

SUPPORTING EUROPE'S
PARLIAMENTARIANS



COMBATING
CLIMATE CHANGE
MAINTAINING
MOMENTUM

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DELIVERING A LOW CARBON FUTURE

Europe has committed to limiting global temperature rise to 2°C. Below this level it is predicted the worst impacts of climate change will be averted. A rise of 2°C is now almost inevitable, given current and historical emissions.

Collectively the EU 27 is the third largest global emitter of Greenhouse Gases (GHGs). Europe has also made a disproportionate historical contribution to GHG rises since the industrial revolution. While Europe's direct emissions are recorded, the EU 27 has a wider climate footprint when taking account of consumption of goods grown and manufactured elsewhere.

Combating climate change, and limiting the global temperature increase to 2°C, requires rapid action. The later we act to address our GHG emissions the greater the risk and the more costly our actions. By converting our economies to a lower carbon path Europe is offered two important opportunities: to contribute to the aversion of climate change; and to build a renewed model of development less dependent on polluting and insecure energy sources.

AVOIDING CATASTROPHIC CHANGE – WHAT DO WE NEED TO DELIVER?

To limit global temperature rise to approximately 2°C the Intergovernmental Panel on Climate Change (IPCC) estimated, in its 4th assessment report, that GHG concentrations in the atmosphere must be limited to between 445 and 535 ppm of CO₂ equivalent. To achieve this the IPCC estimated that global emissions of GHGs should peak in 2015 then decline, with between a 50 and 85% reduction in global GHG emissions by 2050 (based on 2000 levels). In 2005 global concentrations were already estimated at 375 ppm of CO₂ equivalent.

Based on the IPCC's predictions the Commission projected that EU emissions needed to be reduced by 30% in 2020, placing Europe on a trajectory to deliver between 50 and 80% emission reductions by 2050 (the European Parliament called for an EU reduction target of 80% by 2050). In light of the lack of international agreement the EU target currently stands at a 20% reduction by 2020, with the intention this will rise to 30% following a deal this December in Copenhagen (see section 4).

'Europe stands at a crossroads. It has the chance to invest in the future by turning to more sustainable production and consumption patterns.'

Sirpa Pietikäinen, MEP

THE COST OF INACTION

The global nature of the risk and the all-encompassing nature of impacts mean costs associated with uninhibited climate change are high.

The Stern Review estimated that failure to act swiftly to limit the extent of change would lead to a loss equivalent to at least 5% of global GDP each year, now and forever. When a wider range of risks and impacts was taken into account, estimates rose to 20% of GDP. In contrast, the study found that the costs of action could be limited to around 1% of global GDP each year. It also noted that investment that takes place in the next 10 to 20 years would have a profound effect on the climate in the second half of this century.

Other research has noted that while the main benefits of climate action will be to avert changes into the future, there are significant co-benefits that will be felt more rapidly. These are primarily linked to the reduction in use of fossil fuels. For example, emissions of nitrous oxide, low level ozone and particulates to air would fall, reducing the scale and severity of respiratory illness. Other important co-benefits are energy security and the promotion of green jobs.

'It is impossible to imagine a meaningful cut in carbon emissions without vastly reducing our dependence on their key source: fossil fuel consumption. We need energy production that is sustainable, but we need it to be affordable and secure too. As time goes by fossil fuels are proving progressively less able to meet any one of these three criteria.'

Graham Watson, MEP

ENERGY SECURITY

The security of Europe's energy supply is increasingly a concern; rising oil prices, geopolitical uncertainty and the unpredictable behaviour of a select few suppliers have led us to look elsewhere to satisfy our energy needs. In order to increase energy security we need to decrease our energy demand through efficiency measures and diversify our supply options.

The diversification of supply implies expanding the technologies from which we derive our energy, expanding the number of energy suppliers and delivering more energy from domestic sources. Shifting towards low carbon technologies importantly offers an opportunity to achieve all these goals. Scenarios envisage a much more diverse, flexible delivery of our energy needs from smart grids to variable renewable sources. The development of a European supergrid to enable more dynamic sharing of electricity supplies is also a possibility. This should deliver a future that offers cleaner energy but also a more intelligent approach to its management.

'In the energy aisle of the European supermarket the challenges look daunting.... geopolitical tensions in the Middle East, the escalation of third world countries' debt and an economic downturn that has pushed many countries to the edge of the financial abyss. These problems are interconnected: we need to change our behaviour in order to solve them and guarantee the future development of our continent.'

Vittorio Prodi, MEP

PROMOTING CLIMATE-FRIENDLY GROWTH AND JOBS

Combating climate change will necessitate getting tough on certain sectors. There is scope for efficiency savings within many industry sectors, offering a win-win for competitiveness and the environment. Beyond this we have to plan and offer preferential financial support for our emerging low carbon sectors.

