



**SUPPLEMENTAL MATERIAL FOR CHAPTER 4 OF THE 2012 OECD EMPLOYMENT
OUTLOOK (“WHAT GREEN GROWTH MEANS FOR WORKERS AND LABOUR MARKETS:
AN INITIAL ASSESSMENT”):**

SUMMARY OF COUNTRY RESPONSES TO THE OECD QUESTIONNAIRE ON GREEN JOBS

ANNEX 4.A2. OVERVIEW OF COUNTRY RESPONSES TO THE OECD GREEN JOBS QUESTIONNAIRE

This web annex supplements the discussion of the main lessons from the OECD Green Jobs Questionnaire that is included in Chapter 4 of the 2012 OECD Employment Outlook, “What Green Growth Means for Workers and Labour Markets: An Initial Assessment.” This questionnaire was sent to employment and labour ministries in OECD member governments in November of 2010 and the information provided corresponds to policies in place at that time.

1. National definitions of green jobs and initiatives to quantify green employment

1. The following two tables provide information about national definitions of green jobs (Table 4.A2.1) and past or planned initiatives to estimate green employment (Table 4.A2.2). This information is based on responses to an OECD questionnaire which was sent to labour and employment ministries.

Table 4.A2.1. National definitions of green jobs

	Allow statistical analysis	Broad description
Australia	Work in progress	While the Australian Government currently does not produce statistical estimates on the number of green jobs, the Australian Bureau of Statistics (ABS) is investigating options to develop an environmental goods and services sector account as part of its commitment to the UN's System of Environmental and Economic Accounts (SEEA) standard. A report proposing a taxonomy of green jobs for Australia, partly funded by the New South Wales Department of Environment and Climate Change, was released in 2009. The report “Who are the Green Collar Workers – Defining and identifying workers in sustainability and the environment”, proposes a Green Collar Worker Coding System based on the Australia New Zealand Standard Codes for Occupations (ANZSCO) and Australia New Zealand Standard Industry Codes (ANZSIC).
Austria	Yes	The Definition is based on the handbook on the Environmental Goods and Service Sector (EGSS) from EUROSTAT (2009). The EGSS in Austria was first published in 2009, reporting year 2008. This nomenclature differs from the standard classification of economic activities and Statistic Austria uses two different data sources for defining and counting green jobs in the frame of the EGSS: the Labour Force Survey and the “Konjunkturstatistik” 2009. The classifying schemes used in 2008 are being revised, and at the end of January 2011 Statistic Austria will publish a new 2009 edition of EGSS in Austria.
Belgium	No	There is no national definition of green jobs in Belgium. Rather, a policy oriented approach is followed. However, some studies conducted for the different governments in Belgium have included definitions (e.g. High Employment Council, IDEA/Ecorys for the Flemish Government, IDEA for the federal government).

Allow statistical analysis		Broad description
Canada	Work in progress	<p>While the Government of Canada does not currently have a formal definition of green jobs, work is underway within the Department of Human Resources and Skills Development Canada (HRSDC). The green jobs taxonomy combines both specific and standard nomenclatures in order to categorise industrial sectors and occupations that contribute to green economic activities. The two standard nomenclatures are the North American Industry Classification System (NAICS) and the Canadian National Occupational Classification (NOC). The green jobs taxonomy is organised into five broad green domains: Environmental Protection, Green Energy, Energy Efficient Construction, Green Manufacturing and Transportation, and Green Services. Each domain aggregates several green industry sectors.</p> <p>These industry sectors are based on a specific nomenclature that is then mapped to a standard industry nomenclature based on NAICS industry groupings. For each NAICS industry grouping, a selection of green occupations was identified and subsequently mapped to a standard occupational nomenclature, the Canadian NOC occupational groupings. Progress thus far on a green jobs taxonomy is based on research conducted by organisations including: Occupational Information Network (O*NET), the Bureau of Labor Statistics (BLS), the California Centre for Excellence, the United Nations Environmental Program, the Globe Foundation, the International Labour Organization, HRSDC Service Canada LMI Regional Network, Statistics Canada and ECO Canada.</p>
Chile	No	
Czech Republic	Work in progress	At the government level there is no formal definition of green jobs, but Czech Statistical Office is working on a project (in cooperation with EUROSTAT) to identify environmental goods and services sectors in the Czech Republic, and estimate the number of green jobs in these sectors (NACE classified).
Denmark	Work in progress	The Ministry of Employment is currently initiating work on a definition of green jobs (early stage of the process).
Finland	Yes	A definition of green activities, entirely derived from the standard classification of economic activity, has been adopted by Statistics Finland in 2009. Green employment refers to the number of workers employed by firms having mainly green activities (NACE 3700, 3811, 3812, 3831, 3832, 3900 plus 35111). In other words, firms having some green activities, but mainly other than green activities, are not included (on the other hand, not all employees in firms providing environmental goods and services could be classified as "green jobs").
France	Yes	No official definition, but statistical work is conducted by the ministry of Ecology and Sustainable Development so as to estimate the number of green jobs. This work is based on the OECD/Eurostat classification of environmental goods and services. It draws on the French classification of products by activity and uses several available statistical sources, such as employer surveys, trade-union registers, etc.
Germany	Yes	Definition first adopted in 1996 when the Federal Environment Agency (UBA) commissioned a study on the estimation of environment-related employment in 1994. Since then, the definition was refined several times. Green jobs refer to employees who: <i>i</i>) produce environmental goods and services (pollution management; cleaner production and technologies; resource management – see Eurostat/OECD definition, 1999); <i>ii</i>) are involved in environment related activities (<i>e.g.</i> environment consultants, planning and administration, nature and landscape conservation). Since these two categories of green jobs are overlapping, estimates have to be adjusted in order to eliminate double counting. A dual approach is followed. First, demand-oriented evaluations use data on domestic demand (<i>e.g.</i> expenditures for environmental protection) to calculate the number of jobs involved in the production of environmental goods and services, as a basis for an input-output analysis. As a result direct and indirect employment effects can be derived. Second, supply-oriented analyses estimate the number of green jobs directly. Different information sources are taken into account, including company surveys, panel surveys or association statistics. When "green activities" cover only a fraction of the total workload, the number of green jobs refers to the corresponding share of the total workforce.
Greece	No	The Employment Observatory Research-Informatics SA (EORI) conducts Business surveys so as to collect information on the occupational, educational and geographical structure of employment in private businesses of all types and sizes at the local level and to identify of skill needs. These surveys are financed by the Ministry of Employment (under the European Social Fund). The first survey was conducted in 2003, the second in 2005 and there is a plan to continue in the future at regular intervals, but decisions are pending. Provided that the project receives an approval, EORI could include special data collection in order to count the number of green jobs.

