

Environmental Economics in the Central European Context

Time: Tuesday 4pm

Location: at CERGE-EI, Room # 11

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Reading materials: <http://home.cerge-ei.cz/richmanova/Teaching.html>

10 Environmental Policy in the world context – History and current problems

Kramer – Development of environmental policies in the United States and Europe: Convergence or Divergence? EUI Working Papers 2002/33

I. Different points of departure

- **active** protection of environment started in **1960's** in both Europe and the USA (but many measures existed even before: **water management, nature protection, town and country planning, waste management**)
- starting in 60s **more organized** deliberate and planned measures giving rise to the “environmental policy” (in both the US and Europe)

US

- existing measures **on the individual states' levels**
- growing public concern for the environment
- gradual federalization
- **since the end of 1960s** a number of **strong, extremely detailed and prescriptive legislative** measures have been adopted, which together with federal executive institution have formed the backbone of the US environmental policy
 - ⇒ 1965-67 **federal air pollution legislation**, in 1970 considerably reinforced by the **Clean Air Act Amendments**
 - ⇒ 1972 the **Federal Water Pollution Control Act Amendments** federalized and sharpened water management
 - ⇒ 1970 the **Environmental Protection Agency (EPA)** - regulatory and enforcing functions

<http://www.epa.gov>

*EPA was established to consolidate in one agency a variety of federal **research, monitoring, standard-setting and enforcement** activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment— **air, water, and land** —*

upon which life depends. From regulating auto emissions to banning the use of DDT; from cleaning up toxic waste to protecting the ozone layer; from increasing recycling to revitalizing inner-city brownfields, EPA's achievements have resulted in cleaner air, purer water, and better protected land. What they do:

- *Develop and Enforce Regulations*
- *Give Grants*
- *Study Environmental Issues*
- *Sponsor Partnerships*
- *Teach People About the Environment*
- *Publish Information*

- ⇒ Congress: **produce and process legislation** (the Interstate Commerce Cause) power to **levy taxes and charges, introduce subsidies**
- ⇒ federal government owning about **1/3 of the land in the US** – nature conservation measures without serious interference with property rights

Europe

- **EU not a nation but a supranational joint-venture of nation-states**
- **member states with different perceptions and objectives**
- environmental concerns **developed at the level of member states** => different subjects, variable intensity, consequences and reactions from national legislatures
- **sovereignty => all sort of difficulties that slowed the integration** and making of the common environmental standards
- The EC treaty (1958) did not contain any explicit reference to environment; not until the Single European Act of 1987.
 - **the treaty is not a constitution**, the basic competences vested in member states
 - there is no European Congress, **the environmental legislation is adopted jointly by the Council of Ministers and by the European Parliament** (directly elected members) => member states have a decisive influence on which environmental matters they want to have dealt with on national and on kind of “federal” level.
 - **EU does not own land**, member states do not own significant amounts of land either
 - **EU has no power to levy environmental taxes**
 - **EU has practically no income of its own, it receives 1.27% of the national income of member states => limited resources** for economic or fiscal incentives or subsidies
- Moreover: **political, economic, social, cultural and environmental differences among the member states**, absence of European media, of European public opinion and of European-wide common interest + concerns regarding **competitiveness**

Since mid 70s US and EU: written communication to promote cooperation in environmental matters

- **mainly focused on matters that concerned potential trade conflicts;**
- intensive **technical cooperation** regarding chemical and air pollution with some good results;

Since 80s

US

Strong centralization since 70s **criticized** by supporters of state-level policies, economists and regulated businesses

- ⇒ **deregulation** started in early 80s
- ⇒ **regulatory responsibilities of EPA narrowed**, greater responsibility to individual states

2 factors influencing US environmental policy

- ⇒ Reagan's Executive Order 12291 required EPA and other federal regulatory agencies to adopt most economically efficient or **cost-effective** alternatives;
- ⇒ **No special department for environmental matters** existed -> the State Department and the Department of Commerce represented US at international environmental negotiations

after mid 80s US - **divergence of views** between Executive and Congress on basic questions paralyzing legislative measures and prevented innovation

EU

EC Treaty amendment in mid 80s – general consensus about the **need for comprehensive EC environmental policy**

