International Perspectives on Climate Change

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Outline

1. Taking Sustainability Seriously
2. What is the European Union?
3. Global GHG Emissions
4. The EU and Climate Change
5. The U.S. in the View of the EU

Part 1

Taking Sustainability Seriously

Taking Sustainability Seriously

- In European countries, concept of sustainable communities is about relationship between physical environment *and* the people who populate it, including a wide range of social issues that transcend the purely environmental.
- This view of sustainability places great import on the function of civil society—the institutions and social processes in society that influence how residents interact (or do not interact) with each other.

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

Taking Sustainability Seriously

- Is the character of the civil society in some way a determinant of or influence on whether countries will choose to be aggressive in pursuing sustainability?
- Can countries' sustainability initiatives, in practice, accommodate expanded definitions that incorporate issues of civil society?

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

Taking Sustainability Seriously

- Just as many conceptions of sustainability rely on communitarian principles, it is these very principles that make the pursuit of sustainable societies a very political process.
- Making countries livable requires changing the fabric of civil society.

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

Taking Sustainability Seriously

- For any sustainability initiative being successful , the political will is required and, therefore, has to be stimulated.
- The pursuit of greater public involvement constitutes an important and integral piece of how some countries define sustainability.
- Participatory processes are essential in transforming societies into environmentally responsible ones.
- Addressing issues of civil society can begin the process of altering shared community values.

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

The "Three Deadly Sins"

- Tragedy of the commons.
- Not-in-my-backyard (NIMBY) syndrome.
- Transboundary shifting of environmental impacts.

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

Communitarian Foundation of Sustainability

- The difficulty in making geographic areas sustainable is the fact that "the three sins" represent system-level consequences of individual-level attitudes, values, and behaviors.
- All "three sins" are fed by "rampant individualism".
- What is good for the community in the aggregate is not always simply the sum total of what is good for each individual acting as "rational consumers" in that community.
- There is little recognition of the relationship between the presence of three deadly sins and the inability to become sustainable.

(adopted from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

- "You can't always get what you want". (Rolling Stones).

Taking Sustainability Seriously

Press Release, 13 March 2008

"Europeans put the environment centre stage"

- More than 95% of European citizens feel that it is important to protect the environment.
- Some 80% also feel it influences their quality of life and consider that they have a role to play in protecting it.
- Climate change tops the list of Europeans' environmental concerns, followed by pollution and man-made disasters.
- Some 64% feel that protecting the environment must be given priority over economic competitiveness.
- Over two-thirds of Europeans prefer policy decisions on the environment to be made at European Union level.

Part 2

What is the European Union?

What is the European Union?

A unique economic and political partnership between 27 democratic European countries with 495 million citizens.

Enough!

The "Pre-History" of the European Union

- Thousands of years of wars across Europe.
- 1914-1918/19: WWI
- 1939-1945: WWII

History of the European Union

From 6 to 27

History of the European Union

1945-1959: A peaceful Europe – the beginnings of cooperation

1960-1969: The "Swinging Sixties" – a period of economic growth

1970-1979: A growing community – the first enlargement

1980-1989: The changing face of Europe – the fall of the Berlin Wall

1990-1999: A Europe without frontiers

2000-today: A decade of further expansion

History of the European Union

1945-1959: A peaceful Europe – the beginnings of cooperation

18 April 1951:
Based on the Schuman plan, six countries sign a treaty to run their heavy industries – coal and steel – under a common management. In this way, none can on its own make the weapons of war to turn against the other, as in the past.

Founding Members:
Belgium, France, Germany, Italy, Luxembourg, Netherlands.

History in Europe

1945-1959: The Cold War starts

History of the European Union

1960-1969: The "Swinging Sixties" – a period of economic growth

The EU starts its common agricultural policy giving the countries joint control over food production. Farmers are paid the same price for their produce. The EU grows enough food for its needs and farmers earn well. The unwanted side-effect is overproduction with mountains of surplus produce.

1963: The EU signs its first big international agreement — a deal to help 18 former colonies in Africa.

1968: The six remove customs duties on goods imported from each other, allowing free cross-border trade for the first time. They also apply the same duties on their imports from outside countries. The world's biggest trading group is born.

History in Europe

1960-69: The "Baby Boom"

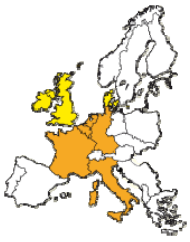
U.S.A.

Germany

History of the European Union

1970-1979: A growing community – the first enlargement

1979: EU citizens directly elect the members of the European Parliament for the first time. Previously they were delegated by national parliaments.



1973: 3 New Member States – Denmark, Ireland , United Kingdom.

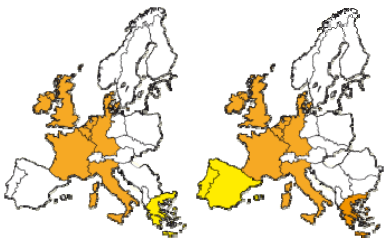
History in Europe

1970-1979: Oil Crisis; "Acid Rain"; Greenpeace

History of the European Union

1980-1989: The changing face of Europe – the fall of the Berlin Wall

1987: The EU launches the Erasmus programme to fund university students wishing to study for up to a year in another European country. More than 2 million young people have benefited from this and similar EU schemes.



1981: 1 New Member State – Greece.

1986: 2 New Member States – Portugal, Spain.

History in Europe

1980-1989: "The Greens"

1980: Foundation

Since 1983: Part of German Parliament

1998-2005: Part of German Government (Coalition with Social Democratic Party of Germany)

History of the European Union

1990-1999: A Europe without frontiers

1993: The single market and its four freedoms are established: the free movement of goods, services, people and money is now reality.

1999: The euro is introduced in 11 countries (joined by Greece in 2001) for commercial and financial transactions only. Notes and coins will come later. Denmark, Sweden and the United Kingdom decide to stay out for the time being.