Allow statistical analysis		Broad description
Hungary	Yes	No official definition adopted by the government and designed to allow statistical analysis of green employment. However, the Hungarian Central Statistical Office (KSH) collects data that allow monitoring economic activities related to environmental protection. KSH makes a distinction between environmental expenditures (investments) and environmental sectors. Statistics based on environmental expenditures provide the total amount of environment-related investments and an estimate of the corresponding number of employees. Statistics on environmental sectors measure the production of environmental goods and services, and the corresponding employment level.
Israel	No	
Japan	Yes	Green jobs are defined as jobs involved in the production of environmental goods and services. This definition is based on the OECD/Eurostat classification and was adopted in 2000. The number of green jobs is derived from the estimated market size of green activities, with these estimated market size being derived from a specific industry survey conducted by the Ministry of environment.
Korea	Yes	Green jobs definition which refers to the jobs involved in the production of goods and services that contribute substantially to 'low carbon growth' by achieving higher energy efficiency across the board and by improving the environment was adopted in 2009. The definition is based on the existing Korea Standard Industrial Classification (KSIC) as well as the Korean Employment Classification of Occupation (KECO). In practice, Korean government has classified 64 green industries out of total 169 categories under the KECO and 101 green occupations among total 429 headings in the KECO. However, the definition is not based on a separate set of classification criteria for the sole purpose of identifying green jobs, and thereby some overlapping intersections between green industries and green occupations exist, while the green jobs calculation might include jobs that are not involved in green tasks.
Mexico	No	
Netherlands	No	
Norway	No	
Poland	No	
Portugal	Yes	The Portuguese Government has no definition of green jobs. However, since 2008, Statistics Portugal (INE) publishes annually environmental statistics that cover nine environmental areas, which are based on OECD/Eurostat (1999) and CEPA 2000 (Classification of environmental protection activities and expenditure). A specific survey is conducted, where (private and public) employers are asked to report the amount of human resources (by gender and by professional group) that work "majority of time" or "occasionally" in the nine environmental areas mentioned above.
Slovak Republic	No	
Slovenia	No	
Spain	Yes	Qualitative definition adopted in the 1990s by the Ministry of Environment. However, this definition serves as a basis for various studies (conducted, for example, by the Ministry of Labour and the Ministry of Environment) quantifying the number of green jobs in the Spanish economy. The approach consists in identifying green sectors, as defined by international organisations, such as the ILO, OECD or UNEP, within the national industry classification and the occupation classification. A specific employer survey has also been developed.
Sweden	No	
Switzerland	No	No official definition has been adopted, but work is in progress to develop a definition.
Turkey	No	

Allow statistical analysis	Broad description
United States	<p>Yes</p> <p>Definition adopted in 2010 by the US Bureau of Labor Statistics (BLS) contains two components, an output-based approach and a process-based approach. Green jobs are either: <i>i)</i> jobs in businesses that produce goods or services that benefit the environment or conserve natural resources (the Green Goods and Services or GGS measure); or <i>ii)</i> jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or less demanding of natural resources (the Green Technology and Practices or GTP measure). The GGS measure is based on the North American Industry Classification System (NAICS), which is used to identify a sub-set of industries that potentially provide green goods and services. Establishments in these industries constitute the universe for an establishment survey to measure the employment related to the production of green goods and services. The share of employment in each establishment that is classified as green is set equal to the share of green goods and services in total output for that establishment. The first GGS data were published in March 2012 and indicate that green jobs accounted for 2.4% of total employment in 2010 (see: www.bls.gov/ggs). A separate survey is being developed to implement to GTP process-based measure of green jobs. This survey will include all industries in NAICS except private households and results will be published in June 2012. The GGS survey will be repeated on an annual cycle, but the GTP survey is a one-time, special study.</p>

