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EUROPEAN UNION: PERSPECTIVES ON CLIMATE CHANGE

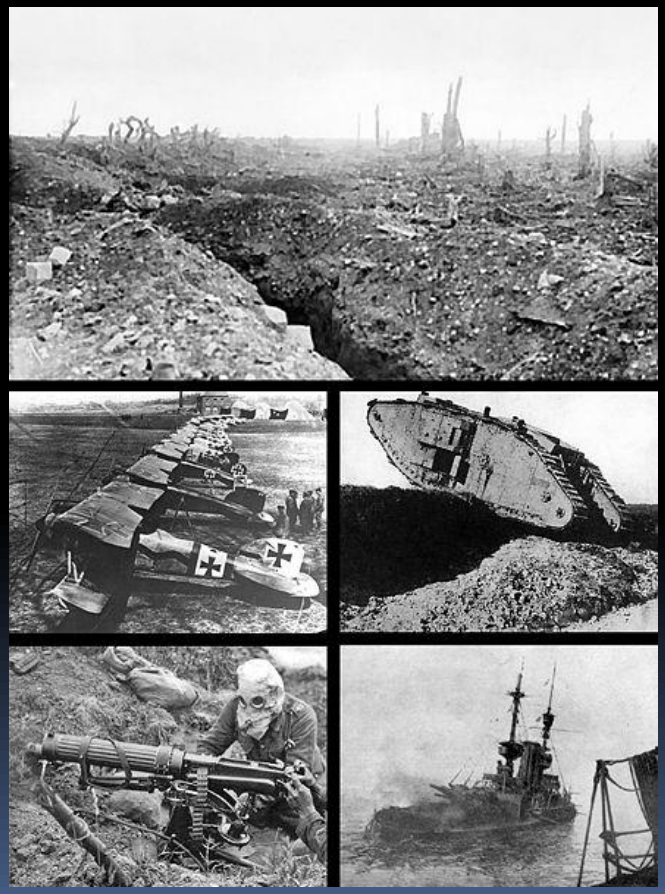
PART 1
WHAT IS THE EUROPEAN UNION?

What is the European Union?

A unique economic and political partnership between 28 democratic European countries with 507 million citizens and 24 languages.

Enough!

The “Pre-History” of the European Union



History of the European Union

From 6 to 28

PART 2
ENVIRONMENTAL AWARENESS IN THE EU

“Green” History in Europe

1970s: Oil Crisis; “Acid Rain”; Greenpeace

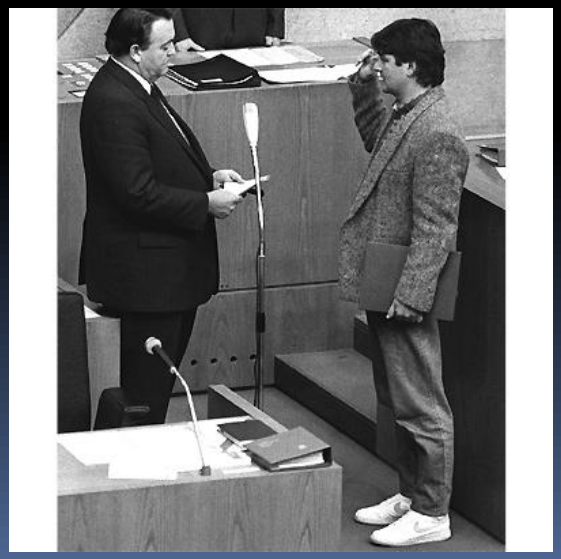
GREENPEACE

THE CLUB OF ROME

“Green” History in Europe

1980s: “The Greens”

BÜNDNIS 90
DIE GRÜNEN



1980: Foundation

Since 1983: Part of German Parliament

1998-2005: Part of German Government

“Green” History in Europe

1990s: “The Green Dot”

1990: Introduction of Dual Waste Management System in Germany.

Today: Introduced in 23 other European countries.

