



Policies for a Low Carbon Society: the EU, Japan, and the US Compared

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10 largest CO2 Emitters

- USA 21.44%
- China 18.80%
- Russia 5.69%
- Japan 4.47%
- India 4.23%
- Germany 3.00%
- Canada 2.02%
- United Kingdom 1.95%
- Italy 1.67%
- Korea, Rep. 1.65%
- c Germanwatch 2007

Overall Results of the Climate Change Performance Index 2008

CCPI Rank	Country	Score ^a	Partial Score		
			Trend	Level	Policy
1	Sweden	65.6			
2	Germany	64.5			
3	Iceland	62.6			
4	Mexico	62.5			
5	India	62.4			
6	Hungary	61.0			
7	United Kingdom	59.2			
8	Brazil	59.0			
9	Switzerland	59.0			
10	Argentina	58.5			
11	Latvia	58.1			
12	Belgium	57.9			
13	Portugal	57.9			
14	Malta	57.8			
15	Indonesia	57.6			
16	Norway	57.6			
17	Denmark	57.3			
18	France	56.8			

CCPI Rank	Country	Score ^a	Partial Score		
			Trend	Level	Policy
20	Lithuania	55.9			
21	Turkey	55.7			
22	Bulgaria	55.5			
23	Morocco	54.8			
24	Slovenia	54.2			
25	Czech Republic	51.9			
26	Thailand	51.7			
27	Romania	51.5			
28	Algeria	50.5			
29	Spain	50.1			
30	Netherlands	50.1			
31	New Zealand	50.0			
32	Croatia	49.7			
33	South Africa	49.5			
34	Iran	49.4			
35	Estonia	49.2			
36	Finland	49.1			
37	Austria	48.7			

CCPI Rank	Country	Score ^a	Partial Score		
			Trend	Level	Policy
39	Poland	47.2			
40	China	47.0			
41	Italy	47.0			
42	Japan	46.9			
43	Greece	46.8			
44	Ireland	46.4			
45	Cyprus	46.0			
46	Singapore	45.4			
47	Ukraine	44.7			
48	Kazakhstan	44.6			
49	Malaysia	44.2			
50	Russia	43.9			
51	Korea, Rep.	41.3			
52	Luxembourg	39.2			
53	Canada	37.6			
54	Australia	35.5			
55	USA	33.4			
56	Saudi Arabia	30.0			

Climate Change and Kyoto Protocol

- grew out of ozone depletion case
- 1992 UNCED
- 1997 Kyoto Protocol (CO₂ reductions of 1990 levels by 2008-2012)
 - 8% for EU
 - 7% for US
 - 6% for Japan
- 2000 US withdrawal from Kyoto Process
- 2002 EU, Japan ratification of Kyoto
- 2005 beginning of EU emissions trading system

Kyoto Protocol EU Bubble Agreement

<u>Member State</u>	<u>1997</u>	<u>1998</u>
Austria	-25%	-13%
Belgium	-10%	-7.5%
Denmark	-25%	-21%
Finland	0%	0%
France	0%	0%
Germany	-25%	-21%
Greece	+30%	+25%
Ireland	+15%	+13%
Italy	-7%	-6.5%
Luxembourg	-30%	-28%
Netherlands	-10%	-6.0%
Portugal	+40%	+27%
Spain	+17%	+15%
Sweden	+5%	+4%
United Kingdom	-10%	-12.5%
European Union	-15%	-8%

EU and Climate Change Leadership

- Ratification of Kyoto Protocol
- Pursuit of Concrete Post-Kyoto Targets
- Introduction of EU Emissions Trading System
- Establishment of CO₂ Emissions Reduction Goal for Post-2012
- Establishment of Renewable Energy Target for Post- 2012