- ⇒ EU environmental legislation was negotiated by the environmental departments
- ⇒ Environmental Dept. of EC (early 70s) -> **environmental matters kept outside the direct influence of members' foreign or trade policy**
- ⇒ on international level, EU had **no general competence to act** (represented by Environmental directorate general of EC and by environmental departments of member states) -> **sometimes difficult to find common position**
- ⇒ at many international conventions it was difficult for EU to uphold at least some position
- ⇒ e.g. US wanted to allow EU accession to global environmental conventions only under the following conditions:
 1. EU would make a precise statement on the **Community competence** in the subject-matter dealt with by convention in question (difficult for EU as the Treaty is not a constitution and the repartition of competences between EU and member states is not static)
 2. **majority of member states would ratify the convention**

- ⇒ lack of clearly defined competences sometimes stood in way of international agreement (e.g. amendment on CITES Convention on international trade in endangered species to allow EUs accession – not ratified by US and many others -> EU cannot adhere to that convention and was formally barred from speaking with one voice at CITES conferences)
- ⇒ at some conventions EU was involved and, occasionally, it made a declaration about competence

(1978) Montreal Protocol negotiations (concerning the restrictions of production and use of ozone depleting substances)

- ⇒ **EC managed to find common language** for its members and even obtained a clause which allowed joint implementation of the obligations under the protocol
- ⇒ the first negotiations on the international level at which **EU and US confronted** each other on environmental matters,
- ⇒ **the negotiating position of EU member states greatly improved under EU without having their national interests neglected** => encouragement to continue “speaking with one voice”

(1987) The Single European Act

- ⇒ **laid down objectives and principles of environmental policies** based on objectives and policies agreed upon by member states
- ⇒ **gave EU a mandate to contribute to search for environmental solutions and clarified that EU had the competence to act internationally**, aside from or jointly with members
- ⇒ obligation to find and promote high level of environmental protection – **EU did not try to subordinate environmental interests to commercial or economic interests**
- ⇒ EU environmental legislation covered more areas, **became more coherent** and gave political and legal framework to environmental measures in member states – **alignment of national environmental policies**

After the Single European Act

- re-evaluation of the objectives of Environmental policy,
- **attempts to integrate environmental requirements into other policy areas** (transport, energy, regional policy, agriculture and industry),
- **further attempts to align national environmental policies**,
- growing attention to **climate change** issues
- **import of some tools from US** (environmental impact assessment, access to information, management systems), some tools rejected (e.g, EPA-like enforcement agency)

US seen as trying to subordinate environmental questions to economy/trade issues and to avoid any substantive environmental provisions at all

⇒ e.g. **Kyoto protocol**

- US considered it flawed b/c
 - **only obligations for industrialized not developing countries** to reduce GHG emissions (as a long-term problem, also developing countries should be involved)
 - **it did not expressly enable industrialized countries to comply with reduction commitments by investing in reduction technologies in developing countries**, i.e. in ways that would not require emission reductions at home
- EU saw it as a prolongation of the commitments accepted under the Climate Change Convention
- still not ratified by the US

MAIN DIVERGENCIES	
EU	USA
<ul style="list-style-type: none"> - represented on international negotiations by environmental depts. of member states and by the EC's directorate for environmental affairs - same importance to trade issues, environmental and social concerns - multilateral solutions that are globally acceptable, not necessarily best economic interest of EU - Nation states accept regulatory role of EU and global solutions it brings. - do not rely on market too much 	<ul style="list-style-type: none"> - delegations represented by State Dept. or the Dept. of Commerce (no environmental dept.) - more emphasis on economic aspects of free trade than on environmental protection - believe in market solution, - more interests in the US industry rather than in global environment - only commitments that bring economic advantage; - no compliance mechanisms and control procedures that might impinge on national sovereignty

CAUSES OF DIVERGENCIES	
EU	USA
<ul style="list-style-type: none"> - stronger commitment to social and also environmental concerns, - history of governments interfering in social (and environmental) area - EU environmental measures seen as harmonizing rather than centralizing - other than "economic" approaches – biology, geology, geography, philosophy, religion, social science...; cost-benefit and risk assessment not scientifically sound as economists failed to develop generally acceptable standards for measuring environmental harms - polls suggest care for environment; "greens" keep appearing in political life even in governments - environmental challenge seen worth investing as a new stimulus for innovation 	<ul style="list-style-type: none"> - many businesses would "philosophically" oppose to regulation and find it illegitimate - environmental policy viewed as centralizing policy – criticism by conservative circles - cost-benefit and risk analysis viewed as scientific approach - Congress (no need of cost-benefit analysis) vs. EPA (economic principles applied to regulatory measures)