“Green” History in Europe

2000s: Phasing out of Nuclear Power

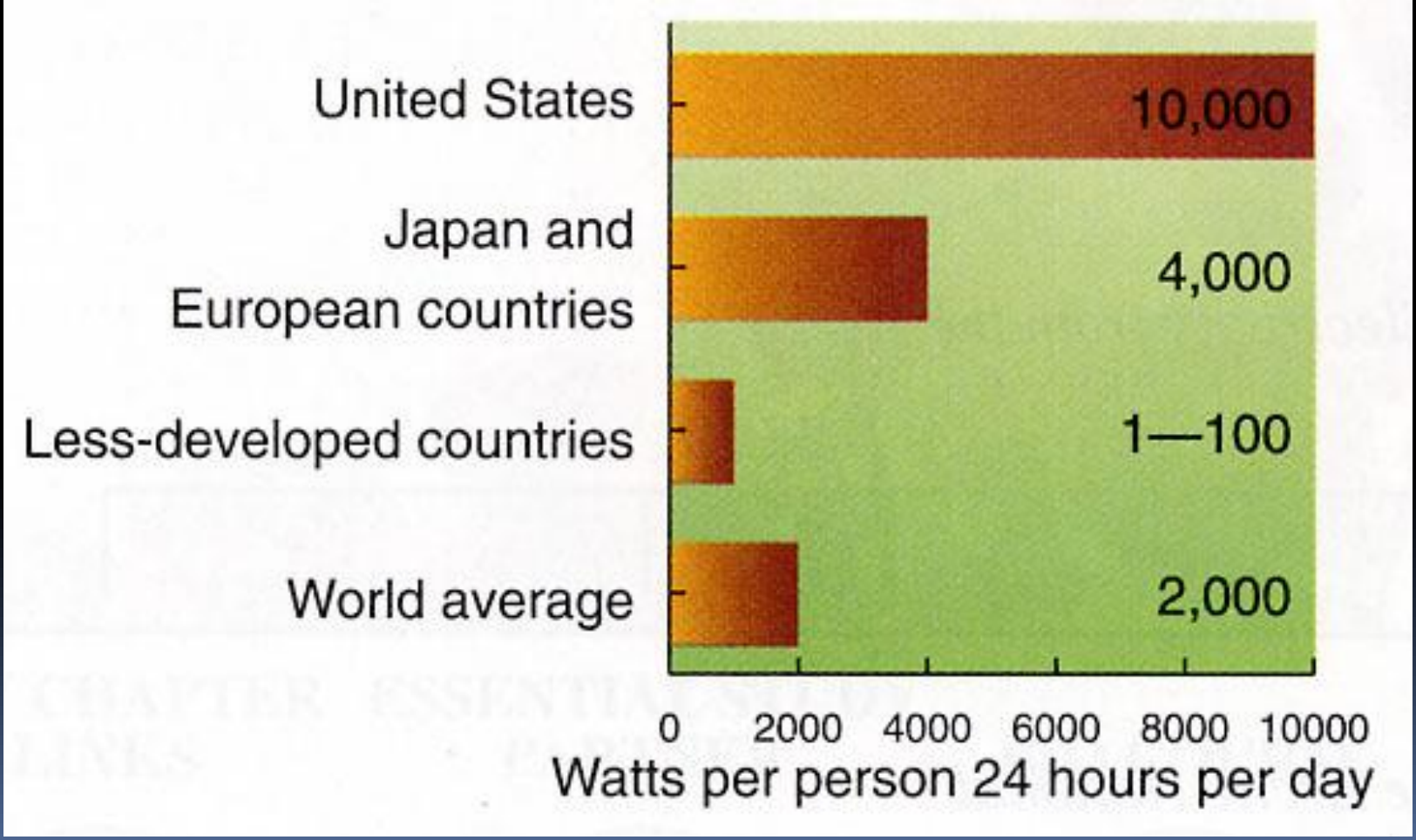
1978: Austria
1980: Sweden
1987: Italy
1999: Belgium
2000: Germany

Germany: A “Green Nation”

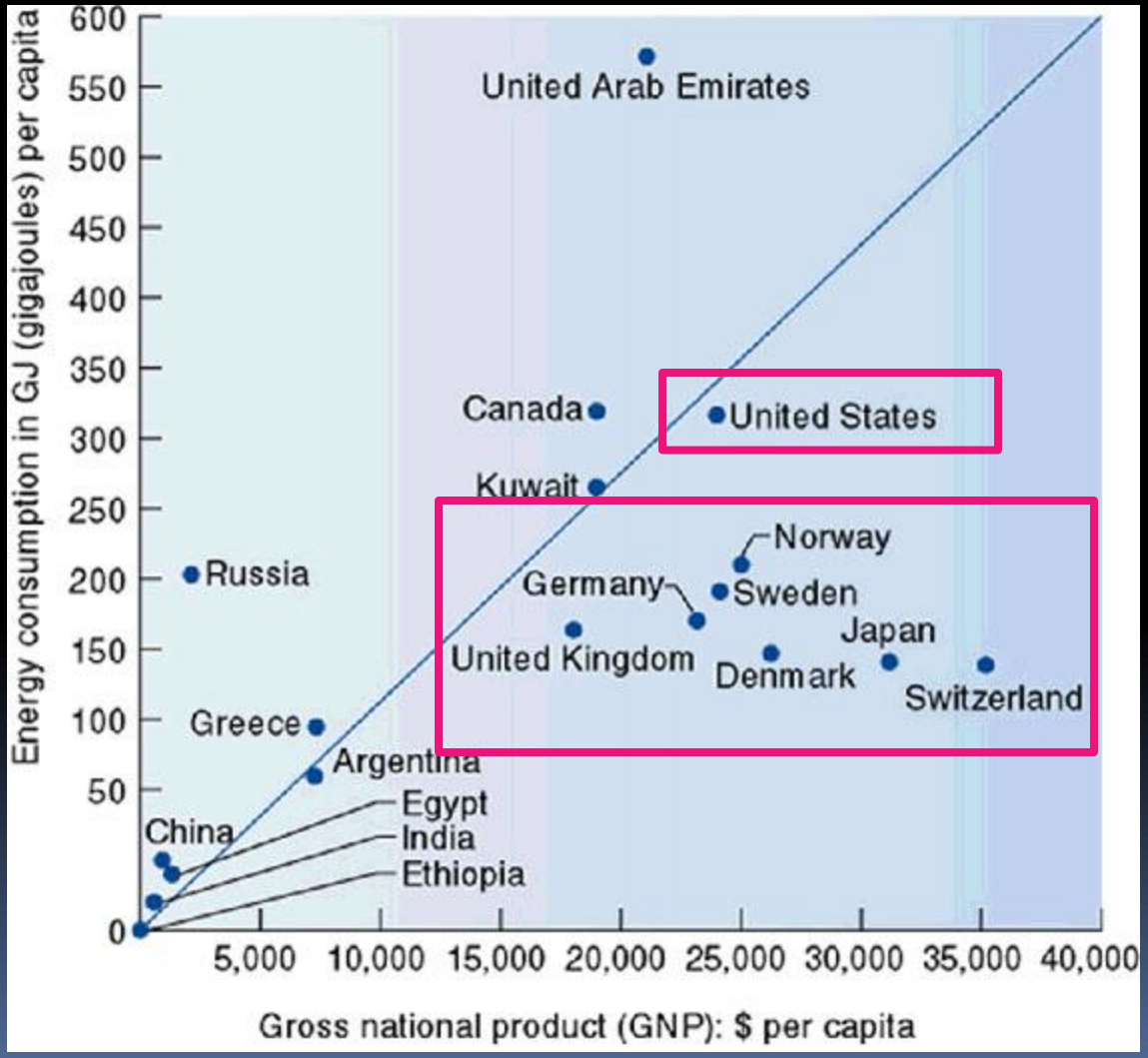
http://www.thesolutionsjournal.com/node/981