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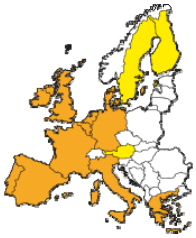


1995 : 3 New Member States – Austria, Finland, Sweden.

History in Europe

1990-1999: "The Green Point"

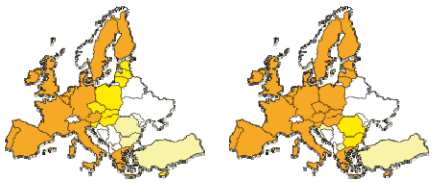
1990: Introduction of Dual Waste Management System in Germany.

Today: Introduced in 23 other European countries.

History of the European Union

2000-today: A decade of further expansion

2004: The EU signs a treaty establishing a European Constitution.
2005: The Kyoto Protocol comes into force.



2004: 10 New Member State – Czech Republic, Cyprus, Estonia, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia, Slovakia.

2007: 2 New Member States – Bulgaria, Romania.

Candidates: Croatia, Macedonia, Turkey.

History in Europe

2000-today: Phasing out of Nuclear Power

1978: Austria
1980: Sweden
1987: Italy
1999: Belgium
2000: Germany

EU Legislation

To make things happen, EU countries set up bodies to run the EU and adopt its legislation. The main ones are:

- the European Parliament (representing the people of Europe);
- the Council of the European Union (representing national governments);
- the European Commission (representing the common EU interest).

European Parliament

- Is elected every five years by the people of Europe.
- Has 785 members from all 27 EU countries (in 2004).
- Passes European laws.
- Holds its main meetings in Strasbourg and Brussels.

Council of the European Union

- Passes European laws and takes policy decisions.
- Holds the main responsibility in foreign and security policy.
- Consists of ministers from the national governments.
- Each country has a number of votes broadly reflecting the size of their population.
- Most decisions are taken by majority vote. Some sensitive issues require unanimity.

European Commission

- Represents and upholds the interests of Europe as a whole.
- Is independent of national governments.
- Commissioners are appointed for five years and do not represent their national governments.
- Drafts proposals for new European laws.
- Manages the day-to-day business of implementing EU policies and spending EU funds.
- Can act against rule-breakers, taking them to the Court of Justice if necessary.
- Headquarter in Brussels, Belgium.

Part 3

Global GHG Emissions

Global GHG Emissions

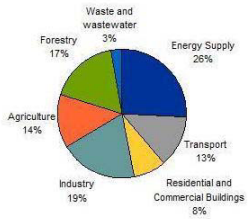
Seven largest emitters:

- U.S., EU, China, Russia, Japan, India, Canada.
- Account for >70% of energy-related CO2 in 2004.

Global GHG Emissions

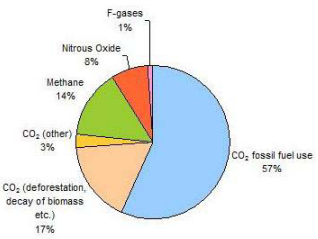
2004, by sector and by gas

Global Anthropogenic GHG emissions by Sector (2004)



Source: IPCC Assessment Report 4 (2007), Summary of Policymakers: Figure SPM 3
*Forestry includes deforestation

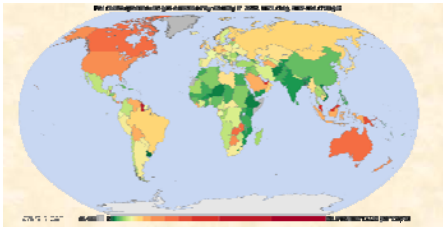
Global Anthropogenic GHG Emissions by Gas (2004)



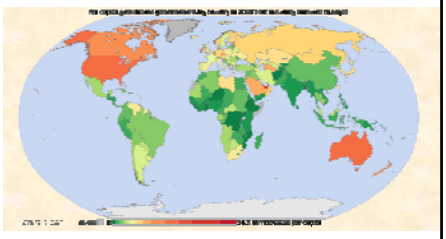
Source: IPCC Assessment Report 4 (2007), Summary of Policymakers: Figure SPM 3