European Union

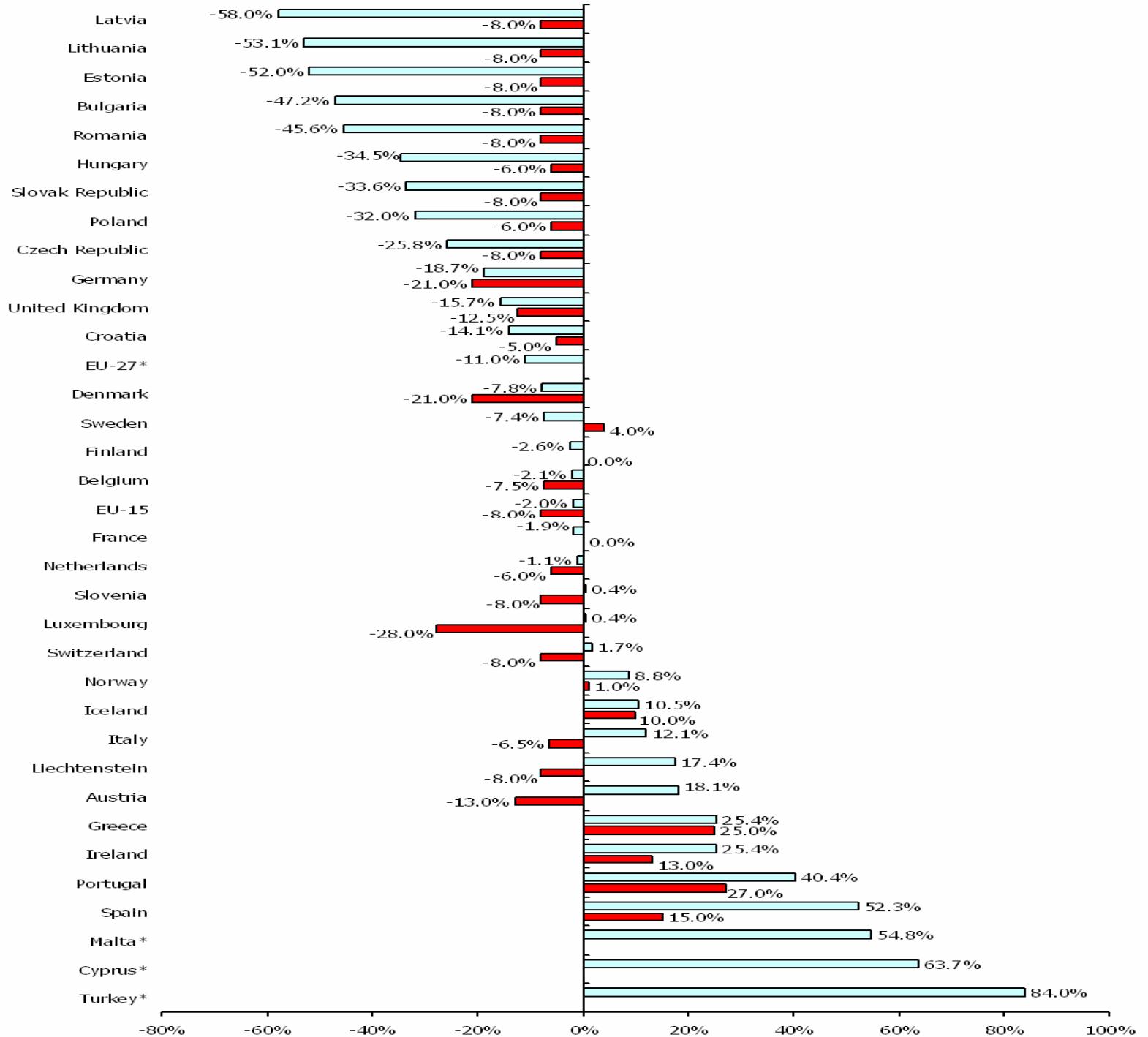
- Promotion of Leadership role but with differentiation for EU member states
- Burden sharing (target sharing)
- Application of burden sharing for Kyoto Protocol Target
- Now being promoted in relation to EU 20-20-by 2020 goals

EU Action on Climate Change

- The EU aims to cut CO₂ emissions:
 - by 8% on 1990 levels by 2008-12 (Kyoto)
 - by 20% by 2020 (30% if other developed countries commit to comparable reductions)
 - (tied to a goal of saving 20% of energy consumption through energy efficiency improvements by 2020)
- EU-wide CO₂ emissions trading scheme operational since January 2005