PART 3
RESOURCE CONSUMPTION IN THE EU

Energy Consumption
per capita per day



Energy Consumption and GDP

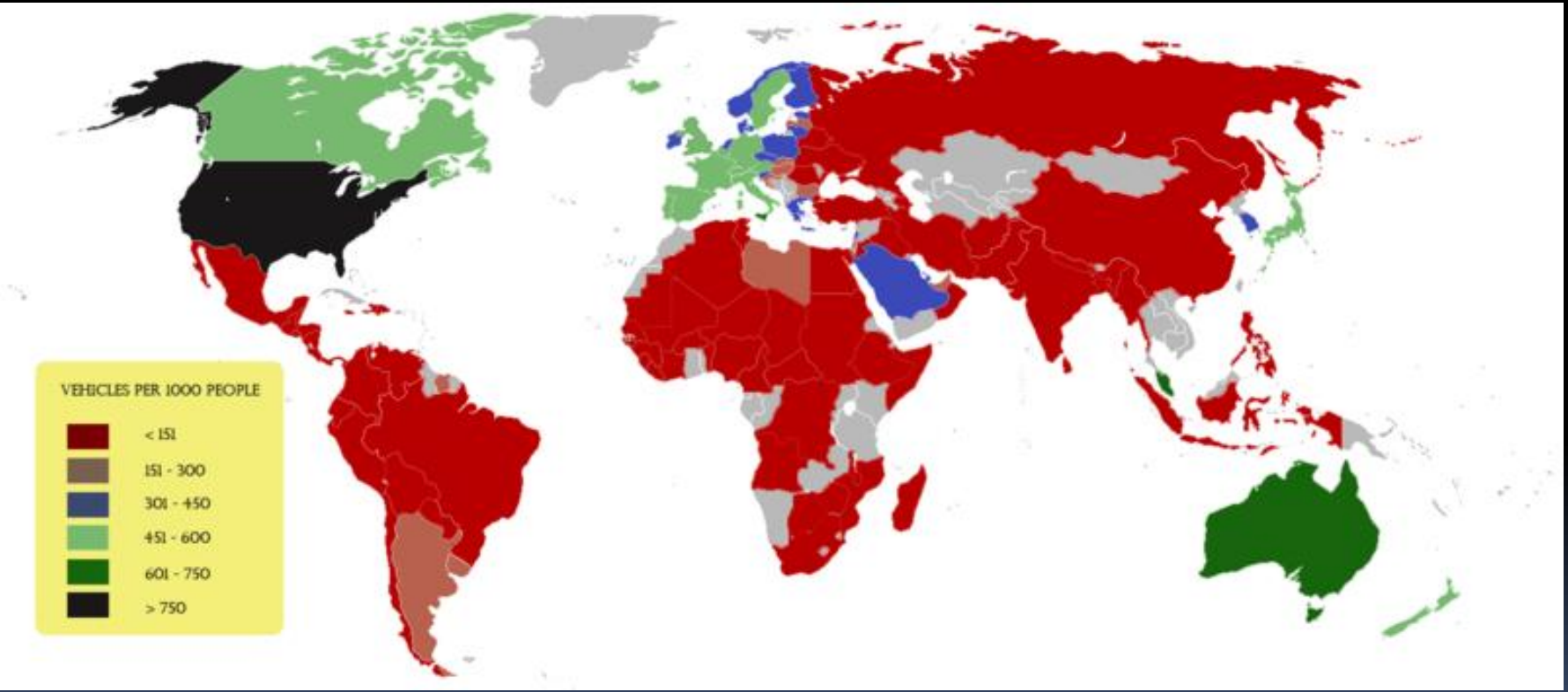


Energy Use for Transportation
in gigajoules per capita

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

Passenger Cars and Population