Notes:

Australia: The Australian Government considers a central challenge in the move to a greener economy is to make *all* jobs greener. Moving to a low-pollution, resource-efficient economy will change the way workers do things in traditional occupations and industries while simultaneously driving the creation of new jobs in existing and emerging green sectors. Workers in any and all industries will be required to learn and apply new green skills and knowledge if the economy as a whole is to use resources more efficiently and generate less pollution and waste. The Australian Government has not adopted a national definition of green jobs. Instead, the government has focused on the concept of green skills, or skills for sustainability. Australia's definition of skills for sustainability was negotiated with the states and territories as part of the national *Green Skills Agreement*, which was endorsed by the Council of Australian Governments in December 2009 (see <http://www.deewr.gov.au/Skills/Programs/WorkDevelop/ClimateChangeSustainability/Pages/GreenSkillsAgreement.aspx>). The Australian Government uses the term 'skills for sustainability' to describe the technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community.

Germany: For further details, see "Beschäftigungswirkungen des Umweltschutzes in Deutschland" – UBA-Text 26/09 – <http://www.umweltdaten.de/publikationen/fpdf-l/3846.pdf>.

Table 4.A2.2. Quantifying green employment

Number of green jobs: observed and projected	
Australia	Employment projection. The 2008 “Growing the Green Collar Economy” report (see: http://www.csiro.au/resources/GreenCollarReport) by the Australian Government’s Commonwealth Scientific and Industrial Research Organisation (CSIRO) finds that policy action to support the transition to an environmentally sustainable society could increase employment in sectors with high potential environmental impacts by 230 000 – 340 000 new jobs over the next 10 years. Similarly, the joint Australian Council of Trade Unions and Australian Conservation Foundation report “Creating Jobs – Cutting Pollution” (see: http://www.acfonline.org.au/articles/news.asp?news_id=3135) finds that Australia could create more than 770 000 extra jobs and stronger economic performance by 2030 through strong investment in clean energy, public transport and sustainable land management policies.
Austria	Number of green jobs. 162 986 in 2008. Employment projection. Research project by the Institute of Advanced Studies (HIS): “More and better Green Jobs for Austria - Green Jobs for a sustainable, low carbon Austrian Economy” (2010)
Belgium	Employment projection (Federal Planning Bureau). Scenario: 20 reduction of GHG emissions by 2020 relative to 1990 levels and 20% renewable energy in the overall energy consumption by 2020. General-equilibrium effects: small slowdown of economic growth with respect to the business-as-usual scenario; small employment effects that can be positive when revenues from this mitigation policy are used to reduce employer social security contributions.
Canada	Number of green jobs. Using the green jobs taxonomy and 2006 Census data, the Government of Canada has conducted preliminary research internally to estimate the possible size of Canada’s green workforce. Based on this research, approximately 4% (640,000 jobs) of Canada’s total labour force in 2006 may be employed in a green occupation with more than half working in the domain of environmental protection. Other green employment domains being researched include, green services, energy efficient construction, green manufacturing and transportation, and green energy. This estimate (4%) is consistent with the findings of a recent study conducted by the ECO Canada Sector Council, obtained through a separate methodology.
Chile	None.
Czech Republic	Employment projection. <i>Ex ante</i> estimates of the gross employment effect of the “Green Light for Savings” measure (a specific subsidy programme) were provided in 2009 by the Ministry of Environment. An <i>ex-post</i> evaluation will be conducted in 2011.
Denmark	None.
Finland	Number of green jobs. Statistics Finland estimates that, in 2009, 5 888 workers were employed by firms having mainly green activities. Employment projection. Evaluation of the economic impact of the <i>Renewable energy package</i> , an energy programme passed in 2010. Total costs over the period 2010-20 are estimated to amount to EUR 700 million (feed tariffs for wind energy, subsidies for wood energy and other bio-energy). Private investments are estimated to reach EUR 3.5 billion for wind plants and EUR 1 billion for bio-energy. However, the estimates of investments cannot be counted as budget costs; these estimates were used as assumptions in model simulations. As compared to BAU (business-as-usual) scenario, the package leads to slightly negative net employment effects (4 000 jobs less than BAU). Direct employment effects are positive in forestry, in construction sector and in the energy sector. Indirect positive employment effects are positive in private and public services. Direct and indirect employment effects in industry, and in sectors closely related to industry, are negative.
France	Number of green jobs. The Ministry of Ecology and Sustainable Development estimates that green jobs accounted for 1.6% of total employment in 2010. Employment projection. In 2009, a study by the Boston Consulting Group, commissioned by the Ministry of Ecology and Sustainable Development, estimates that the French Environmental Strategy (“Grenelle Environnement”) could result in 600 000 gross job creations by 2020. A report published in 2008 by the National Environmental Agency (ADEME) suggested that this policy package could create about 200 000 jobs in the renewable energy, building and transport sectors over the period 2007-2012.
Germany	Number of green jobs. The estimation of environment-related employment has a long tradition, with first estimates produced in 1994. Since then, the method has been refined and revised several times and according to recent estimates, green employment accounted for 4.5% of total employment in 2006. These results can be found in the “Report of the Environmental Economy 2009”, published by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety and the Environmental Agency. In large part, green jobs are found in renewable energy sectors and environmental related services. (See http://www.bmu.de/english/economy_innovation/downloads/doc/45261.php , Chapter 2, and for employment in renewable energy sectors, http://www.erneuerbare-energien.de/inhalt/43766/42454/)