United Nations Framework Convention on Climate Change (UNFCCC or FCCC)

From Wikipedia, the free encyclopedia, and <http://unfccc.int/2860.php>

- an international environmental treaty produced at the United Nations Conference on Environment and Development (UNCED), informally known as **the Earth Summit**, held in **Rio de Janeiro** from 3 to 14 June **1992**.
- the objective of the treaty is to **stabilize greenhouse gas concentrations** in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.
- the treaty itself sets **no mandatory limits** on greenhouse gas emissions for individual countries and contains **no enforcement mechanisms**. In that sense, the treaty is considered **legally non-binding**.
- Instead, the treaty provides for updates (called "**protocols**") **that would set mandatory emission limits**.
- The principal update is the **Kyoto Protocol**, which has become much better known than the UNFCCC itself.
- it was **open for signature** from 16 March **1998** to 15 March 1999 at United Nations Headquarters, New York. By that date the Protocol had received 84 signatures..
- Pursuant to Article 22, the Protocol is **subject to ratification, acceptance, approval or accession by Parties to the UNFCCC**. Parties to the UNFCCC that have not signed the Protocol may accede to it at any time...
- The Protocol **entered into force on 16 February 2005** in accordance with Article 23, that is the ninetieth day after the date on which not less than 55 Parties to the UNFCCC, incorporating Parties included in Annex I which accounted in total for at least 55 % of the total carbon dioxide emissions for 1990 of the Parties included in Annex I, have deposited their instruments of ratification, acceptance, approval or accession.
- currently (as of Apr 2013), there are **192 Parties** (191 States and the) to the Kyoto Protocol to the UNFCCC. The total percentage of Annex I Parties emissions is 63.7%. (complete list of parties you can find here: http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php)
- one of its first tasks was **to establish national greenhouse gas inventories** of greenhouse gas (GHG) **emissions and removals**, which were used to create the 1990 benchmark levels for accession of Annex I countries to the Kyoto Protocol and for the commitment of those countries to GHG reductions. Updated inventories must be regularly submitted by Annex I countries.
- The parties to the convention have **met annually** in **Conferences of the Parties (COP)** to assess progress in dealing with climate change. In 1997, the Kyoto Protocol was concluded and established legally binding obligations for developed countries to reduce their greenhouse gas emissions.

Selected Conferences of the Parties

- since the UNFCCC entered into force, the parties have been meeting annually in **Conferences of the Parties (COP)** to assess progress in dealing with climate change,
- beginning in the mid-1990s, also to negotiate **the Kyoto Protocol to establish legally binding obligations for developed countries** to reduce their greenhouse gas emissions

- starting from 2005 the Conferences have met in conjunction with **Meetings of Parties of the Kyoto Protocol (MOP)** (parties to the Convention that are not parties to the Protocol can participate in Protocol-related meetings as observers).

1997 - COP 3, The Kyoto Protocol on Climate Change

- took place in December 1997 in Kyoto, Japan and after intensive negotiations, it adopted **the Kyoto Protocol**.
- Most industrialized nations and some central European economies in transition **agreed to legally binding reductions** in greenhouse gas emissions of an average of **6 to 8% below 1990 levels between the years 2008-2012**
- The US would be required to reduce its total emissions an average of 7% below 1990 levels, however neither the Clinton administration nor the Bush administration sent the protocol to Congress for ratification. The Bush administration explicitly rejected the protocol in 2001.

2000 - COP 6, The Hague, Netherlands

- The discussions evolved rapidly into a high-level negotiation over the major political issues. These included
 1. major controversy over the United States' proposal to allow credit for "**carbon sinks**" in forests and agricultural lands, and
 2. **satisfying a major proportion of the U.S. emissions reductions in this way;**
 3. **disagreements over consequences for non-compliance** by countries that did not meet their emission reduction targets;
 4. difficulties in resolving **how developing countries could obtain financial assistance** to deal with adverse effects of climate change and meet their obligations to plan for measuring and possibly reducing GHG emissions.
 5. In the final hours of COP 6, despite some compromises agreed between the US and some EU countries, notably the United Kingdom, the EU countries as a whole, led by Denmark and Germany, rejected the compromise positions, and the talks in The Hague collapsed.
 6. was suspended without agreement, with the expectation that negotiations would be resumed in Bonn, Germany, in the second half of July.