Vehicles per 1,000 people

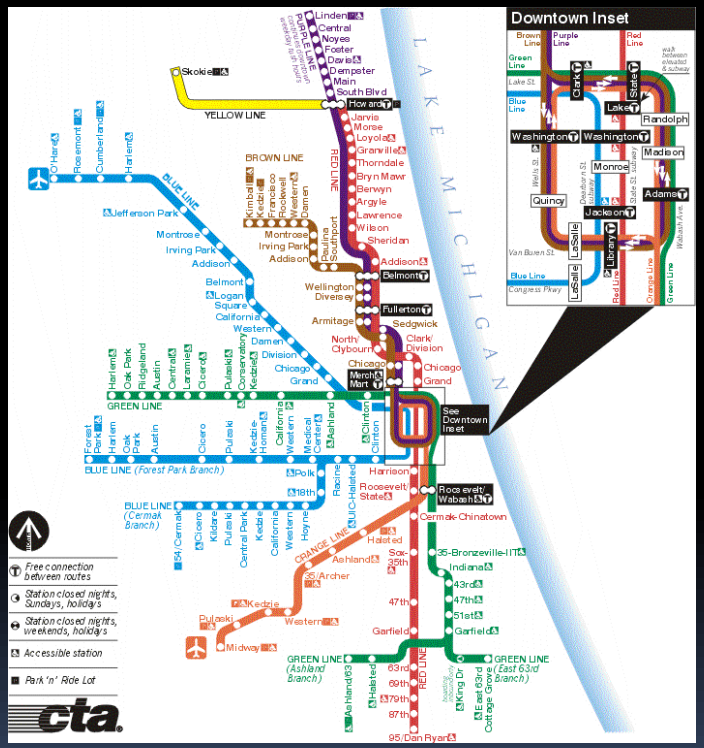


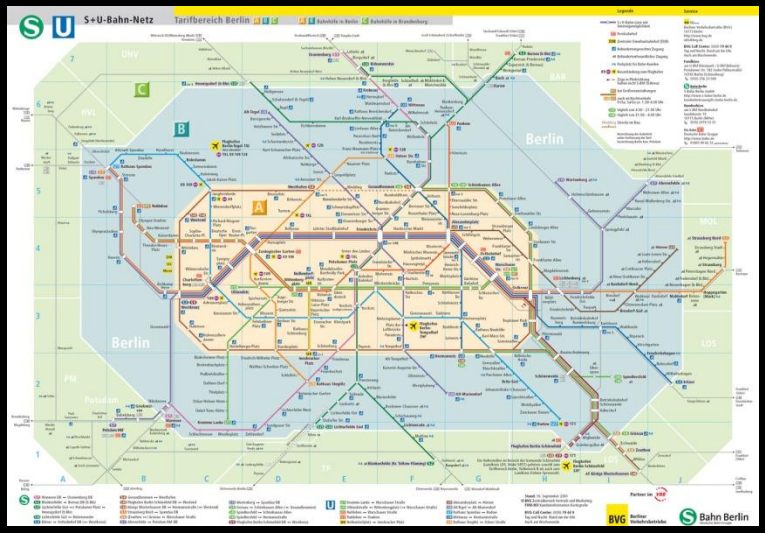
Transportation Mode for Land-based Trips

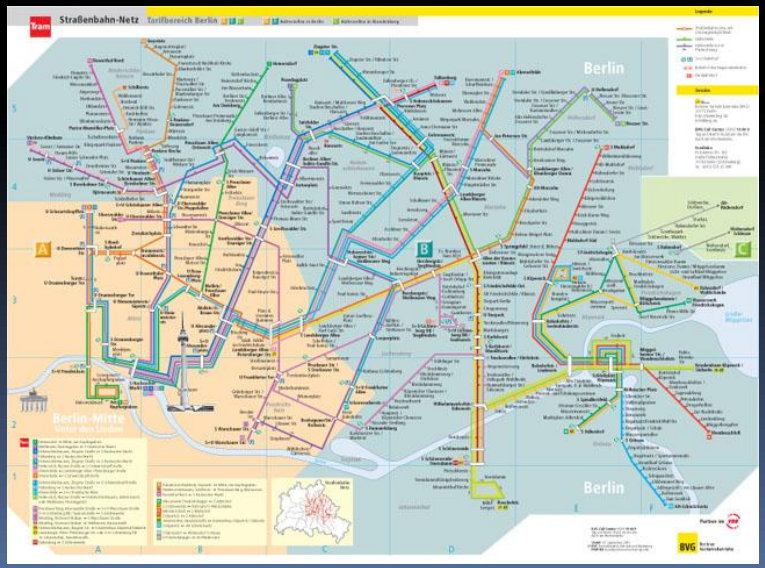
	Europe	U.S.A.	World
Walking/Bicycling	40-50 %	2 %	
Mass Transit	10 %	3 %	
Automobile	40-50 %	95 %	10 %