Number of green jobs: observed and projected	
Greece	Employment projection. According to the Ministry of Environment, Energy and Climate Change, the broad Greek <i>Strategic Action Plan</i> for green growth is expected to result in the (gross direct) creation of more than 210,000 jobs (including job retention in sectors such as construction), of which 29 000 will be permanent.
Hungary	Employment projection. As part of the New Széchenyi Plan, policy measures to develop green economy are expected to create 200 000 jobs by 2020 (budget: HUF 130 billion).
Israel	None.
Japan	Information not available.
Korea	Number of green jobs. Using the Korea Standard Industrial Classification (KSIC) as well as the Korean Employment Classification of Occupation (KECO), the Korean government has estimated that there were 604 400 green jobs (approximately 2.6% of Korea's total employment) in 2008. Employment projection. Under the so-called umbrella "Green New Deal", the government expects to create 960 000 jobs, including 100 000 core green talents over the 2009-2012 fiscal years.
Mexico	None.
Netherlands	None.
Norway	Employment projection. A report, commissioned by the Ministry of the Environment and published in 2010, provides a general assessment of the consequences for the Norwegian economy of alternative future policy packages that may be implemented in order to reach the Norwegian Climate Targets by 2020. This report has been written by an expert group – Climate Cure 2020 – consisting of the Norwegian Water Resources and Energy Directorate, the Norwegian Petroleum Directorate, the Norwegian Public Roads Administration, Statistics Norway and the Climate and Pollution Agency, which has led the work. Climate Cure 2020 has carried out a sector by sector analysis of possible measures and instruments for reducing emissions and made a macroeconomic assessment of the total costs to society of achieving the target. The strength of the sector by sector analysis of measures and instruments is that this approach provides a high level of detail. The weakness is that the analysis is partial, that is to say it does not take into account the macroeconomic knock on effects of measures and instruments. Therefore, using the MSG TECH macro model, macroeconomic analyses have also been carried out. According to the report, mitigation actions that reduce national CO2 emissions by 20% over the period 2008-2020 could result, by 2020, in net employment gains of 0.5-1.5% – depending on the policy package considered – when revenues from carbon pricing are used to reduce social contributions.
Poland	None.
Portugal	Number of green jobs. Statistics Portugal estimates that green jobs accounted for 0,4% of total employment in 2008. Employment projection. The National Energy Strategy is expected to result in more than 120 000 gross job creations, with the majority of them arising from the development of renewable energy sectors.
Slovak Republic	None.
Slovenia	None.
Spain	Number of green jobs. A study supported by the Ministry of Environment estimates green jobs accounted for 2.6% of total employment in 2009 (531 000 jobs). Employment projection. According to the 2009 Economic Report of the President of the Government, one million of green jobs could be created by 2020, a majority of them in sustainable transport and building sectors (gross job creation).
Sweden	None.
Switzerland	Number of green jobs. No official estimates exist, but a preliminary study was conducted ("Cleantech Switzerland – Study on the situation of cleantech businesses in Switzerland"). This study defines "cleantech" as consisting of the following activities: renewable energies, energy efficiency, energy storage; renewable materials, efficient use of resources and materials, including waste management and recycling; sustainable water management; sustainable agriculture and forestry; industrial biotechnology when it reduces consumption of raw materials and energy or enable energy to be generated from biomass; environmental engineering (e.g. measurement technology, remediation of contaminated sites and filter technology). These activities were estimated to account for 4.5% of total employment in 2009.
Turkey	None.

Number of green jobs: observed and projected

United States	<p>Number of green jobs. The first BLS estimates of green jobs using an output-based measure (the Green Goods and Services or “GGS” data) were published in March 2012 and indicate that green jobs accounted for 2.4% of total employment in 2010 (see: http://www.bls.gov/ggs/). A separate survey that implements a process-based measure of green jobs (the Green Technology and Process or “GTP” data) will be published in June 2012. The GGS survey will be repeated on an annual cycle, but the GTP survey is a one-time, special study.</p> <p>Employment projection. The US Department of Labor (USDOL) has launched an evaluation of the State Labor Market Information Improvement Grants that will review how individual states are collecting and analyzing green jobs data. USDOL is also conducting an implementation study to develop an in-depth understanding of program design, goals, and program implementation of the following of its Green Jobs grantees: Energy Training Partnerships, the Pathways Out of Poverty, the State Energy Sector Partnership and Training, and the Health Care Sector and Other High Growth and Emerging Industries. Further studies are being discussed.</p>
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Notes:

Belgium: See http://www.plan.be/press/press_det.php?lang=fr&TM=30&IS=67&KeyPub=764.

United States: For further details on the BLS study of green jobs, see <http://www.bls.gov/green/>.