There are already a significant number of low carbon jobs in Europe. A study by WWF identified that at least 3.4 million European jobs are directly related to renewable energy, sustainable transport and energy efficient goods and services. This compares with an estimated 2.8 million jobs in industries such as mining, electricity, gas, cement, iron and steel. The assessment predicts that the low carbon economy will continue to expand in the future.

Investment in low carbon solutions can directly offer jobs and economic opportunities in Europe. Moreover, Europe as a trading bloc has a major role in the generation of low carbon investment across the globe. It is well documented that product standards adopted in Europe often become the norm. Technical standards controlling the energy use and efficiency of, or embodied carbon contained in, products placed on Europe's market are potentially powerful tools. These should be used to generate green investment both within and outside Europe.

'We need to act now and invest in products that are fit for the future. Following Winston Churchill's motto that we should "never waste a crisis" we should take this opportunity [the financial crisis] to fundamentally re-design current politics. The market for 'green technology' is already worth more than €1,000 billion.'

Karl Heinz Florenz, MEP

EU EMISSIONS – EUROPE'S GLOBAL CONTRIBUTION

Emissions of man-made GHGs have risen by 70% worldwide since 1970. In 2007 the 27 European Member States emitted a total of 5,045 million tonnes of CO₂ equivalent. Between 1990 and 2007 emissions from the EU 27 decreased by 9.3% (519 million tonnes CO₂ equivalent). These drops were largely driven by shifts from coal to gas to fuel heating and electricity production and the reduction in the level of industrial activity particularly in Central and Eastern Europe.

The energy industry and transport sectors are by far the largest contributors to European GHG emissions. Other important sectors include (in order of greatest emission contribution) manufacturing and construction, agriculture, industrial processes and waste management.

The EU 27 was the third highest global emitter in 2006, contributing 13.8% of global emissions. In 2006 China overtook the US as the biggest emitter of GHGs (contributing 21.5 versus 20.2% of emissions). Looking simply at these high level figures misses two important factors. Firstly GHGs are cumulative, therefore a country's historical levels of emissions are important as well as their current levels. Secondly, population is linked to emission levels.

When comparing global GHG emissions per capita the US is 7th, the Netherlands is 16th, the UK is 36th, and China is 72nd. To place this in context, 2004 per capita emissions of CO₂ in the US were 20.6 tonnes, in the UK they were 9.8 tonnes and in China 3.8 tonnes.

EUROPE'S GREENHOUSE GAS EMISSIONS (CO₂ EQUIVALENT)

Member State	2007 (million tonnes)	Change 2006-2007 (%)	Change 1990-2007 (%)
EU 27	5,045.1	-1.2	-9.3
EU 15	4,052.0	-1.6	-4.3
Germany	956.1	-2.4	-21.3
United Kingdom	636.7	-1.7	-17.4
Italy	552.8	-1.8	7.1
France	531.1	-2.0	-5.6
Spain	442.3	2.1	53.5
Poland	398.9	-0.1	-13.2
Netherlands	207.5	-0.5	-2.1
Romania	152.3	-1.0	-37.3
Czech Republic	150.8	1.2	-22.5
Greece	131.9	2.9	24.9
Belgium	131.3	-3.9	-8.3
Austria	88.0	-3.9	11.3
Portugal	81.8	-3.4	38.1
Finland	78.3	-2.0	10.6
Hungary	75.9	-3.7	-23.5
Bulgaria	75.5	5.9	-35.8
Ireland	69.2	-0.7	25.0
Denmark	66.6	-6.2	-3.5
Sweden	65.4	-2.2	-9.1
Slovakia	47.0	-4.1	-35.9
Lithuania	24.7	8.1	-49.6
Estonia	22.0	14.8	-47.5
Slovenia	20.7	0.7	11.6
Luxembourg	12.9	-2.9	-1.6
Latvia	12.1	3.5	-54.7
Cyprus	10.1	1.6	85.3
Malta	3.0	2.3	45.7

Annual European Community Greenhouse Gas inventory, EEA.

INSTITUTE FOR EUROPEAN ENVIRONMENTAL POLICY

IEEP is an independent not for profit institute dedicated to advancing an environmentally sustainable Europe.

IEEP's diverse research team are expert in climate policy, focusing both on mitigation and adaptation challenges. Since 2003 IEEP has worked for the European Parliament offering independent support to MEPs sitting on the ENVI Committee. In addition IEEP conducts independent research into Europe's efforts to promote climate action, helping to define future policy and best practice approaches to implementation.

Visit www.ieep.eu/briefingsonclimate for:

- Briefing materials translated into Bulgarian, Czech, French, German, Hungarian, Italian, Polish, Romanian and Spanish.
- A full bibliography, lists of the key organisations engaged in the development of EU climate policy and further analysis including a timetable for EU and international action on climate between 2009 and 2014.

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