Subway/Streetcar Networks

Chicago vs. Berlin







PART 4
EU’S GHG EMISSIONS

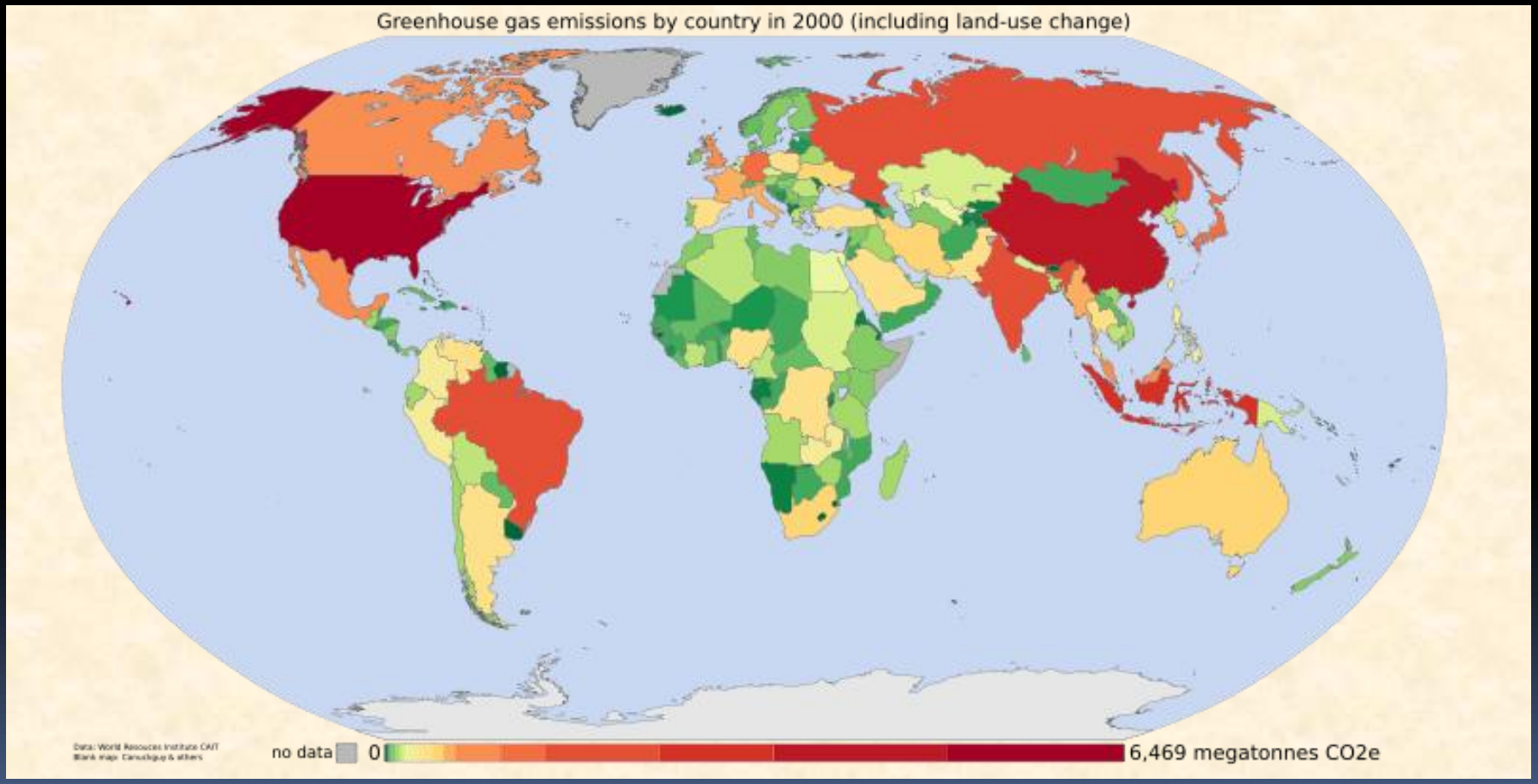
Global GHG Emissions

Seven largest emitters:

- U.S., EU, China, Russia, Japan, India, Canada.
- Account for >70% of energy-related CO_2 in 2004.

