

## **Jobs and the Climate and Energy Package** **Climate Protection Creates EU Employment**

The increasing impacts of climate change and the strategies to combat them will require a massive refocus of the global economy, creating **new opportunities for growth and employment** but also increasing structural changes in some sectors.

Aware of the magnitude of climate change, **the European Union has placed climate change mitigation measures at the heart of its policies** and defined them as an integral part of its strategy towards sustainable economic growth and job creation.

The benefits to the environment of policies aimed at reducing greenhouse gas (GHG) emissions by 30% by 2020 are clearly understood. However, the potential impacts of climate change mitigation policies on the different economic sectors are still subject to strong debate.

Opponents of climate change mitigation legislation are increasingly using the economic costs arguments, claiming that these policies would be 'bad for the economy.' The industry studies have often assumed a great deal of inflexibility, such that in the wake of legislation the only options would be closure of facilities due to steep increases in production costs and/or sizeable layoffs of workers. Government-sponsored studies sometimes make similar assumptions, based on data provided to them by industry. Analysis of actual costs and job losses post-regulation on the other hand, show estimates of costs and job losses to be exaggerated (Ackerman 2006<sup>1</sup>; Goodstein 1999<sup>2</sup>). Far more flexible and cheaper options can be possible by revamping production processes, substituting among inputs, and through innovation in technology (Nelson<sup>3</sup>, 2008).

So far, empirical research has shown that economic productivity increases when conditions are conducive to innovation, and **studies indicate that the net impact of climate policies on employment for the economy as a whole have so far been either neutral or positive.**

According to the Stern review<sup>4</sup>, the net employment effects of environmental policies are expected to be positive and the number of jobs created clearly outweighs the jobs potentially lost. An ETUC et al. study<sup>5</sup> emphasizes the potential that exists for job creation linked to climate mitigation and adaptation and foresees a **1.5% increase in employment over the next 10-20 years** resulting from CO<sub>2</sub> emissions reduction policies.

However, as **employment will shift towards jobs associated with cleaner, more efficient products and processes** in sectors related to renewable energy sources (RES), energy efficiency and construction, other sectors with less efficient production processes may suffer from job losses in the short-run, associated with necessary business adjustments. According to the study particularly coal, gas, oil extractive and refining industries along with few others are likely to see a

<sup>1</sup> Ackerman, Frank and Finlayson, Ian. 2006. "The Economics of Inaction on Climate Change: A Sensitivity Analysis." Climate Policy 6(5): 509-526.

<sup>2</sup> Goodstein, Eban. 1999. "The Trade-Off Myth: Fact and Fiction about Jobs and the Environment". Washington, D.C., Island Press.

<sup>3</sup> Nelson. 2008. "How costly is climate change mitigation?"

<sup>4</sup> Economics of Climate change, Nicholas Stern, 2006

<sup>5</sup> European Trade Union Confederation (ETUC), Instituto Sindical de Trabajo, Ambiente y Salud (ISTAS), Social Development Agency (SDA), Syndex and Wuppertal Institute. 2005. "Climate Change and Employment- Impact on Employment in the European Union 25 of climate change and CO2 reduction measures by 2030".

reduction of jobs and will require a transition to other sectors (UNEP, 2007<sup>6</sup>). Such job-losses must be accompanied by re-training programmes and social measures to ensure that minimum hardship is endured by the affected workers. However, the ZEW study<sup>7</sup> commissioned by WWF shows that the impacts of the European Emissions Trading Scheme (EU ETS) on competitiveness and employment are modest and certainly smaller than the impacts of alternative regulation scenarios.

The table below shows the economic effects of some of the policies introduced in the EU climate package.

Table 1: Impact of policies in the EU Climate Package on Employment

	Target	Policy	Economic result	Change of Employment
<b>EU ETS</b>	Mainly CO <sub>2</sub> reductions	Market mechanism	Price of carbon and investment in low carbon technology	Depends on allocation methodology and revenue distribution
<b>Biofuel</b>	Increased Share of biofuels	Command and Control	Investment	Increase in the agriculture sector
<b>Renewable Energy</b>	Share of RES in fuel mix	Feed-in tariff or Quota Tax breaks Financial support Command and Control	Investment	Increase in the RES and associated Industry
<b>Non-ETS EU measures</b>	GHG	Taxes Command and control	Investment, Prices on GHG's (through taxes)	Increase particularly in the construction sector, decrease in fossil fuel processing

(Source: Christian Lutz and Ulrike Lehr, 2008 adapted by WWF)

The **construction sector is seen to have the most ancillary benefits** arising from climate change mitigation policies in terms of growth & employment. According to a scenario by Eurima<sup>8</sup> an improved EU Directive on Energy Performance of Buildings (EPBD) would save up to 70 million tons of CO<sub>2</sub> emission per year while creating up to 285,000 more jobs in the sector. A scenario<sup>9</sup> presented in the ETUC et al. study estimates that between **274,000 to 856,250** jobs could be created if the CO<sub>2</sub> reduction targets are met by 2030. **In the transport sector, overall employment is expected to grow and clean technology be stimulated in all modes of transport.**

The ETUC et al. study also sees a shift of jobs from the power sector to activities related to energy efficiency. This is also confirmed by **a study for the European Foundation for the Improvement**

<sup>6</sup> UNEP, ILO, ITUC. 2007. "Green Jobs: Towards sustainable work in a low-carbon world".