Global GHG Emissions

2000, per capita



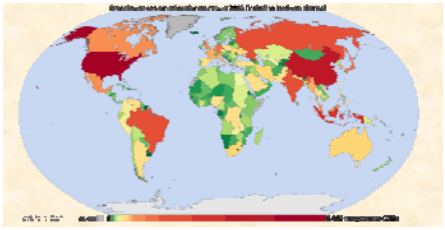
Including land-use change



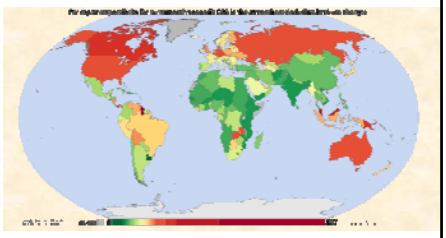
Not including land-use change

Global GHG and CO_2 Emissions

2000 and 1950-2000



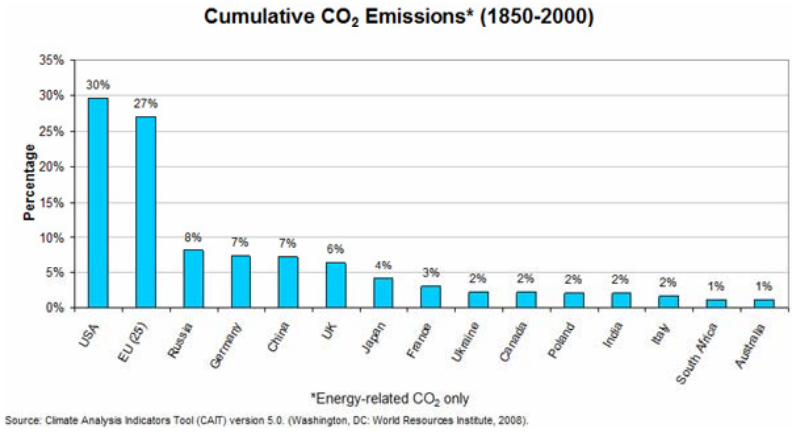
GHG emissions by country



CO2 responsibility 1950-2000

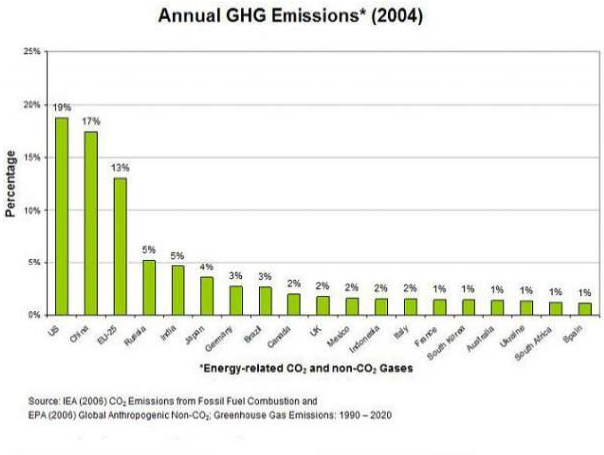
Cumulative CO_2 Emissions

1850-2000 (Energy-related CO_2 only)



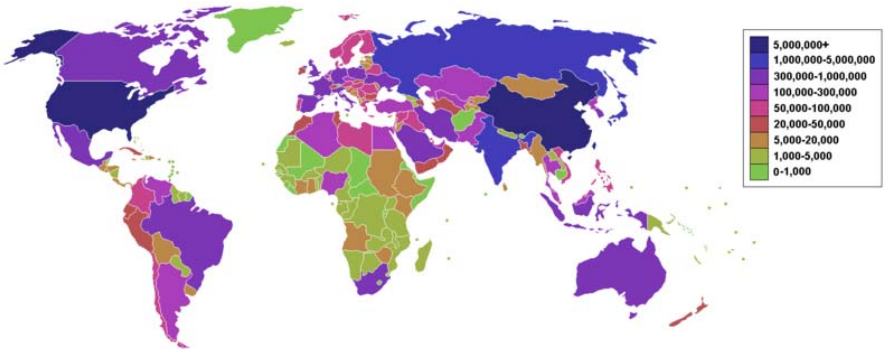
Global CO_2 Emissions

2004, (Energy-related CO_2 only)



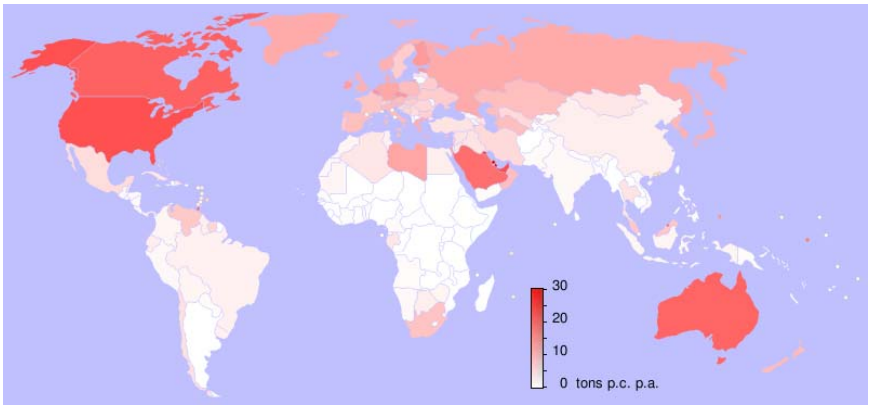
Global CO_2 Emissions

2004, from burning of fossil fuels



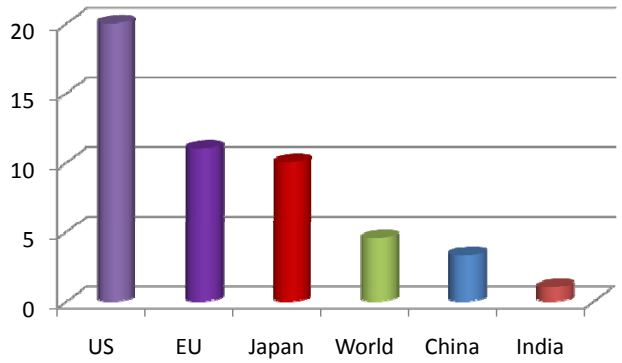
Global CO_2 Emissions

2004, per capita



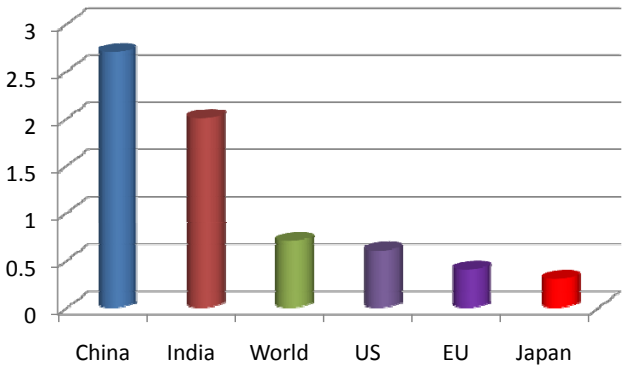
Global CO_2 Emissions

2004, per capita, (Tons of CO_2 per person)



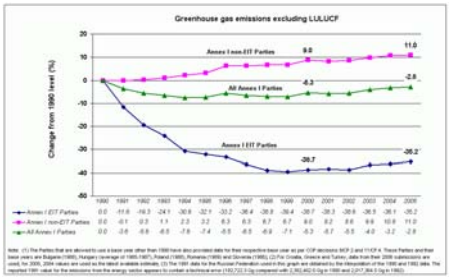
Global CO_2 Intensity

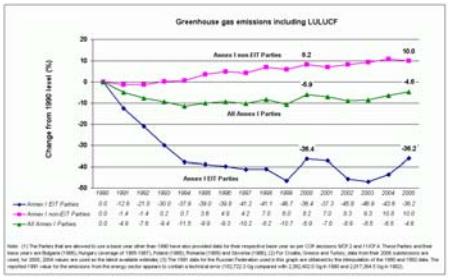
2002, (Tons of CO_2 per $1,000 of GDP)



Trends in GHG Emissions

1990-2005





LULUCF: Land-use, Land-use Change, and Forestry

Annex I Parties: Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania , Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States of America

Annex II Parties:
Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Ne therlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States of America

Global GHG Emissions

Projections against 2004

- Japan -5% by 2010.
- EU steady by 2010.
- U.S. +8% by 2010 and +25% by 2025.
- China +50% by 2025.
- India +80% by 2025.