Legislative Developments: Targets for Renewables

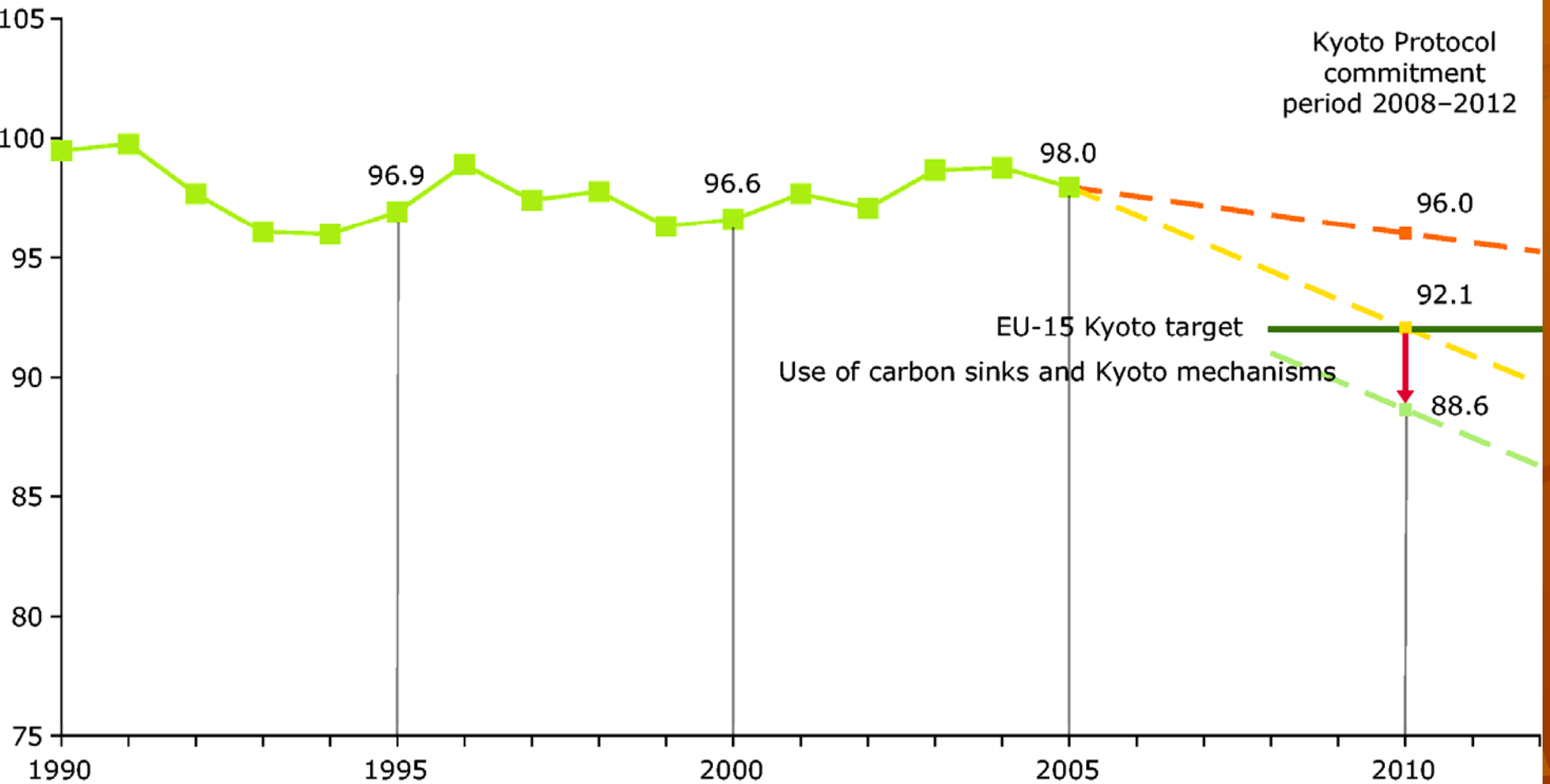
- EU 20% renewable energy target for 2020 (as share of total energy)
- 10% target for biofuels as share of all fuel



European Environment Agency (2007)

