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Renewable sources of energy

RENEWABLE SOURCES OF ENERGY

Europe's employment potential in renewable energies

A study commissioned by the European Commission's Directorate for Energy and Transport found that the renewable energy sector employed roughly 1.4 million people in 2005 (direct and indirect jobs) in Europe. Achieving the EU's binding target of a 20% share of energy from renewable sources would double that figure, leading to 2.8 million jobs in the sector.

However, the **Greens** want the EU to go further. This would lead to **hundreds of thousands of additional jobs** by 2020. The Greens also want ambitious renewable targets beyond 2020, moving towards a long-term goal of 100% renewables.

The German example

According to UNEP, every third wind turbine and solar PV cell in the world is made in Germany. The renewables sector numbers 20,000 companies - half of them in solar energy, 5,000 in biomass, 3,500 in wind power and 500 in geothermal energy. According to the German environment ministry (BMU), the number of jobs in this sector in Germany rose from approximately 250,000 in 2007 to about 280,000 last year, with a turnover of nearly 29 billion euro.

Energy production from renewables led to a reduction of roughly 112 million tons of CO2 - 56 million tons of which were saved alone through measures such as feed in tariffs, as provided for in the Renewable Energy Sources Act (EEG).

Estimated Employment in the Renewables Energy Sector, Selected Countries and World, 2006 - 2008

Renewable Energy Source	World*	Selected Countries	
Wind	300,000	Germany	82,100
		Spain	40,000
		USA	36,800

		China	22,200
		Denmark***	23,500
		India	10,000
		France***	7,000
		Italy	4,000
Solar Photovoltaic	170,000**	China	55,000
		Germany	42,000
		Spain	26,600
		USA	15,700
		Italy	1,700
Solar Thermal	624,000-plus	China	600,000
		Germany	13,300
		Spain***	9,142
		USA	1,900
Biomass (1)	1,174,000	Brazil	500,000
		USA	312,200
		China	266,000
		Germany	95,800
		Spain***	10,349
Hydropower	39,000-plus	Europe	20,000
		USA	19,000
Geothermal	25,000	USA	21,000
		Germany	4,200
Renewables Combined	2,332,000-plus		

* Countries for which information in available.
** Under the assumption that Japan's PV industry employs roughly as many people as Germany's PV industry.
*** Direct jobs only

(1) **Biomass**

Biomass, as a source of renewable energy, refers to living or recently living organic matter that produces energy when burned or transformed into fuel. Waste or forest residues such as dead trees or tree stumps can be burned or crops can be converted into fuels, called agro-fuels.

Biomass has an important employment potential. The sector employs more than 1 million people worldwide, 90 percent of which in Brazil, the US and China. However, not all forms of biomass are ecologically sound.

While waste and residue are unproblematic and quite efficient, some categories of agro-fuels jeopardise food production and biodiversity. Agro-fuels produced from grain, oilseeds and sugarcane - misleadingly called biofuels- result in an unsustainable use of land, water and energy: Tropical rain forests are cleared for palm oil plantations; soy production consumes a growing amount of groundwater; the energy balance of the agro-fuels life cycle is often negative.

The Greens believe sustainable agriculture should be used to feed people, not vehicle engines. The cultivation of crops exclusively for the production of agro-fuels leads to many problems: deforestation, land degradation and the energy-intensive refining processes. In addition, these agro-fuels have been demonstrated to have negative social impacts, such as on land rights. The conversion of agricultural land for the cultivation of crops for fuel has also had a damaging impact on food security, with shortages and price spikes creating problems particularly in developing countries.

Source:
- UNEP (Sept 2008): 'Green jobs: towards decent work in a sustainable, low-carbon world'.
- German Environment Ministry (BMU)

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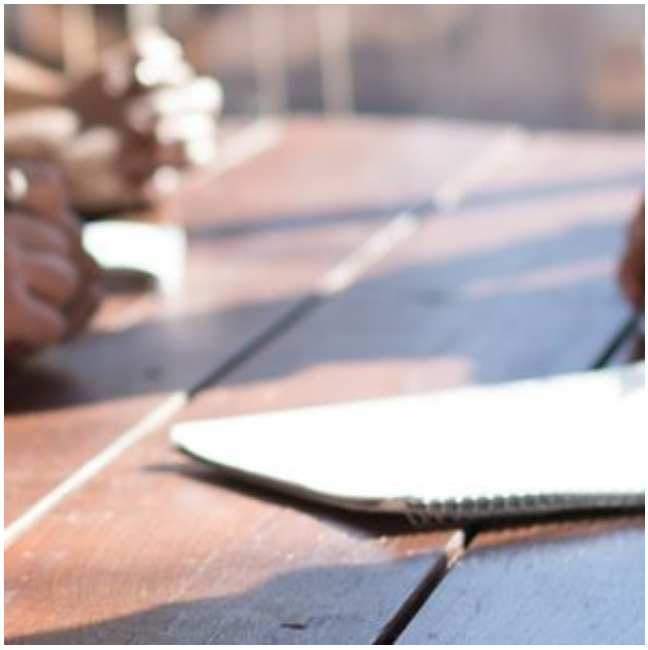

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