Climate Action in Japan

- Kyoto target is emission reduction of 6% below 1990 by 2008-2012.
- Agreements with industry to reduce emissions to 1990 by 2010.
- Agreements with electric power companies to reduce emissions intensity by 20% below 1990 by 2010.
- Energy Taxes based in part on carbon content of fuel; portion of revenues used for climate purposes.
- Standards to increase fuel economy on vehicles by 20% by 2010.

Climate Action in China

- Fuel economy standards for new cars and light trucks: 21-43 mpg by 2008.
- Save 960 million barrels of oil and avoid 130 million tons CO2 through 2030.
- Reduction of energy intensity by 68 % from 1980-2000 and by 50% from 2000-2020.

Climate Action in India

- Privatization, decentralization and reduced subsidies in electric power sector to promote competition and improve energy efficiency.
- Using renewable energy for 10% of new power generation by 2010.
- Electrifying 18,000 rural villages by 2012 from non-conventional sources.
- Implementation of rules requiring conversion of taxis, buses and three-wheelers from gasoline and diesel to natural gas in key cities.

Part 4

The EU and Climate Change

The EU and Climate Change

Official European Commission Website

"Climate change is already happening and represents one of the greatest environmental, social and economic threats facing the planet. The European Union is committed to working constructively for a global agreement to control climate change, and is leading the way by taking ambitious action of its own. The warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global mean sea level. The Earth's average surface temperature has risen by 0.76° C since 1850. Most of the warming that has occurred over the last 50 years is very likely to have been caused by human activities."

Climate Change and the Economy

"Stern Review", 2006

By Sir Nicholas Stern, former chief economist f the World Bank

"Stern Review on the Economics of Climate Change"

- One percent of global gross domestic product (GDP) *per annum* is required to be invested in order to avoid the worst effects of climate change, and that failure to do so could risk global GDP being up to twenty percent lower than it otherwise might be.
- Climate change threatens to be the greatest and widest-ranging market failure ever seen, and it provides prescriptions including environmental taxes to minimize the economic and social disruptions.
- "Our actions over the coming few decades could create risks of major disruption to economic and social activity, later in this century and in the next, on a scale similar to those associated with the great wars and the economic depression of the first half of the 20th century."

Impacts in Europe

"Impacts of Europe's Changing Climate", 2008

Main vulnerable areas: mountainous regions, coastal zones, the Mediterranean, and the Arctic.

Annual precipitation changes are worsening differences between a wet Northern part of Europe and a dry South, with some Mediterranean regions receiving 20% less rain than a century ago.

Glacier retreat in Europe's mountain systems, and the changes in temperature and precipitation, will have widespread consequences. Projections show an overall increase of river floods across Europe but an increase in river droughts in the South.

A northward movement of certain fish species —1000 km in the past 40 years—can have adverse effects on fisheries, such as reducing cod stocks in the North Sea.

Impacts in Europe

"Impacts of Europe's Changing Climate", 2008

Spring phytoplankton blooms in lakes are now occurring up to one month earlier than 30-40 years ago, which may favour harmful cyanobacteria threatening human health and ecosystems.

Plants, birds, insects and mammals are moving further north and uphill. By the end of this century, plant species may have shifted several hundred kilometres to the north and up to 60 % of mountain plant species may face extinction.

The agricultural growing season is now longer, especially in the North. Although this may favour the introduction of new crops, crop yields will become more variable because extreme weather events are projected to increase.

Impacts in Europe

"Impacts of Europe's Changing Climate", 2008

Increasing water demand for agriculture in the Mediterranean region will lead to unsustainable competition for water with tourism and households.

The growing season of forests is also changing and the danger of forest fires will increase in southern Europe.

Human health is also significantly affected by climate change. The 70,000 excess deaths reported from 12 European countries in 2003 could be an example of health impacts to come. Climate change increases the frequency and severity of extreme weather events. Projected future effects of heat-waves, floods and droughts, worsening air pollution and changes in vectors and plant distribution are likely to harm the health of many people, if global warming is unconstrained. Health system will need to be strengthened and action will need to be taken for particular vulnerable people, like the elderly, children or disadvantaged populations.

Impacts in Europe

"Impacts of Europe's Changing Climate", 2008

Call for:

- Pro-active adaptation measures.
- Improved monitoring and reporting of data.
- More spatial and socio-economic scenarios.
- Better information on vulnerability.

Impacts in Germany by 2100

Increase of temperature of 0.9° C in last 100 years (0.7 ° C globally); 1.5 ° C in the Alps.

Increase of temperature of up to 4 ° C.

Up to 30% less summer precipitation → more and stronger heat waves and droughts.

Up to 30% more winter precipitation → more and higher floods in spring.

Total melting of all Alps glaciers possible → flooding and water scarcity.

Air Pollution Initiatives

1979: Geneva Convention on Long Range Transboundary Pollution set targets to reduce acidic emissions. Since its implementation, sulphur emissions across Europe have fallen significantly, but with the increase in road traffic there has hardly been any effect on nitrogen oxide emissions.

1987: Montreal Protocol set targets and deadlines for the reduction of gases that are dangerous to the ozone layer. As a result, CFCs - the most harmful ones - have virtually gone out of use in the EU.