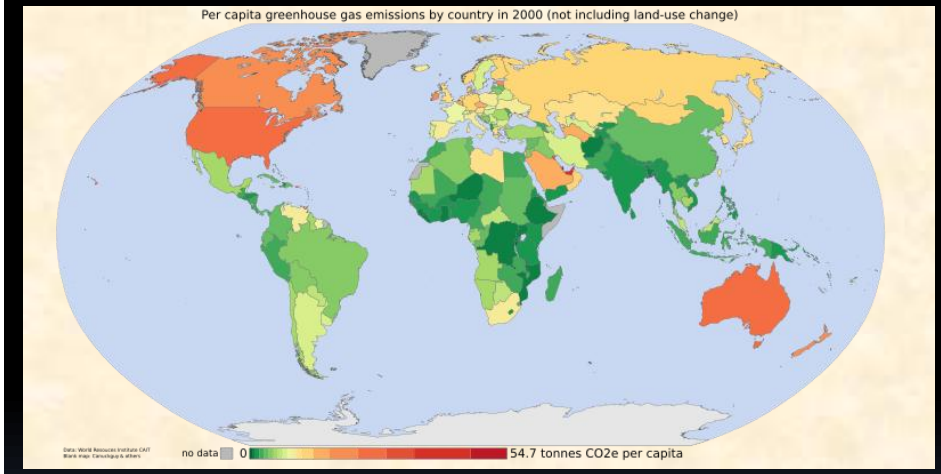
Global CO_2 Emissions

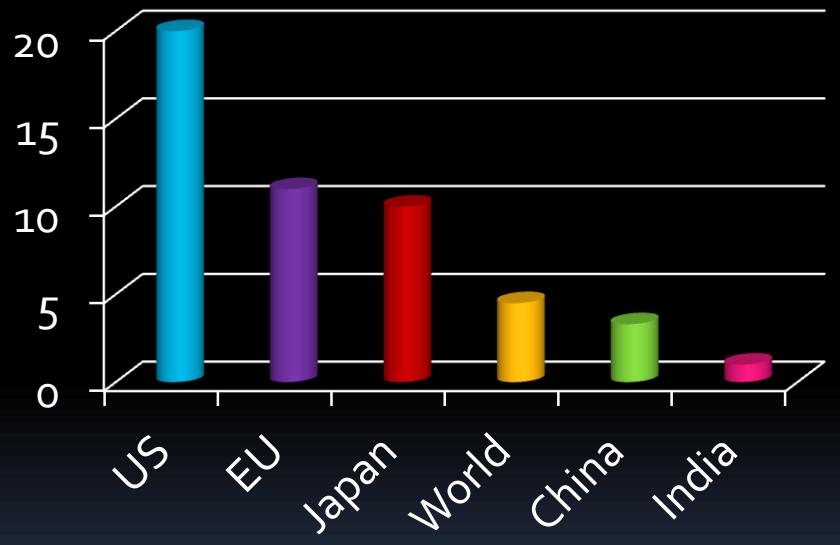
Megatonnes by country



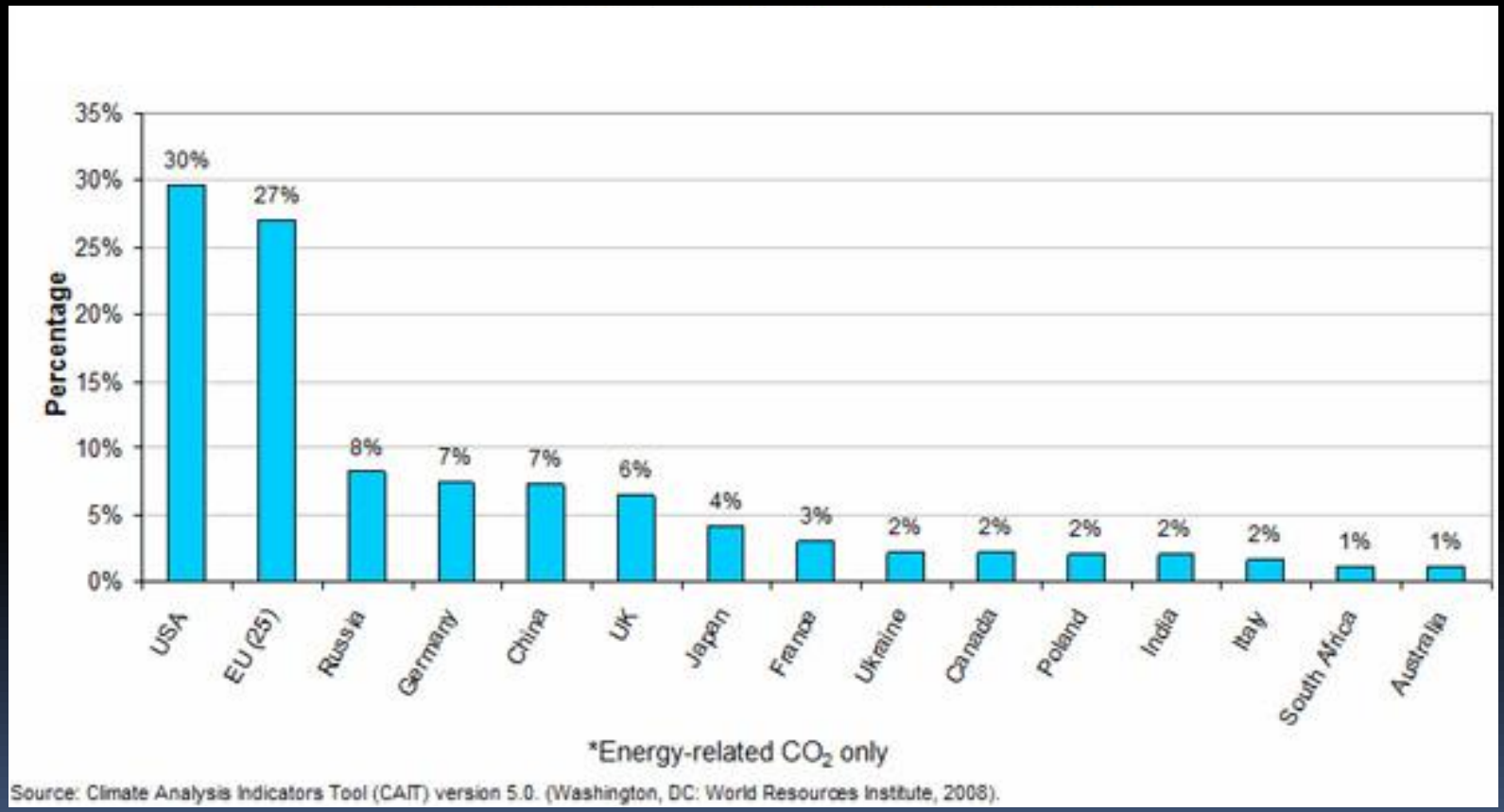
Global CO_2 Emissions

Tons of CO_2 per capita