Change in GHG Emissions in EU15 and Kyoto Target

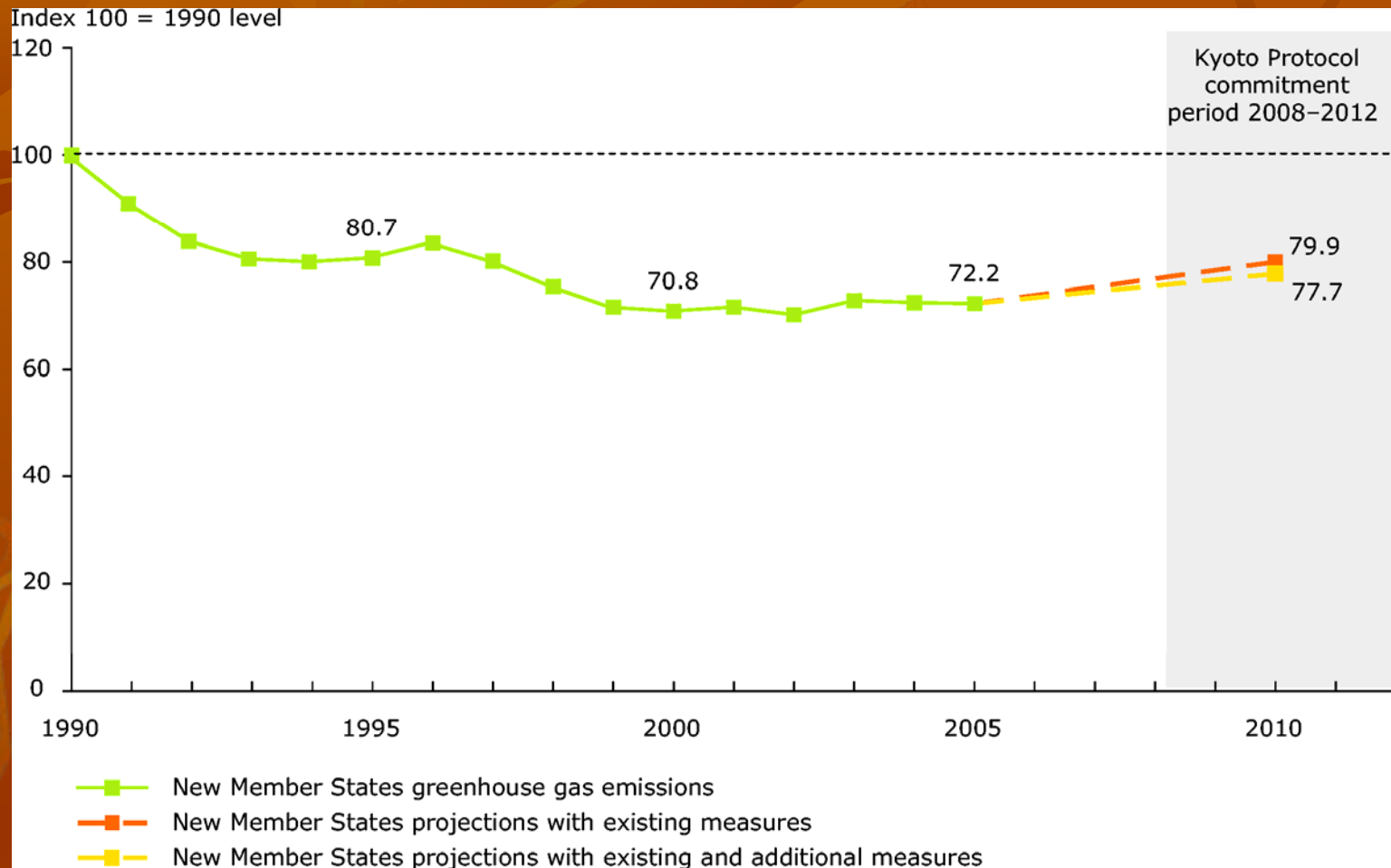
Index 100 = base-year level



- EU-15 greenhouse gas emissions
- - EU-15 projections with existing measures
- - EU-15 projections with existing and additional measures
- - EU-15 projections with existing and additional measures, carbon sinks and Kyoto mechanisms
- EU-15 Kyoto target (2008-2012)

European Environment Agency (2007)

Change in GHG Emissions in EU12 and Kyoto Target



Germany

1991 Electricity Feed-in Law

1994-98 Angela Merkel is Kohl's Env Minister

1995 Berlin Mandate. German govt initiates voluntary agreements with industry for CO₂ reductions

1997 Within EU-bubble Germany agrees to -21% CO₂ reductions

1998 Red-Green Coalition (phase out of nuclear energy, eco-tax reform)

2000 Renewable Energy Act

2001 Red-Green coalition criticizes US withdrawal from Kyoto Protocol, move to accept emissions trading

Angela Merkel: Heiligendamm June 2007

- Merkel convinces a skeptical George W. Bush to agree to G8 statement that **“Global greenhouse gas emissions must stop rising, followed by substantial global emission reductions .”** G8 text includes mention of Merkel’s proposal for a 50% cut by 2050



Germany

- December 2007, German cabinet adopts Climate Package (a set of policies and measures to help the country achieve its target of a 40% reduction of CO₂ emissions by 2020 relative to 1990 levels).
- -renewable energies, energy efficiency, higher energy standards for buildings...

