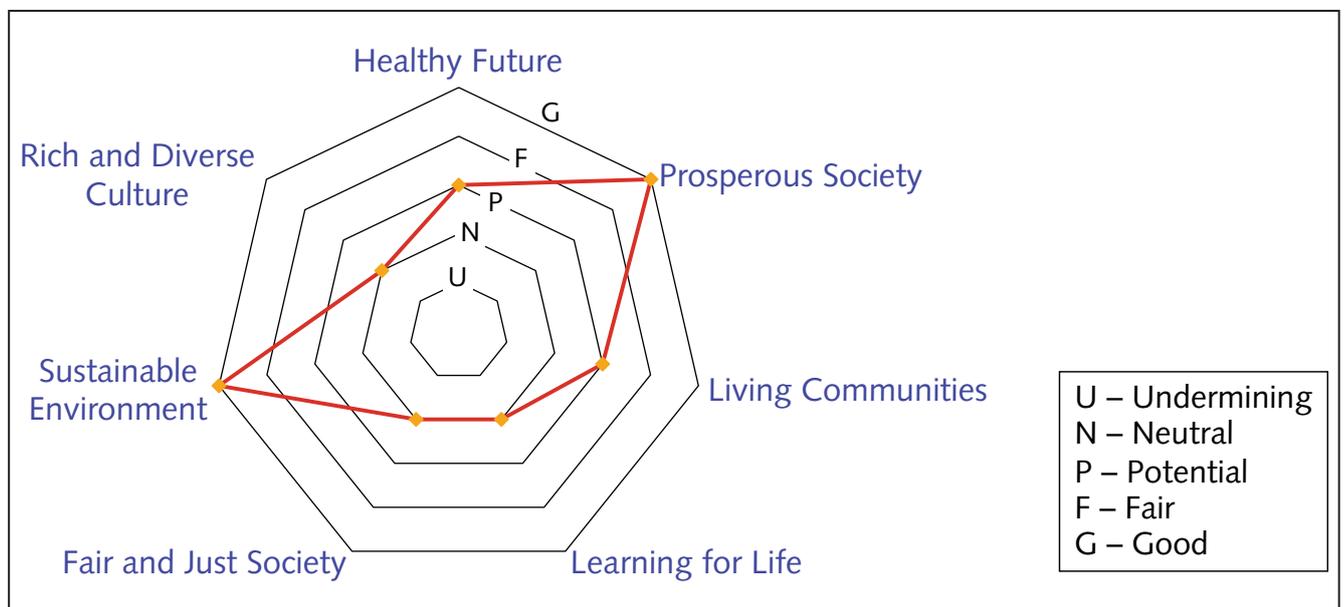
*Wales' Ecological Footprint – Scenarios to 2020.* Stockholm Environment Institute – Dawkins, Paul, Barrett, Minx, Scott. 2008.

# Appendix C: Policy Gateway Summary

The following is a summary of the process undertaken to ensure compliance with statutory obligations. It also brings people representing different areas of the Welsh Assembly Government together.

## One Wales Policy Gateway Tool – Summary Sheet

Overall, the proposals will have a stronger effect on ‘A Prosperous Society’ and ‘A Sustainable Environment’ than other areas. However, there were areas within Learning for Life where the proposals would provide direct or significant contribution towards raising skills levels and retaining talent to meet the requirements of a green/low carbon economy. Stronger links required to develop these areas in particular. No undermining aspects were identified within any categories of One Wales.



## Summary Comments:

1. **A Healthy Future (P):** the proposals touch tangentially on health issues and has the potential to provide a positive contribution through linking with Healthy Wales. A significant contribution could be made towards creating social and physical environments that encourage and support health and well being.
2. **A Prosperous Society (G):** the proposals will provide a substantial contribution to a strong and enterprising economy. Positive contributions to be made in particular towards developing a dynamic and enterprising economy, promoting innovation and creating new, greener jobs. Also contribute towards supporting social or community businesses. The spatial dimension to the issue needs to be examined and reflected in the final strategy.

3. **Living Communities (P)**: has the potential to contribute to economic, housing and environmental issues, particularly the National Housing Strategy. Fuel poverty could be potentially addressed through the design and technology of more sustainable housing.
4. **Learning for Life (N)**: neutral ratings agreed for areas such as life-long learning responding to the needs of children and young people but 'fair' ratings agreed for skills issues and attracting and retaining talent. Links could be strengthened through liaison with the Sector Skills Councils.
5. **A Fair and Just Society (N)**: an overall 'neutral' effect. However, it has the potential to tackle equality, and poverty and poor health in deprived communities and disadvantaged people. The spatial dimension to be examined and reflected in the final strategy.
6. **A Sustainable Environment (G)**: a positive contribution is provided to this category despite a neutral effect on biodiversity and flooding aspects.
7. **A Rich and Diverse Culture (N)**: overall a neutral effect but a 'fair' rating is provided as regards expanding Wales' international profile and supporting the tourism industry.

# Proforma for Responses

**Question 1.** Do you think that our aims and commitments are clear and realistic, particularly in view of the current economic situation?

## About you

**Question 2.** Are you responding on behalf of an organisation or as an individual?

Business representative organisation	<input type="checkbox"/>	Private/commercial organisation	<input type="checkbox"/>
Social enterprise etc	<input type="checkbox"/>	Public sector	<input type="checkbox"/>
Environmental NGO	<input type="checkbox"/>	Private individual	<input type="checkbox"/>

**Question 3.** Are you currently greening your organisation? (For example, energy management, water management, environmental policy, energy efficient lighting etc)

Yes       No       If so, please list the main activities are you undertaking:



**Question 4.** Please list any environmental support organisations that you are aware of. Please mark those that you have received advice from.

**Question 5.** What action(s) (by the Welsh Assembly Government) might convince, or enable, your organisation to improve your 'green' credentials?

### Greening of existing businesses

**Question 6.** Do you believe that the actions proposed in Chapter 3 will lead to a coherent network of support for organisations intending to future-proof their operations, products, services or premises?

Yes       No

**Question 7.** Please list any areas or gaps that you are aware of in the existing direct support to organisations that the proposed actions do not address.

**Question 8.** Please list the networks (such as professional or trade bodies, business clubs etc) that you or your organisation are a member of. Please mark those that you believe could be used to reach a wider audience with advice or support on future proofing.



## New Green Jobs

**Question 9.** Do you believe that the actions proposed in Chapter 4 will help to stimulate the creation of New Green Jobs in Wales?

Yes       No       Please state why:

**Question 10.** What forms of market intelligence do you think that businesses will need in order to identify the new opportunities in a lower carbon economy?

**Question 11.** What additional help do you believe that businesses need in order to increase the number of new Green Jobs in Wales?

**Question 12.** Do you think that schools, colleges and/or Universities in Wales will need to provide additional training or skills in order to support the desired increase in Green Jobs?

Yes           No

If yes, please list any key skills or training provision that you believe to be missing.



**Question 13.** We believe that we will be able to influence the creation of New Green Jobs in Wales by working with organisations through their supply chains and networks.  
Do you agree?

Yes       No

**Question 14.** Please use this opportunity to state the three most important issues that you would like to see addressed or given higher priority in the proposed Green Jobs Strategy.