2001 - COP 6, Bonn, Germany

- COP 6 negotiations resumed July 17-27, 2001, in Bonn, Germany, **with little progress** made on resolving the differences that had produced an impasse in The Hague.
- However, this meeting took place after President George W. Bush had become the U.S. President, and had rejected the Kyoto Protocol in March; as a result the **US delegation to this meeting declined to participate in the negotiations** related to the Protocol, and chose to act as observers at that meeting.
- other parties, to the surprise of most observers given the low level of expectations that preceded the meeting, reached agreement. The agreements included:

1. **Flexible Mechanisms** which allow industrialized countries to fund emissions reduction activities in developing countries as an alternative to domestic emission reductions (strongly favored by the US initially); including
 - emissions trading;
 - Joint Implementation (JI);
 - the Clean Development Mechanism (CDM).
 - with **no quantitative limit on the credit a country could claim** from use of these mechanisms, but domestic action must constitute a significant element of the efforts of each Annex B country to meet their targets.
2. **Carbon sinks:** Credit was agreed to for broad activities that absorb carbon from the atmosphere or store it, including forest and cropland management, and re-vegetation, with no over-all cap on the amount of credit that a country could claim for sinks activities (some country-specific caps).
3. **Compliance:** final action on compliance procedures and mechanisms that would address non-compliance with Protocol provisions was deferred to COP 7, but included broad outlines of consequences for failing to meet emissions targets that would include a requirement to "make up" shortfalls at 1.3 tons to 1, suspension of the right to sell credits for surplus emissions reductions; and a required compliance action plan for those not meeting their targets.
4. **Financing:** Three new funds were agreed upon to provide assistance for needs associated with climate change;
 - a fund for climate change that supports a series of climate measures;
 - a least-developed-country fund to support National Adaptation Programs of Action;
 - a Kyoto Protocol adaptation fund supported by a CDM levy and voluntary contributions.

2001 - COP 7, Marrakech, Morocco

- completed the work of the Buenos Aires Plan of Action and finalizing most of the operational details and setting the stage for nations to ratify the Protocol
- The completed package of decisions are known as the **Marrakech Accords**.
- **The United States delegation continued to act as observers, declining to participate in active negotiations.**
- Other parties continued to express their hope that the United States would re-engage in the process at some point, but indicated their intention to seek ratification of the requisite number of countries to bring the Protocol into force (55 countries representing 55% of developed country emissions of carbon dioxide in 1990).

2009 - COP 15/MOP 5, Copenhagen, Denmark

- The overall goal for the COP 15/MOP 5 United Nations Climate Change Conference in Denmark was to establish an ambitious global climate agreement for the period from 2012 when the first commitment period under the Kyoto Protocol expires.
- However, on November 14, 2009, the New York Times announced that "President Obama and other world leaders have decided to put off the difficult task of reaching a climate change agreement... agreeing instead to make it the mission of the Copenhagen conference to reach a less specific "politically binding" agreement that would punt the most difficult issues into the future."
- The conference did not achieve a binding agreement for long-term action.
- A 13-paragraph '**political accord**' was negotiated **by approximately 25 parties including US and China**, but it was **only 'noted' by the COP** as it is considered an external document, not negotiated within the UNFCCC process.
- more on that to follow....

2010 - COP 16/MOP 6, Cancun, Mexico

- following the non-binding Copenhagen Accord, international expectations were reduced.
- 4 preparatory rounds of negotiations were held during 2010. The first three of these were in Bonn, Germany, reported as ending in failure. The fourth round of talks in Tianjin, China, made minimal progress and was marked by a clash between the US and China.
- The outcome of the summit was an **agreement** adopted by the states' parties that called for a large "Green Climate Fund," and a "Climate Technology Center" and network. It looked forward to a second commitment period for the Kyoto Protocol.
- a "**Green Climate Fund**," proposed to be worth \$100 billion a year by 2020, to assist poorer countries in financing emission reductions and adaptation.
- there was **no agreement on how to extend the Kyoto Protocol**, or how the \$100 billion a year for the Green Climate Fund will be raised, or whether developing countries should have binding emissions reductions or whether rich countries would have to reduce emissions first.