2. National green-specific employment and skill development programmes

2. Tables 4.A2.3 and 4.A2.4 provide an overview of national green-specific employment and skill development programmes as of 2010. This information is based on responses to an OECD questionnaire that was sent to employment and labour ministries.

Table 4.A2.3 **Specific green-related programmes implemented by national OECD governments, 2010**

Summary table

	Job subsidies	Direct job creations	Education and training programmes		Job subsidies	Direct job creations	Education and training programmes
Australia	X		X	Korea		X	X
Austria			X	Mexico			
Belgium	X	X	X	Netherlands			
Canada			X	Norway			
Chile				Poland			
Czech Republic	X		X	Portugal			
Denmark				Slovak Republic			
Finland			X	Slovenia			X
France			X	Spain		X	X
Germany				Sweden			
Greece	X		X	Switzerland			X
Hungary	X	X	X	Turkey			X
Israel				United States		X	X
Japan							

Source: OECD questionnaire on green jobs and policies.

Table 4.A2.4. National green-specific employment and skill development programmes, 2010

Description of measures

Broad description	
Australia	<p>The Australian Government has primarily focused policy on skills development, rather than green job creation. Australia's <i>Green Skills Agreement</i>, a partnership between the Federal Government, states and territories, aims to build the capacity and capability of the national Vocational Education and Training (VET) sector to provide skills for sustainability training to the workforce. Endorsed by the Council of Australian Governments (COAG) in December 2009, the <i>Green Skills Agreement</i> has four key objectives: <i>i)</i> develop national standards in skills for sustainability within the requirements of the national regulatory framework; <i>ii)</i> up-skill VET practitioners so they can provide effective training and facilitation in skills for sustainability; <i>iii)</i> review and revise Training Packages to incorporate skills for sustainability; and <i>iv)</i> implement strategies to reskill vulnerable workers in the transition to a low carbon economy. Under the <i>Green Skills Agreement</i>, all new trade apprentices who commence training after 1 January 2010 will graduate with a core set of green skills, while 30 000 apprentices in carbon exposed industries who graduate by late 2011 will have qualifications that include clean and green skills. Total public spending on this measure amounts to USD 5.3 million over four years from 2010/11.</p> <p>In addition, a job subsidy programme has been launched in 2010 on a temporary basis, the National Green Jobs Corp (January 2010 - December 2011). Job subsidies are provided for 26 weeks to employers in environment rehabilitation and protection activities, emerging green and climate change industries, hiring unemployed people aged 17-24. With 10 000 beneficiaries, public spending on this programme amount to AUD 79.6 million over two years.</p> <p>These two measures are part of a broader green growth programme, the Clean Sustainable Skills Package. Moreover, Australia's National Energy Efficiency Skills Initiative (NEESI) is currently under development as part of the National Strategy on Energy Efficiency, endorsed by COAG in mid-2009.</p>
Austria	<p><i>Klima:aktiv</i> is the Austrian climate protection initiative launched by the Federal Ministry of Agriculture, Forestry, Environment and Water Management, embedded in the Austrian federal climate strategy. The primary objective of <i>Klima:aktiv</i> is to introduce and promote climate friendly technologies and services. The Austrian federal climate strategy consists in a bundle of measures of regulation, taxes, and subsidies. <i>Klima:aktiv</i> has gathered all voluntary and supportive measures under one umbrella. In the four thematic clusters –Building, Energy Efficiency, Mobility, and Renewable Energy–, specific programmes are carried out by different institutions. These programmes follow a comprehensive and systematic approach in supporting the market introduction of climate-friendly technologies, services and activities. <i>Klima:aktiv</i> follows a so-called “market transformation approach”, which consists in a targeted effort to change the market through an active and comprehensive inclusion of all relevant market players and stakeholders. The main advantages of such an approach are comparably low costs and high sustainable effects. In this case, market transformation aims to raise the share of energy efficient products and services. The advantage of combining all these various strands under one umbrella brand mainly results from the fact that the instruments used (training, consulting, quality management, networking and awareness campaigns) might differ in content and importance in different market segments but not so much in form. Thus, the individual thematic programmes profit from each other: not only can they learn from their own mistakes but also from others, and vice-versa, success stories will quickly work a circuit and all other programmes can profit. <i>Klima:aktiv</i>'s core levers are:</p> <p><i>i)</i> Training of professionals: <i>Klima:aktiv</i> provides the qualifications needed in the thematic programmes and coordinates training and education in the various fields.</p> <p><i>ii)</i> Setting standards and safeguarding quality. Since young and booming markets often cannot provide for quality, <i>Klima:aktiv</i> focuses on safeguarding quality by introducing quality standards for products and services and by establishing quality management systems, e.g. for biomass district heating systems or for buildings.</p> <p><i>iii)</i> Providing information and raising awareness: <i>Klima:aktiv</i> provides online and print information to empower consumers, companies and professionals. <i>Klima:aktiv</i> also participates at a lot of events every year.</p> <p><i>iv)</i> Providing advice and support: <i>Klima:aktiv</i> mainly focuses on offering consulting to companies interested in making their production processes energy efficient, or renovating their facilities, or introducing mobility management, or changing over to energy efficient appliances and IT systems. <i>Klima:aktiv</i> provides for the empowerment of the existing consultants by equipping them with new tools, by benchmarking energy efficiency and by offering further training on specific issues to consultants.</p> <p><i>v)</i> Activating and networking partners: Successful climate protection depends on the commitment of existing initiatives and networks as well as on that of the business and the public sector. <i>Klima:aktiv</i> aims at bringing these players together and at creating a powerful network for climate protection.</p> <p>In addition, the “Master plan of Green Jobs” was launched by the Federal Ministry of Agriculture, Forestry, Environment and Water Management (Lebensministerium) and results out of this initiative were published in 2010. Several Ministries, organisations, etc. were invited to discuss where and how green jobs could be generated. The main sector identified, where most green jobs will be created, is thermal renovation. Finally, few local branches of the Public Employment Service offer training measures in the field of green jobs, but not all over the country.</p>