<sup>7</sup> Zentrum für Europäische Wirtschaftsforschung GmbH (ZEW), Center for European Economic Research. 2006. "Impact of EU ETS on Competitiveness and Employment in Europe".

<sup>8</sup> European Insulations Manufacturers' Association (Eurima).

<sup>9</sup> Factor 4 scenario, presented in the ETUC et al study aims at reductions of 75% emissions from the residential sector in the long term (2030-2050)

**of Living and Working Conditions found that the adoption of energy conservation best available technologies could create 500,000 extra jobs in the EU.**

An example from GHK, IEEP and the Cambridge and Econometrics 2007 study<sup>10</sup> shows the impact on employment and output through increased energy efficiency in the manufacturing sector and energy intensive industries, increase in bio-fuels in transport and increase in electricity generation from Renewable energy technologies (at different cost levels). An overview of direct and indirect and total impacts on employment and outputs of the above mentioned policies is shown in the table below.

Table 2: The Economic Impacts of Selected Policy Scenarios

Policy scenario	Net Direct Impact		Net Indirect Impact		Total Net Impact	
	Output (€ m)	Jobs (FTE)	Output (€ m)	Jobs (FTE)	Output (€ m)	Jobs (FTE)
10% energy saving in manufacturing	0	122500	480	14600	480	137200
10% energy saving in energy intensive industries	1000	54000	8000	37000	9000	91000
10% bio-fuels	0	108100	1500	31400	1500	139500
10% RES	0	0	8610	58200	8610	58200

(Source: GHK, IEEP and Cambridge Econometric, where Output is turnover and gross value added (GVA) associated with activities related to environmental resources and FTE stands for Full Time Equivalent)

The results in the table show the net direct and indirect effects accounting for jobs and output losses in some sectors while gains in the others. Overall the scenarios showed that the move towards greener options would be beneficial for the EU economy due to the longer supply chain and higher labour intensity<sup>11</sup> of the environmental-friendly sectors.

From 2000 to 2005, energy production from renewables increased from by 20.5% from 94.36 Mtoe to 113.72 Mtoe in the EU-25 (Eurostat). Already a number of countries are achieving high employment levels from renewable energy activities, particularly in the wind energy industry. Renewable energy jobs in Germany shot up to 249,300 in 2007 from 160,500 green jobs in Germany in 2004<sup>12</sup>. According to government figures, as many as 400,000 people could be employed in the renewable energy industry in Germany by 2020. **By raising the share of renewables to 20% of EU's energy consumption by 2020, the green jobs created will outweigh the number of jobs lost in other sectors.** According to the European Renewable Energy Council (EREC) **gross employment in the EU is to rise to 2 million in the RES sector alone by 2020**<sup>13</sup>, not just in electricity generation but also in the related agricultural production and in operation and maintenance, if the target is met. An Ecotec study<sup>14</sup> elaborates that the future potential for EU RES export markets will put the EU at the technological forefront and create more jobs.

However, a UNEP study warns that **the potential for employment creation within the "green" sector is not being fully exploited**. A major barrier to green jobs is the cost factor, since unsustainable business practices often remain more profitable *in the short-term*. The study further highlights the fact that short-term pressure of shareholders and financial markets are not easily overcome. Hence the necessary role of government policies and support for the creation of new green jobs within priority sectors, to ensure the EU's long-term and mid-term interest is safeguarded.

<sup>10</sup> For details please refer to the study "Links between environment, economy and jobs", GHK, IEEP, Cambridge Econometrics, 2007

<sup>11</sup> Labor intensity is the relative proportion of labor (compared to capital) used in a process.

<sup>12</sup> <http://www.renewableenergyworld.com/rea/news/story?id=52089>

<sup>13</sup> European Renewable Energy Council (EREC). 2007. "Roadmap to 2020"

<sup>14</sup> Ecotec. 2002. Renewable Energy Sector in the EU: its employment and export potential

In its conclusions the 2008 Spring European Council underlines the necessity of focusing on education, youth employment, and the labor market as a whole, while considering climate change related issues. It stressed the need to focus on greening old jobs (developing new skills in traditional industries in order to make them more environmental friendly), and the creation of new green jobs (due to the establishment of new industries).

**WWF believes it is necessary that ambitious EU climate policy be embedded in a broad social consensus.** And in order to design better policies, a more detailed sectoral and regional analysis is required to identify the type and scale of jobs that are at risk as well as the opportunities that may arise, while defining the accompanying measures for a transition to a sustainable European economy.

Climate change mitigation measures must be coupled with social and sustainable development policies, resource strategies, and fiscal incentives to kick-start the ecological modernization of industry.

The EU's climate package is a good amalgamation of policies that can deliver 'win-wins' and mitigate negative spillovers. The EU can improve the probability of creating new labor markets by taking the first step and by convincing others to join at the international level.

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