1992: At the 'Earth Summit' in Rio, Brazil, the EU supported the UNCCC, establishing the principle of 'sustainable development'.

1996: The Auto Oil Programme was launched, setting out stricter energy standards for private cars.

Air Pollution Initiatives

1997: At Kyoto in Japan, the EU promised, by the year 2010, to reduce emissions of sulphur dioxide by 50% and of ammonia by 30%, compared to 1990 levels.

2001: Clean Air For Europe (CAFE) programme was launched, with the aim of finding ways to stop air pollution from damaging human health and the environment.

2005: EU launched a clean air strategy to reduce air pollution in Europe. It aims, by 2020, to cut the annual number of premature deaths from air pollution-related diseases by almost 40% from the 2000 level. It also aims to reduce the area of forests and other ecosystems suffering damage from airborne pollutants. The Strategy pays special attention to fine dust, also known as particulates, and ground-level ozone pollution, as these pose the greatest danger to human health.

The EU and the Kyoto Protocol

- **1991**: Participation in negotiations of UNFCCC.
- **1993**: Ratification of Framework Convention.
- **1994**: Framework Convention comes into force. Target is reduction of emissions to 1990 levels in industrialized countries.
- **1997**: Kyoto Protocol.
- **1998**: EU-15 signs Kyoto Protocol.
- **2001**: EU-15 ratifies Kyoto Protocol.

European Climate Change Program

1991: First strategy to limit CO2 and improve energy efficiency.

2000: First European Climate Change Program (ECCP I). EU works with industry, environmental organizations and other stakeholders to identify cost-effective measures to reduce emissions. More than 30 measures have been put in place.

2005: Second European Climate Change Program (ECCP II). The focus is on developing proposals to strengthen the EU ETS, tackling emissions from aviation and passenger road transport, developing carbon capture and storage technology and identifying measures to adapt to the inevitable effects of climate change.

Solutions

- EU Greenhouse Gas Emission Trading Scheme (EU ETS) was established in 2005 as the largest multi-country, multi-sector GHG emission trading scheme world-wide. Emissions Trading Directive allows operators to use credits.
- Greenhouse Gas Emissions Allowance Trading Scheme: limitation of total CO2 emissions from ~ 10,500 power plants and energy-intensive factories.
- Landfill of Waste Directive to reduce amount of waste sent to landfills and the methane production.

Solutions

- Intelligent Energy for Europe Program with a focus on renewable energy and energy sustainability.
- Renewable Electricity Directive to increase share of renewables in electricity supply to 21% in 2010 (from 14% in 1997).
- Biofuels Directive with target of 5.75% share.
- Agreement with Automakers to reduce CO2 emissions of new cars by 25% from 1995 levels by 2008-2009.
- Community Tax Framework to encourage more efficient energy use and to enable adoption of "carbon tax".

Emission Trading Scheme (ETS)

Limitation of emissions from ~ 10,500 industrial facilities across Europe that together produce ~ 50% of EU's CO2 emissions.

Large CO2 emitters must monitor and annually report their emissions; obliged every year to return an amount of emission allowances to the government that is equivalent to their CO_2 emissions in that year. Emission allowance prices between 7 and 30 Euros.

Excess emissions in 2008-2012 incur penalty (100 Euro per ton CO2) and must be made up in next phase.

Will continue beyond 2012 with or without new international climate agreements.

Emission Trading Scheme (ETS)

Operators may reassign or trade allowances by several means:

- privately, moving allowances between operators within a company and across national borders.
- over the counter, using a broker to privately match buyers and sellers.
- trading on the spot market of one of Europe's climate exchanges (the most liquid being the European Climate Exchange). Like any other financial instrument, trading consists of matching buyers and sellers between members of the exchange and then settling by depositing an allowance in exchange for the agreed financial consideration. Much like a stock market, companies and private individuals can trade through brokers who are listed on the exchange.

The EU and the Kyoto Protocol

Press Release, 16 October 2008

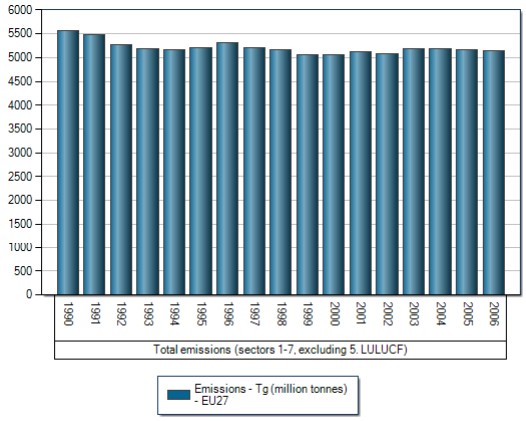
"Climate change: projections show EU on track to meet Kyoto emission targets"

Projections for EU-15 and EU-27

- EU-15 greenhouse gas emissions in 2006 were 2.7% lower than 1990. This contrasted with economic growth of around 40% over the same period. For the EU-27 as a whole, emissions fell by 10.8% between 1990 and 2006.
- Existing policies and measures – those already implemented – are expected to reduce EU-15 emissions to 3.6% below 1990 levels by 2010.