Broad description	
Belgium	<p>The <i>Plan Marshall 2.vert</i>, a broad environmentally-friendly measure, was launched in December 2009 in Wallonia. Several successive programmes, the so-called “Alliances emploi-environnement”, will be implemented to support skill and employment development in targeted environmentally-friendly activities. The first “Alliance” programme was launched in 2010 for a 5-year period and focuses on occupations in energy-efficient construction and retrofitting. Apprenticeship, vocational training and life-long learning constitute the core elements of this measure (although some job subsidies in the private and public sectors are also available). These specific education and training programmes are implemented within the pre-existing framework for education and training. A multipartite committee is in charge of identifying skill needs and ensuring that adequate formation and training are supplied within this “general” policy framework. Precise numerical targets in terms of number of trainees and hours of formation have been set: depending on the programme, between 15% and 30% of dedicated resources should be targeted at green occupations. Moreover, 25% of the regular screenings of skills and competencies operated by the PES for various occupations will be dedicated to green occupations.</p> <p>Budget: EUR 56 million over 5 years dedicated to education and training in the context of the first “Alliance” programme (and a total of EUR133 million for employment, education and training).</p>
Canada	<p>No specific employment programmes (except the green stimulus package: public investment in green sectors). However, through the Sector Council Program launched in 1993, the Government of Canada is working with the private sector, including Canada’s environmental industry, to enhance adult workers’ skills through activities such as increasing employer investments training. The Environmental Careers Organization (ECO) Canada is a not-for-profit Sector Council organization that was first established in 1992. ECO Canada is focused on supporting Canada’s environment industry by communicating with industry stakeholders, conducting research and creating the necessary resources required to address human resource needs in order to ensure the success of this dynamic sector. In order to define this dynamic sector, ECO Canada has identified three core areas of specialisation including: environmental protection, conservation and preservation of natural resources, and environmental sustainability.</p>
Chile	<p>No specific employment programmes. However, in the context of urban improvement programmes, each municipality autonomously can direct its programs towards initiatives that have a positive impact in the environment. In fact, the guidelines of these programmes include the development of green areas and recycling, among other initiatives. There are about 10 municipalities with environmental certification which generate green jobs. Additionally, there are isolated initiatives in a number of public institutions, such as the impulse of sustainable tourism and the use and development of renewable energies, among others. In addition, the government, through Chilecompras (National Public Procurement System), has impulse the certification for products that promote the use of natural resources and a lower environmental impact.</p>
Czech Republic	<p>No specific employment programmes. However, the government has been closely involved in the formulation of a policy strategy to green the growth within the EU context, and further measures and programmes will be applied on the grounds of EU strategies. In this respect, the Ministry of Education, Youth and Sports currently anticipates the outcome of government discussion upon the “Action Plan for 2011 – 2012: Strategy for sustainable development education in the Czech Republic (2008 – 2015)”. The Plan identifies objectives and resources for the Strategy and sets key topic areas for education and training, in accordance with the Strategy. Part of these topic areas are related to environmental issues.</p> <p>Moreover, as part of the government response to the economic crisis, a specific subsidy programme, “Green Light for Saving”, has been launched in 2009 for a 3-year period. The programme is focused on green investments in households sector (building insulation, building in low-energy standard, installation of renewable energy sources for heating), and its potential effects on jobs were one of considered benefits of the programme.</p>
Denmark	<p>No specific employment programmes, but the potential for green initiatives in the active labour market policies is investigated. The ministry of employment is working on a definition and a follow up project analysing the potential for a green jobs strategy. Thus, while there may be a significant number of measures which are already related to the green sector (e.g. job training could take place in a wind mill factory) there is no definition ready to define it as a green initiative.</p>
Finland	<p>In 2010, education and training in energy efficiency renovation has been identified as a national priority for vocational training. Regional and local PES authorities have the responsibility for the allocation of labour market training according to regional and local needs, including skills related to low carbon economy. The National Climate and Energy Strategy and the National Forest Programme 2015 provide a general framework for the allocation of labour market training resources on green skills. The main focus rests on energy efficiency and renewable energy. Further skills development efforts related to the National Climate and Energy Strategy are under discussion.</p>