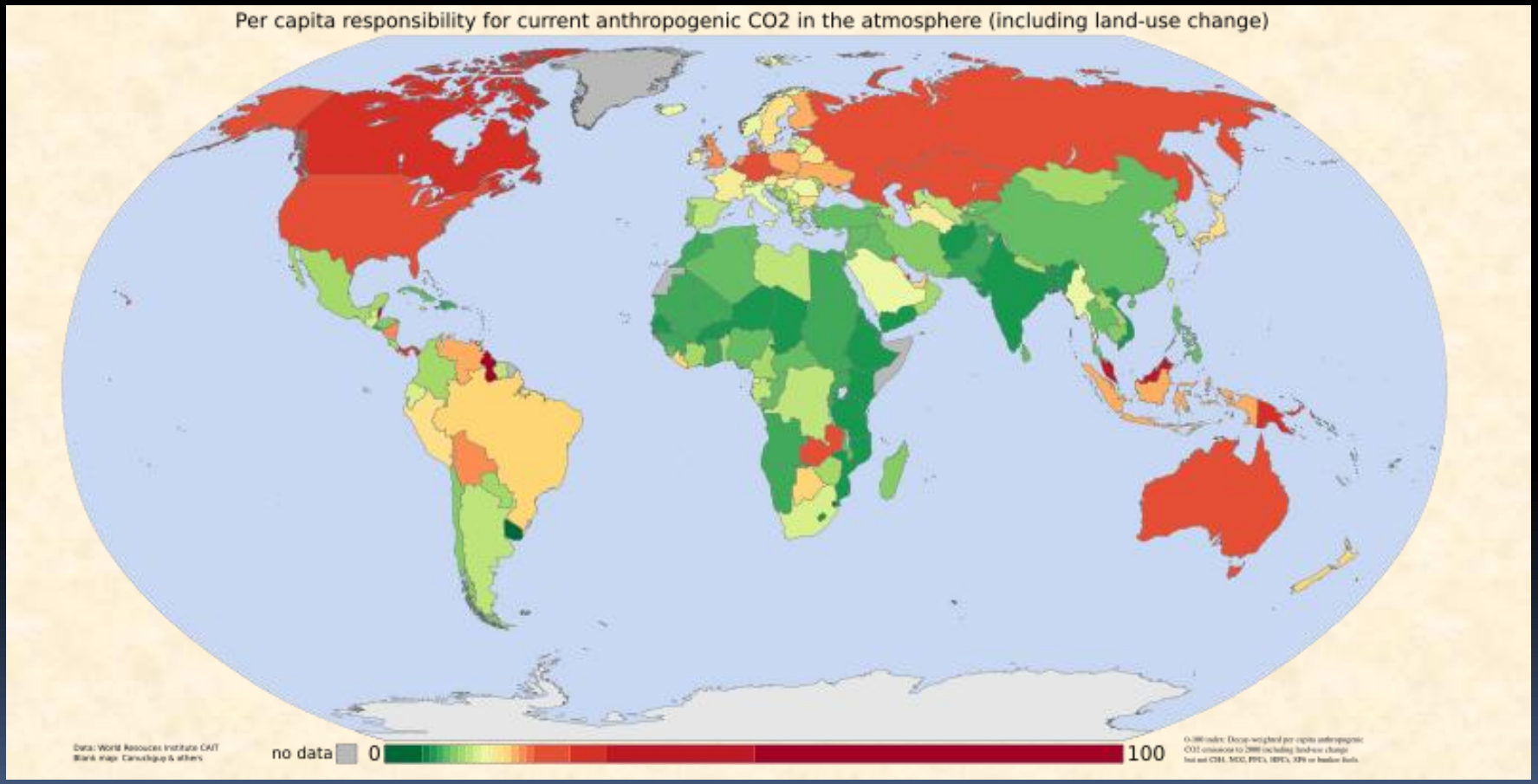
Cumulative CO_2 Emissions
1850-2000 (Energy-related)



Source: Climate Analysis Indicators Tool (CAIT) version 5.0. (Washington, DC: World Resources Institute, 2008).