Total GHG Emissions 1990-2006

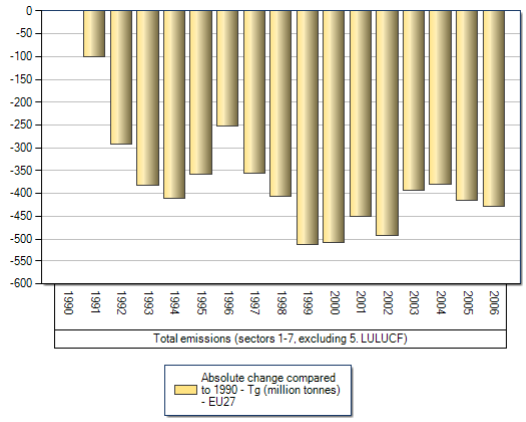
(CO_2 Equivalent)



~ 14% of global GHG emissions; 20% from transport sector

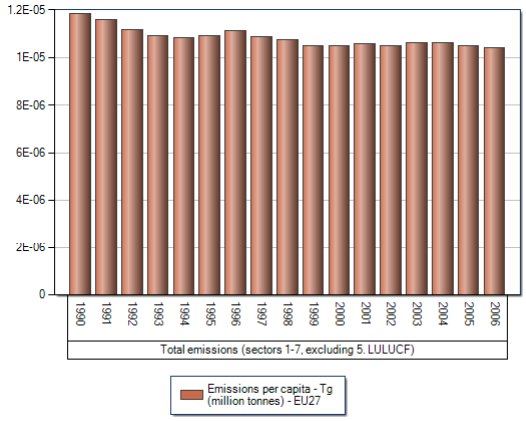
Total GHG Emissions 1990-2006

Change compared to 1990 (CO_2 Equivalent)



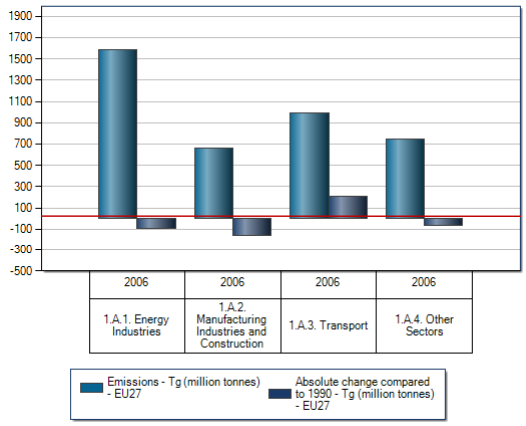
Total GHG Emissions 1990-2006

per capita (CO_2 Equivalent)



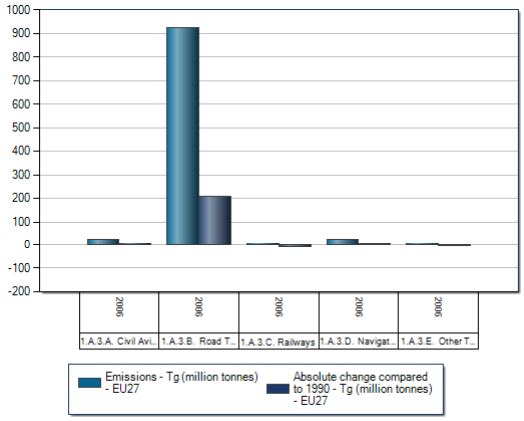
GHG Emissions 2006 vs. 1990

by sector (CO_2 Equivalent)



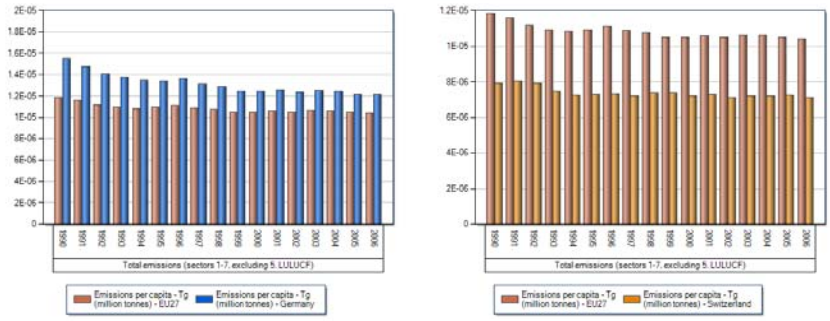
GHG Emissions 2006 vs. 1990

Transportation (CO_2 Equivalent)



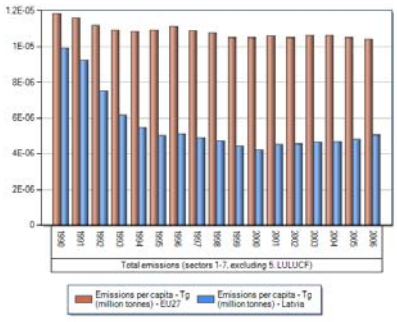
Total GHG Emissions 1990-2006

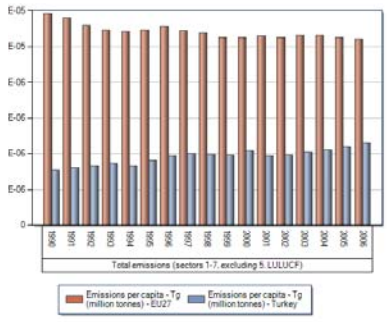
per capita, Germany vs. Switzerland (CO_2 Equivalent)



Total GHG Emissions 1990-2006

per capita, Latvia vs. Turkey (CO_2 Equivalent)





The EU and the Kyoto Protocol

2008-2012

EU-15 must reduce emissions by 8% compared to base year 1990. Some member states defined domestic targets beyond the Kyoto target in addition. No collective target for EU-27. Ten out of twelve new member states have individual commitments to reduce emissions to 6-8% below base level.

(**2008-2012**: continuing)

- Plans by 10 of the EU-15 member states to buy credits from emission-saving projects carried out in third countries would bring a further reduction of 3%, taking the cut to 6.6%.
- Aforestation and reforestation activities, which create biological 'sinks' that absorb carbon dioxide from the atmosphere, would contribute an additional cut of 1.4% taking the overall reduction to 8% and thus delivering on the EU's Kyoto commitment.
- Additional policies and measures currently under discussion in 10 member states would, if fully implemented, bring further cuts of up to 3.3%, giving a broad safety margin for achieving the 8% reduction target.
- Furthermore, member states have not fully factored into their projections the limits on emission allowances fixed for the 2008-2012 trading period of the EU Emissions Trading System. It is estimated that for the EU-15 this cap will deliver a 3.3% emissions reduction below base year levels.