Broad description	
France	<p>Within the broad context of the "Grenelle Environnement", the French Environment Strategy, a national plan for green occupations and jobs has been set in 2009. The plan involves three main actors: the government, targeted industrial branches, and regions. It deserves three main purposes: <i>i</i>) identifying and monitoring green-related occupations; <i>ii</i>) integrating green-related skills into the initial and vocational education systems, through the adaptation of existing curricula, the creation of specific formations and the related modification of diploma systems and certificate (e.g. accreditation of work experience) systems; and <i>iii</i>) integrated green occupations into ALMPs, such as apprenticeship contracts or subsidised jobs for disadvantaged workers.</p> <p>As a result, the National Observatory of green occupations and jobs has been created in 2010, with the first task of identifying green occupations and associated skill requirements, as well as estimating the number of green jobs and the potential employment impact of various environmental measures. The Observatory is composed of members from several public bodies: ministry of ecology, ministry of labour, ministry of economy and finance, regional authorities, national institute of statistics and economic studies and other national agencies for environment, employment and education and training.</p>
Germany	No specific employment programmes.
Greece	<p>Several job subsidy measures, targeted towards disadvantaged groups, have been implemented in 2010. While all private employers (or individual entrepreneurs) can access to these measures, the priority is given to small businesses which promote green economy. Likewise, green-related fields have been introduced into apprenticeship or vocational training programmes. Moreover, new specialised programmes of continuing vocational training and skill-upgrading in the fields of energy performance of buildings will be implemented for unemployed and under-employed workers in the construction sector (and related occupations). These programmes have been designed while taking account of programmes, projects and aims pursued by the Ministry of Environment, Energy and Climate Change.</p>
Hungary	<p>Green economy development and climate policies fall under the responsibility of the Ministry for National Development. In cooperation with the Ministry for Rural Development and local municipalities, complex rural programmes will be launched to create green jobs in rural areas. The Ministry for National Development and the Ministry for National Economy (responsible for employment and training policies) also cooperate in order to support the creation of green jobs by improving workers employability and providing them with the necessary green skills.</p> <p>In early 2011, the Hungarian government launched the New Széchenyi Plan aimed at boosting economic growth and creating new jobs in the private sector, in particular through supporting SMEs. The objective is the creation of one million jobs over a 10-year period. Developing green economy figures among the seven priority areas of this Plan, which sets the following objectives: increasing the utilisation of alternative and renewable energy source; developing energy efficient technologies; and creating 200 thousand new jobs in these areas by 2020. As part of this Plan, a job subsidy programme has been launched recently and the government is considering the possibility of introducing measures aimed at creating jobs in the public sector as well as green-related training programmes (details of these are currently under elaboration).</p>
Israel	No specific employment programmes. The greening of the economy is still at an early stage and the Government has not yet institutionalised the process in terms of definition, specific programmes or global strategy.
Japan	No specific employment programmes.
Korea	<p>Korea has been implementing its "Action Plans for Job-conducive Green New Deal" scheme since January 2009 as part of their economic recovery package. The policy's aim is to overcome the economic crisis in the short-term as well as to strengthen the growth potential over the longer-term. A sum of KRW 50 trillion being invested is expected to create 960 000 jobs that are environmentally-friendly from 2009 to 2012. In addition, the Korean government in November 2009 made public its longer-term "Green Jobs Plan", which was produced through the collaborative efforts of 10 ministries, including the Ministry of Employment and Labour (MOEL) and the Ministry of Strategy and Finance. The plan is designed to support government's agenda to combine vigorous economic growth with environmental progress as well as to create green jobs and to nurture talented green workforce. In 2011, total 14 programmes among 5 ministries are implementing to create jobs in the public sector, while 34 programmes among 10 ministries are activating to foster green education and training. For example, the MOEL in 2010 has developed "Green SMEs Training Consortium Programme" to raise green workforces in SMEs to effectively address skill problems in shifting to a greener economy. The designated model centre (Korea University of Technology and Education) that gives training in nine core areas including photovoltaic, bio- and other renewable energy sources, eco-transport system is receiving temporary supports such as facilities and equipments expenses until 2016. In 2010 alone, KRW 21.7 billion was budgeted to this program, and the government expects that this would function as a bridge to channelling green technical skills in large companies such as Samsung Electronics to SMEs.</p>
Mexico	No specific employment programmes.