1990-2005 trends

- Between 1990 and 2005 total greenhouse gas emissions, excluding LULUCF:
 - decreased by 7.9 % (444 Mt CO₂-eq.) in the EU-27;
 - decreased by 1.5 % (65 Mt CO₂-eq.) in the EU-15;
 - decreased by 27.8 % (379 Mt CO₂-eq.) in the new Member States.
- EU-15 has achieved one fourth of the total reduction needed to achieve the 8 % reduction goal.

New GHG Emission reduction targets being expressed for Post-Kyoto

- UK (-60% by 2050)
- CA (-80% by 2050)
- Warner-Liebermann (-63% by 2050 (base 2005)) ; Obama (-80% by 2050)
- Germany (-40% by 2020)
- EU (-20% by 2020, -50% by 2050)
- Japan (-60-80% for Japan by 2050)

Bali Negotiations

EU proposal for a 25-40% emissions reduction target for rich countries for post-2012.

Reductions are for 2020 relative to 1990 (the EU proposal was based on IPCC estimates of emission cuts that would be necessary to maintain global temperature rises to 2 degrees C by mid-century).

US and Japan reject

Changing Climate Change Dynamics in the United States

- Growing grass roots support for a strong climate change program
- State and local level climate change initiatives
- Growing Congressional support for climate change legislation
- 2008 Presidential election (Obama)

Conference of New England Governors & Eastern Canadian Premiers

adopted a resolution recognizing climate change as a joint concern.

August 2001 regional Climate Change Action Plan (each must reduce GHGs to 1990 levels by 2010 and 10 % below 1990 levels by 2020)

Regional Greenhouse Gas Initiative

- cap-and-trade scheme for CO₂ from major power plants to beginning January 2009
- Goal: stabilize CO₂ emissions between 2009 and 2015
- annual cuts in CO₂ emissions by 2.5 percent per year after this (total 10 % reduction by 2019 in each state)
- Includes: Maine, Maryland, Massachusetts, Vermont, New Hampshire, Connecticut, New York, New Jersey, and Delaware

The Western Climate Initiative

- (representing 20% of the U.S. economy (the states of California, Oregon, Washington, Arizona, Montana, New Mexico, and Utah) and over 70% of the Canadian economy (the provinces of British Columbia, Manitoba, Quebec, and Ontario) have introduced a goal to reduce their emissions by 15% of 2005 levels by 2020 and between 50 and 85% by 2050

At the regional level

- about half of the 50 states have entered into regional climate change and emission trading pacts.

California Climate Bill (AB1493) and Global Warming Bill (AB 32)

- plan for achieving “maximal feasible reduction” of carbon dioxide emissions from vehicles, effective 2006.
- Car makers given until 2009 to meet the new standards. (Nullified by Bush administration in December)
- AB 32 requires industries cut emissions by 25%

Connecticut, Maine....

- At the state level, numerous states have introduced climate change legislation.
- Maine (2003), Connecticut (2004) passed legislation that states it shall be a goal of the state to stabilize greenhouse gas levels at 1990 levels by 2010 and to reduce them by 10 percent of 1990 levels by 2020.

CA Renewable Energy Portfolio Standard (2002)

aim of achieving 20 percent of its energy come
from renewable resources by 2017.

U.S. Mayor's Climate Protection Agreement

As of late 2008

900 mayors of U.S. cities, representing 82 million Americans, have signed.

They have agreed to strive to meet or exceed the Kyoto Protocol targets.

C40 Large Cities

(<http://www.c40/seoulsummit.com/>)

cities alone consume approximately three-quarters of the world's energy and produce about 80 percent of anthropogenic greenhouse gas emissions.

CCI and C40 Large Cities Climate Leadership Group

- a group of 40 of the largest cities that have pledged to speed up their efforts to reduce global warming emissions.