Projected Emissions in 2010

(compared with 1990)

Member state	Kyoto Base Year (BY) emissions	Kyoto targets	Projections for 2010	Gap between projections and target
	$MtCO_2$	% of BY	% of BY	% of BY
Bulgaria	132.6	-8.0%	-34.9%	-26.9%
Estonia	42.6	-8.0%	-65.7%	-57.7%
France	563.9	0.0%	-4.2%	-4.2%
Germany	1232.4	-21.0%	-26.2%	-5.2%
Italy	516.9	-6.5%	-4.6%	+1.9%
Luxembourg	13.167	-28.0%	-28.0%	0.0%
Poland	563.4	-6.0%	-29.0%	-23.0%
Spain	289.8	+15.0%	+20.5%	+5.5%
Sweden	72.2	+4.0%	-5.7%	-9.7%
EU-15	**4265.5**	**-8.0%**	**-11.3%**	**-3.3%**
EU-27	**5768.0**	**na**	**-16.3%**	**na**

The EU and Post-Kyoto

after 2012

With the Kyoto Protocol targets due to expire in 2012, the EU is pressing for a new international agreement to ensure that global warming is stopped before it exceeds the temperature in pre-industrial times by more than 2°C. Scientists view a 2°C rise as the threshold beyond which climate change could trigger irreversible and possibly catastrophic planetary changes.

The EU and Post-Kyoto

after 2012

2006: "Bali Roadmap" describes activities for implementation of a post-Kyoto agreement.

2007: "Energy Policy for Europe"; EU will cut its greenhouse gas emissions to at least 20% below 1990 levels by 2020, and will increase this reduction to 30% if the other industrialized countries (particularly, the U.S.A.) agree to do likewise and developing countries also take action. EU agreed on reduction by 60-80% until 2050.

The EU and Post-Kyoto

after 2012

To achieve this cut of at least 20%, existing measures such as the EU ETS will be supplemented by

- new measures aimed in particular at boosting energy efficiency 20% by 2020,
- increasing the share of renewable energy sources to 20% by 2020,
- and equipping new power stations with carbon capture and storage technology.

The EU and Post-Kyoto

after 2012

2007: G8 meeting in Heiligendamm; global goal: reduction by 50% until 2050 "should be seriously discussed"; China and India should be included; acceptance of all three IPCC reports.

2008: Negotiations about post-Kyoto agreement in Poznan.

2009: Planned adoption of post-Kyoto agreement in Kopenhagen.

The EU and Post-Kyoto

after 2012 - Reactions

Many EU member states expressed concerns about EU Parliament 's vote for using profits from emission trade exclusively for climate protection activities/initiatives.

Italy against stricter conditions.

Germany against stricter CO2 emission limit (120 g/km) for new cars in 2012 (Germany: 2015).

Part 5

The U.S. in the view of the EU

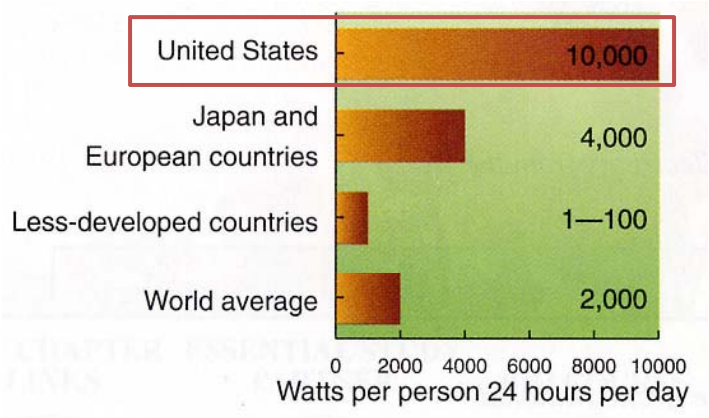
Energy Consumption

per capita per year

Region	Energy Consumption per Capita per Year (in tonnes of oil equivalent)
Africa	0.32
Latin America	0.67
Japan	3.72
France	4.05
Germany	4.11
Canada	7.63
United States	7.86

Energy Consumption

per capita per day

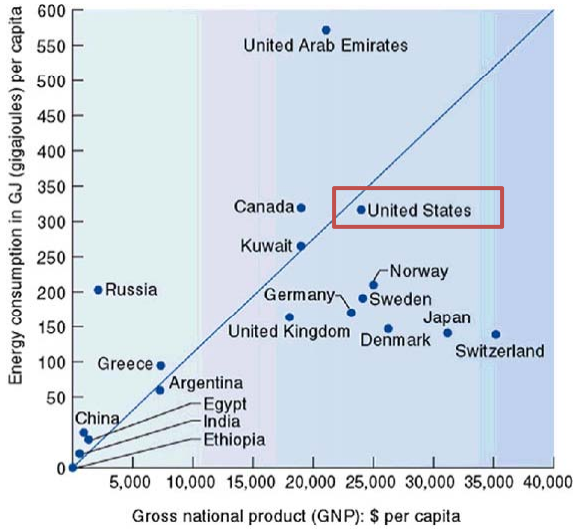


Energy Use for Transportation

in gigajoules per capita

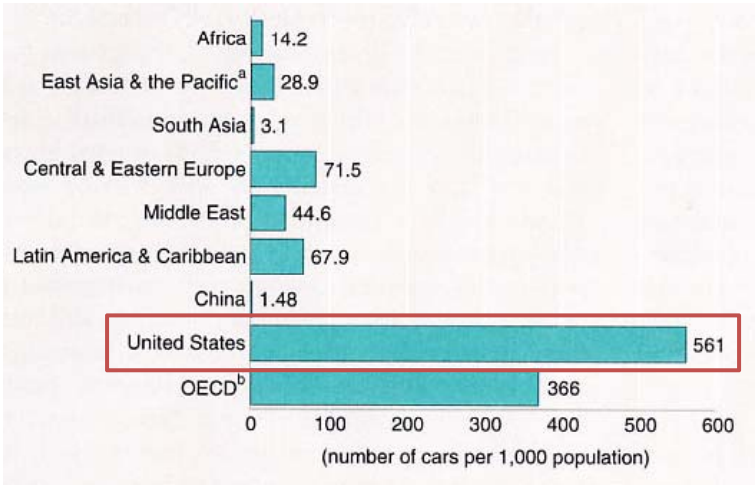
Country	Energy Use in Gigajoules/Capita
India	2
Zimbabwe	4
Mexico	17
Argentina	18
Russia	26
Japan	28
Netherlands	41
Denmark	43
Australia	86
United States	105