Broad description	
Netherlands	No specific employment programmes. The Dutch policy relies on a general approach, considering that: <i>i)</i> labour market will adjust automatically when the production gets greener; and <i>ii)</i> for many green jobs the same skills are needed as for normal jobs, so that special employment programmes are not necessary. A well functioning education system, where employees learn to adjust to labour market changes, is seen as being most important.
Norway	No specific employment programmes. Instead, a general ALMP-approach has been adopted, as the Norwegian authorities consider that the labour market policies needed to meet "green change" are –to a large extent– the same as those needed to meet other forms of shifts and changes in the economy. But the government is continuously following the development and considering this general approach.
Poland	No specific employment programmes. Green jobs represent a new issue that the government is starting to investigate. Whether such programmes will be developed in near future is difficult to know, as presently, the greening of the economy is treated mostly from the perspective of economic growth or industries rather than from a labour market perspective.
Portugal	No specific employment programmes. A National Energy Strategy was launched in 2010, with the aim of promoting sustainable growth. In particular, this Strategy seeks to promote job creation in economic areas connected with renewable energy sources and energy efficiency issues.
Slovak Republic	No specific employment programmes. The greening of the economy falls under the competency of several ministries. Each ministry deals with its own substantive area more or less individually, which prevents positive synergies as there is no institutionalised framework for assigning such cross-competency type of programmes.
Slovenia	The Government Office of Climate Change has been establishing in 2009, with the tasks of providing guidance and coordinating government policies and measures related to climate change. The Office is currently working on implementing a <i>Climate Change Act</i> and a long-term strategy to determine the national policy of climate-change mitigation and adaptation till 2050. A number of policy options/projects and their economic feasibility are being discussed. No specific employment programmes have been implemented yet, but two pilot projects related to green vocational training were launched in 2009 by the Government Office of Climate Change in the areas of efficient energy use and renewable sources of energy, and eco-agriculture.
Spain	General policy framework: Spanish Strategy for Sustainable Development, which covers three areas: environmental sustainability, social sustainability, and macroeconomic sustainability. No specific labour market programmes <i>per se</i> , but significant public investments have been made in green activities as part of the Spanish Economy and Employment Stimulation Plan – Plan E – that has been implemented in response to the economic crisis. In 2009, EUR 1.12 billion have been allocated to environmental projects as part of the Fund for Local Entities (which represents 15% of the total amount), and one third of the Special Fund for Employment and Economic Reactivation, budgeted at EUR 3 billion, has been earmarked for environmental projects. These measures are expected to result in <i>direct job creations</i> .
Sweden	While there is no specific employment programmes designed to adapt the labour market to green growth, the Government is monitoring the available and ongoing research in this area as well as the international initiatives, and aims to undertake national measures at the appropriate stage.
Switzerland	The Swiss Federal Government has implemented several measures to promote training in green skills. A temporary crisis measure enacted in 2009 offered financial support for occupational re-training and continuing education programmes in the energy and building sectors. This support was available to both incumbent workers and unemployed persons. A longer-run programme known as <i>Power 40+</i> was introduced in 2011. This programme is financed by the unemployment insurance system and offers re-training as an energy consultant to unemployed workers over the age of 40 with a professional background in the building sector. The Swiss government also introduced Master Plan Cleantech in 2011. This programme combines a number of measures intended to assure that the Swiss economy achieves a strong competitive position in global markets for resource-efficient technologies, goods and services, and renewable energy by 2020. This includes measures to expand initial education in STEM subjects and VET/CET in renewable energy.

Broad description	
Turkey	<p>No specific employment programmes. However, in the context of EU assistance to countries engaged in the accession process, the Ministry of Energy and Natural Resources, in collaboration with the Ministry of Labour and Social Security, will implement vocational training and internship programmes to increase the employability of young worker in the electricity generation sector. EU 7 billion is allocated to this measure, including almost EUR 6 billion from EU under the "Instrument for Pre-accession" funds (within the broader context of supporting the development of the energy sector in Turkey). The measure will be launched in 2012 for a 23-month period. 1 000 young workers with relevant educational backgrounds will be provided with at least 45 days of vocational training, or at least 15 days of apprenticeship. Moreover, trainees will attend to workshops on green jobs, environment protection, energy efficiency, etc.</p>
United States	<p>The American Recovery and Reinvestment Act of 2009 (Recovery Act) made available USD 750 million in competitive grants for worker training and placement in high-growth and emerging industry sectors. Of this amount, USD 500 million have been awarded to green jobs programmes by the USDOL Employment and Training Administration. These funds must be used for research, labour exchange, and job training for careers in energy efficiency and renewable energy industries, as described in the Green Jobs Act of 2007 (Title X of the 2007 Energy Independence and Security Act). The US Department of Labor (USDOL) completed five Green Jobs grant competitions from late 2009 through early 2010 to award funds made available through the Recovery Act. With the exception of the State Labor Market information improvement grants, intended to support innovative approaches for identifying and obtaining information on green jobs at the state level, the Recovery Act-funded programmes provide training and placement services for disadvantaged workers that prepare them to enter the energy efficiency and renewable energy industries, as well as green occupations within other industries, with a reinforced assistance to the most disadvantaged groups living in high-poverty areas.</p> <p>The duration of these grant-funded programmes varies in length, with the period of grant performance ranging from a maximum of 12 to max 36 months. However, the funding for green jobs continues through the USDOL Green Jobs Innovation Fund (USD 40 million in FY 2010), which is designed to complement and extend the competitive grant awards made through the Recovery Act of 2009. In addition, a green dimension is being integrated into pre-existing measures. For instance, Job Corps, an intensive education and training programme for at-risk youth, and the YouthBuild program, created to help at-risk youth gain education and occupational credentials while building or rehabilitating affordable housing, are implementing green curricula and many Job Corps facilities employ green technology.</p> <p>Finally, USDOL is represented on United States Government interagency working groups related to clean energy and has negotiated an agreement with the Departments of Education and Energy and an agreement with Department of Housing and Urban Development in order to collaborate closely on linking the US workforce to jobs, training and educational opportunities.</p>

Source: OECD questionnaire on green jobs and policies (2010)