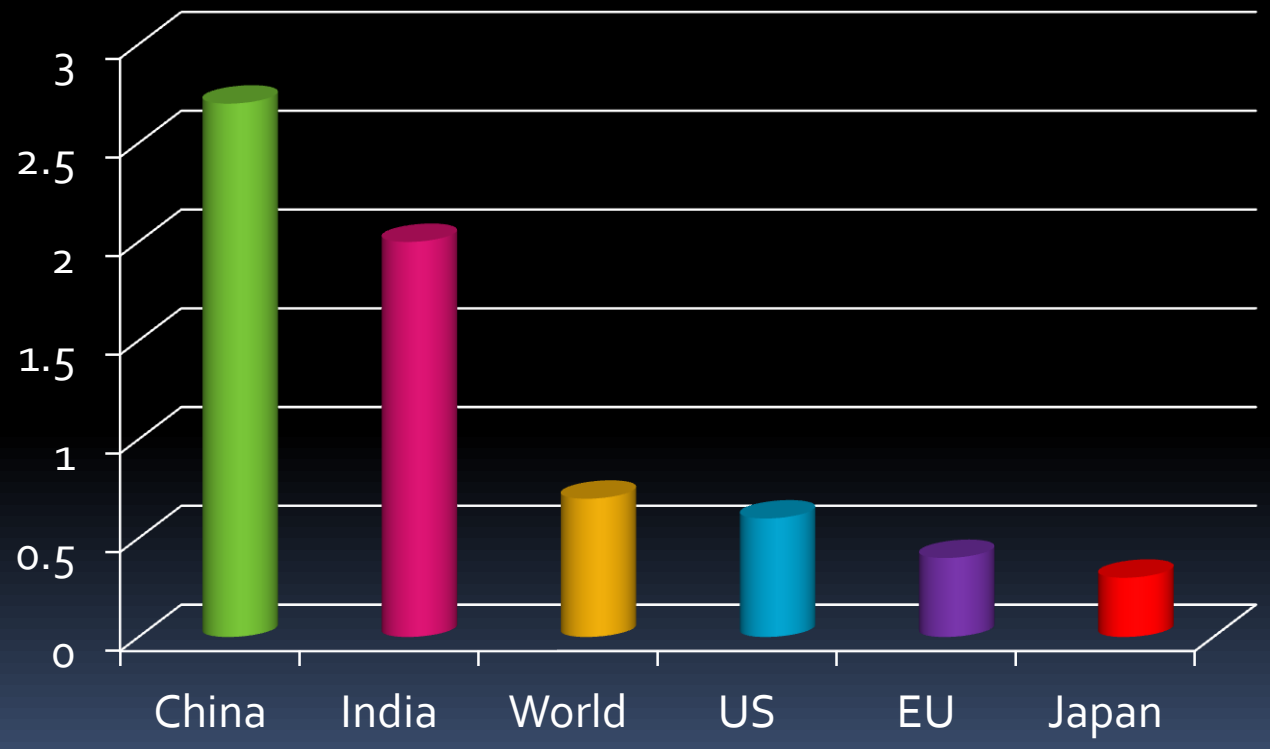
Cumulative CO_2 Emissions

1950-2000, per capita responsibility



Global CO_2 Intensity

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



PART 5
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 Impacts in EU

- Many mountain plant species may face extinction.
- Increasing water demand for agriculture.
- Glacier retreat.
- Extreme weather events are projected to increase.
- Human health is also significantly affected.

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.

Climate Change Initiatives

1979: Geneva Convention
1987: Montreal Protocol
1991: First strategy to limit CO_2 and improve energy efficiency
1992: 'Earth Summit', Rio
1997: Kyoto Protocol.
1998: EU-15 signs Kyoto Protocol.
2000: European Climate Change Program (ECCP I)
2001: EU-15 ratifies Kyoto Protocol.
2001: Clean Air For Europe (CAFE) programme
2005: European Climate Change Program (ECCP II)
2005: Clean Air Strategy

EU calls for…

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

Solutions

- EU Greenhouse Gas Emission Trading Scheme (EU ETS).
- Greenhouse Gas Emissions Allowance Trading Scheme.
- Landfill of Waste Directive.
- Intelligent Energy for Europe Program.
- Renewable Electricity Directive.
- Biofuels Directive.
- Agreement with Automakers.
- “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 (per ton CO2).
- 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).

PART 6
EU AND THE KYOTO PROTOCOL

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 – were expected to reduce EU-15 emissions to 3.6% below 1990 levels by 2010.

Global GHG Emissions Trends
1990-2005/06

- EU-15 -2.7%
- EU-27 -10.8%
- Germany -18%
- U.S. +16%

Global GHG Emissions Trends

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.

PART 7
THE POST-KYOTO EU

The EU and Post-Kyoto
after 2012

With the Kyoto Protocol targets expired in 2012, the EU was 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" → "First Mover Advantage":

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

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.

Solutions
Targets by 2020

- 20% of energy consumption from clean, renewable energy.
- 10% renewable transport fuels.
- Carbon Capture and Storage (CCS) technology commercially viable.
- CO_2 emission limit for new cars at 95 g/km.
- Increased research and development budget.
- Improvement of energy efficiency and security.
- Triple employment in eco-industries.

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 CO_2 emission limit (120 g/km) for new cars in 2012 (Germany: 2015). (Audi; BMW; Mercedes; Porsche; VW).

The EU and Post-Kyoto

EU Heads Meeting, March 2007

Transforming Europe into a highly energy-efficient, low-carbon economy.