Energy Consumption and GDP



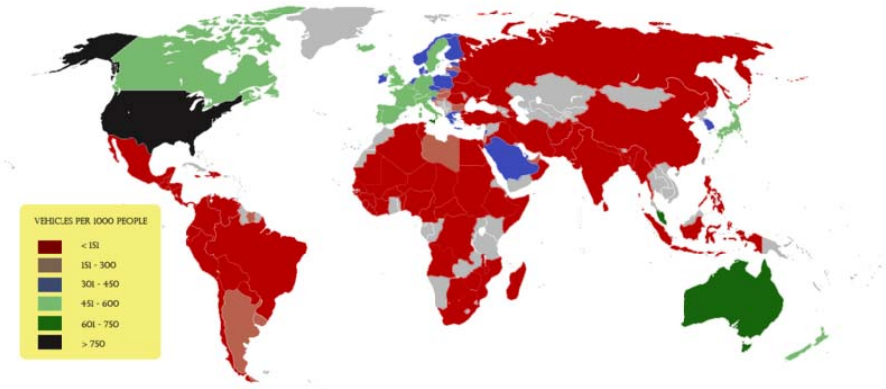
Passenger Cars and Population

Vehicles per 1,000 people



Passenger Cars and Population

Vehicles per 1,000 people



US-Americans and Their Cars

- 35 % of all cars and trucks in the world in 1999 (= 212 million vehicles).
- 2 trillion miles per year – as much as the rest of the world combined.

Transportation Mode for Land-based Trips

	Europe	U.S.A.	World
Walking/Bicycling	40-50 %	2 %	
Mass Transit	10 %	3 %	
Automobile	40-50 %	95 %	10 %

U.S. and Communitarian Values

U.S. history does not provide an unfettered tradition of libertarian values, but rather it provides an understanding of individual freedoms as being constraint by community concerns.

Wrong interpretation of liberalism has fostered the evolution of communities without shared values.

(from K.E. Portney, 2003, "Taking Sustainable Cities Seriously")

U.S. Environmentalism

20th century

First Wave (1901-1909): T. Roosevelt; National Conservation Commission

Second Wave (1930s): F. Roosevelt; "Dust Bowl"; Alice Hamilton; Aldo Leopold

Third Wave (1960-1980): Nixon, Ford, Carter; Rachel Carson; Paul Ehrlich; "Earth Day"; Clean Air Act; Environmental Protection Agency (EPA)

Fourth Wave (1980-2000): Clinton and Gore; Sustainable Revolution?; Lester Brown; Worldwatch Institute; "Earth Summit" in Rio de Janeiro; "Agenda 21"

U.S. Environmentalism?

20th century

Bush, G.H.W. (sen.) Administration: President Bush attends Rio, but is against any deadlines.

Clinton Administration: Vice-President Gore attends Kyoto and signs the willingness for ratification, but is against any deadlines.

Bush, G.W. (jun.) Administration: Leaves Kyoto Protocol. Secretary of State attends Johannesburg.

U.S. Clear Sky Initiative

- Presented as the Bush administration's climate change plan in Feb 2002.
- Reducing its "greenhouse gas (GHG) intensity" 18% over the next 10 years. GHG intensity is the ratio of greenhouse gas emissions to economic output.
- The goal is to lower the rate of emissions from an estimated 183 mt per million dollars of GDP in 2002 to 151 mt in 2012. In other words, emissions would continue to increase as the economy grows, but at a slower rate than would be the case in a "business-as-usual" scenario.

U.S. Clear Sky Initiative

White House:

"By significantly slowing the growth of greenhouse gases, this policy will put America on a path toward stabilizing GHG concentrations in the atmosphere in the long run, while sustaining economic growth."

House Democratic Leader Richard Gephardt (Missouri):

"Simply translated, its goal is to slow the growth in greenhouse gas emissions. I remind the administration that the global objective is to cut greenhouse gas emissions."

Clear Sky Initiative

Reactions from Europe

- EU Environment Commissioner Margot Wallstrom said Bush's policy could lead the United States to break a long-standing commitment to stabilize greenhouse emissions. "It seems that President Bush's proposals will not lead to a reduction of greenhouse gas emissions but allow a significant increase. This raises the question whether the U.S. will be able to meet its commitments under the U.N. Framework Convention on Climate Change," Wallstrom said.
- German Environment Minister Juergen Trittin echoed the sentiment of many pro-Kyoto countries by welcoming the long-awaited announcement of a U.S. policy on global warming, but decrying its content. "I welcome the fact that with this program President Bush has recognized the need for measures to tackle climate change; however at first glance the contents look disappointing," he said.

Clear Sky Initiative

Reactions from Europe

- Chris Hewett, of Britain's Institute for Public Policy Research, said: “In climate change terms (setting efficiency targets) is nonsense, it won't help at all. The science is absolutely clear that we have to reduce emissions (…) Britain has proved that you can cut emissions and still have a very healthy economy. There is no inextricable link between CO2 emissions and economic growth.”
- “It's really shocking...it's a bit like saying: 'wealth is for us today in 2002 and we will leave the problems for our children or for people in Africa or Asia',” said Belgium's Green Party Energy Minister Olivier Deleuze. Deleuze led the European Union delegation at talks last year which secured support from most of the rest of the world to push on with Kyoto without the United States. “It's a policy that's not very moral, I feel,” he said.

America – where did all your values go?