America's Climate Security Act (2007)

- In Dec 2007, the Senate Environment and Publics Work committee passed the Lieberman-Warner climate bill (America's Climate Security Act).
- cap-and-trade system for carbon and mandate a 7 % cut in GHG pollution by 2050 relative to 2005 levels. (11-8 vote)

....but

Climate Security Act (2007)

- Fails to win sufficient votes to pass in Senate (48 to 36 vote (neither Obama nor McCain cast a vote though both expressed support for the bill))
- In the lead up to the vote, President Bush expressed his disapproval of the bill, arguing it "would impose roughly \$6 trillion in new costs on the American economy"

Barack Obama



Barack Obama

- **Cap and Trade:** will require all pollution credits to be auctioned. Some of the revenue generated by auctioning allowances will be used to support the development of clean energy, to invest in energy efficiency improvements, and to address transition costs, including helping American workers affected by this economic transition.

Barack Obama

- **\$150 Billion over 10 Years in Clean Energy**
- **Double Energy Research and Development Funding**
- **Require 25 Percent of Renewable Electricity by 2025**
- **Develop and Deploy Clean Coal Technology**
- **Increase Fuel Economy Standards 50 Percent by 2030**

- **Set National Building Efficiency Goal** of making all new buildings carbon neutral, or produce zero emissions, by 2030.
- **Restore U.S. Leadership on Climate Change**
- **Create Global Energy Forum** — that includes all G-8 members plus Brazil, China, India, Mexico and South Africa —the largest energy consuming nations from both the developed and developing world.
- **Re-Engage with the U.N. Framework Convention on Climate Change**

The Obama-Biden comprehensive New Energy for America

- 5 million new jobs
- \$150 billion over 10 years to catalyze private efforts to build a clean energy future.
- 1 million Plug-In Hybrid cars -- cars that can get up to 150 miles per gallon -- on the road by 2015, (cars that we will work to make sure are built here in America)
- Ensure 10% of electricity comes from renewable sources by 2012, and 25 percent by 2025.
- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.

Eliminate Our Current Imports from the Middle East and Venezuela within 10 Years

- Increase Fuel Economy Standards.
- Get 1 Million Plug-In Hybrid Cars on the Road by 2015.
- Create a New \$7,000 Tax Credit for Purchasing Advanced Vehicles.
- Establish a National Low Carbon Fuel Standard.
- A “Use it or Lose It” Approach to Existing Oil and Gas Leases.
- Promote the Responsible Domestic Production of Oil and Natural Gas.

Reduce Greenhouse Gas Emissions 80 Percent by 2050

- Implement an economy-wide cap-and-trade program to reduce greenhouse gas emissions 80 percent by 2050.
- Make the U.S. a Leader on Climate Change.

Joseph Biden

- League of Conservation Voters: 83 % lifetime scorecard during his 35 years in the Senate.
- introduced legislation to eliminate subsidies to oil companies,
- supported raising the fuel economy standard,
- opposed the nuclear waste repository in Yucca Mountain,
- opposed drilling for oil in the Arctic National Wildlife Refuge, big supporter of biofuels and renewable energy (calling for 20 percent of electricity to come from renewables),

- takes cautious view on increasing US reliance on nuclear energy
- cosponsor of Sense of the Senate resolution: calls on US to participate in UN climate negotiations.
- co-sponsored Boxer-Sanders Global Warming Pollution Reduction Act, to establish a cap and trade system with a stabilization goal at 1990 levels by 2020 and an 80 percent cut below 1990 levels by 2050.

Japan and Kyoto Protocol

- Japan commits to 6 percent reduction of CO₂ emissions relative to 1990 levels by 2008-2012
- Japan joins EU in ratifying Kyoto Protocol in 2002, agreement goes into effect in 2005
- Japan's 2006 emissions 6.4% above 1990 levels (or 12.4% above Kyoto target)

Tokyo Climate Initiative

- Tokyo Metropolitan Government established a 10-Year Project for a Carbon-Minus Tokyo in June 2007.
- The plan calls for a reduction in Tokyo's greenhouse gas emissions by 25 percent from the 2000 level by 2020.

(per capita CO₂ emissions in Tokyo are already 20-30 percent lower than in New York and London)

Kyoto Climate Change Initiative

- Kyoto City (2003) issued a Proclamation to Stop Global Warming: “Kyoto, as the city where the Kyoto Protocol was created as a promise to work to prevent global warming around the world, is dedicated to supporting efforts to stop global warming.”
- 2004, Kyoto City became the first Japanese municipality to enact a Global Warming Countermeasures Ordinance.

Points of Discussion in Poznan

- Targets (caps vs. energy efficiency)
- Sectoral approach
- Base year
- End goal
- Financial transfer
- Technology transfer, IPR (also CDM)
- Emissions trading
- Forests