2012 – COP18/MOP18, Doha

- The Conference produced a package of documents collectively titled **The Doha Climate Gateway**
- the conference reached an agreement to extend the life of the Kyoto Protocol until 2020 (it was to expire at the end of 2012)
- also to reify the 2011 Durban Platform, i.e. agreed that a successor to the Protocol is set to be developed by 2015 and implemented by 2020.
- An eight year extension of the Kyoto Protocol is limited in scope to only 15% of the global carbon dioxide emissions due to the lack of participation of Canada, Japan, Russia, Belarus, Ukraine, New Zealand and the United States and due to the fact that developing countries like China (the world's largest emitter), India and Brazil are not subject to any emissions reductions under the Kyoto Protocol.

- Doha amendment includes
 - New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020;
 - A revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period; and
 - Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.
- During the first commitment period, 37 industrialized countries and the European Community committed to reduce GHG emissions to an average of five percent against 1990 levels. During the second commitment period, Parties committed to reduce GHG emissions by at least 18 percent below 1990 levels in the eight-year period from 2013 to 2020; however, the composition of Parties in the second commitment period is different from the first.
- The conference made little progress towards the funding of the Green Climate Fund.
- Reaction to the conference outcomes was characterized as "modest, at best"; in general small islands are not happy about too little progress; others see the "loss and damage mechanism" as a progress towards assigning liabilities; there is still lots of work to be done as regards the financing and also to achieve some "post-Kyoto" agreements

2013 – COP19/MOP19, Warsaw

- it was agreed that countries must submit their post-2020 emissions reduction targets, policies and measures, a so-called 'Intended Nationally-Determined Contributions' or INDCs, in the first quarter of 2015, so as to enable a mutual assessment of countries' ambition well ahead of 2015 Paris conference.

2014 – COP20/MOP20, Lima

- wave of optimism after the agreement between China and the US in mid-November (more later)
- hopes that Lima would produce a draft agreement text for Paris
- the final decision in Lima includes an Annex with the **'Elements of a draft negotiating text'** which reflects a variety of different options proposed by the parties.
- many also expected that Lima would produce a decision on the form of information that countries must provide in their INDCs
 - ⇒ debates about the 'differentiated responsibilities' of developed and developing countries

- ⇒ countries could not agree on mandatory rules or guidelines, the final agreed outcome from Lima merely lists the matters that parties 'may' include in their INDCs, and 'invites' parties to 'consider' incorporating an adaptation component (no mention of incorporating a financial support component)

All eyes are on **Paris** now...countries need to agree on continuation of Kyoto after 2020...still lots of work to be done by Dec 2015

Kyoto protocol

- The Protocol was initially adopted on Dec 11, 1997, in Kyoto, Japan and entered into force on Feb 16, 2005
 - result of tough, 10-day negotiations
 - the EU and its member states ratified the protocol in May 2002;
 - US is the most notable non-party, being responsible for 36.1% of 1990 Annex-I-countries emissions
 - countries like China, India, Brazil are still in the non-annex group, i.e. without any commitments
 - Under the protocol, 39 industrialized countries and the EU (=Annex I countries) commit themselves to a reduction of four GHG (carbon dioxide, methane, nitrous oxide, sulphur hexafluoride) and two groups of gases (hydrofluorocarbons and perfluorocarbons)
 - Annex I countries agreed to reduce their collective emissions by 5.2% from the 1990 level by 2012 (the limits do not include emissions by international aviation and shipping but are in addition to the industrial gases, chlorofluorocarbons which are dealt with under the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer).
 - national limitations range from 8% (EU and others), 7% for the US, 6% for Japan, 0% for Russia and permitted increases of 10% for Australia and 10% for Iceland
- **Principle of common but differentiated responsibilities**
- the largest share of historical and current global emissions of GHG originated in developed countries
 - per capita emissions in developing countries are still relatively low
 - the share of global emissions originating in developing countries will grow to meet social and development needs

Annex I countries

- those which have ratified the Protocol have committed to reduce their emission levels of greenhouse gasses to targets that are mainly set below their 1990 levels (emission trading).
- there are 43 Annex I countries, the European Union is also a member
- these countries are classified as industrialized countries and countries in transition:

Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, European Union, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, 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 countries

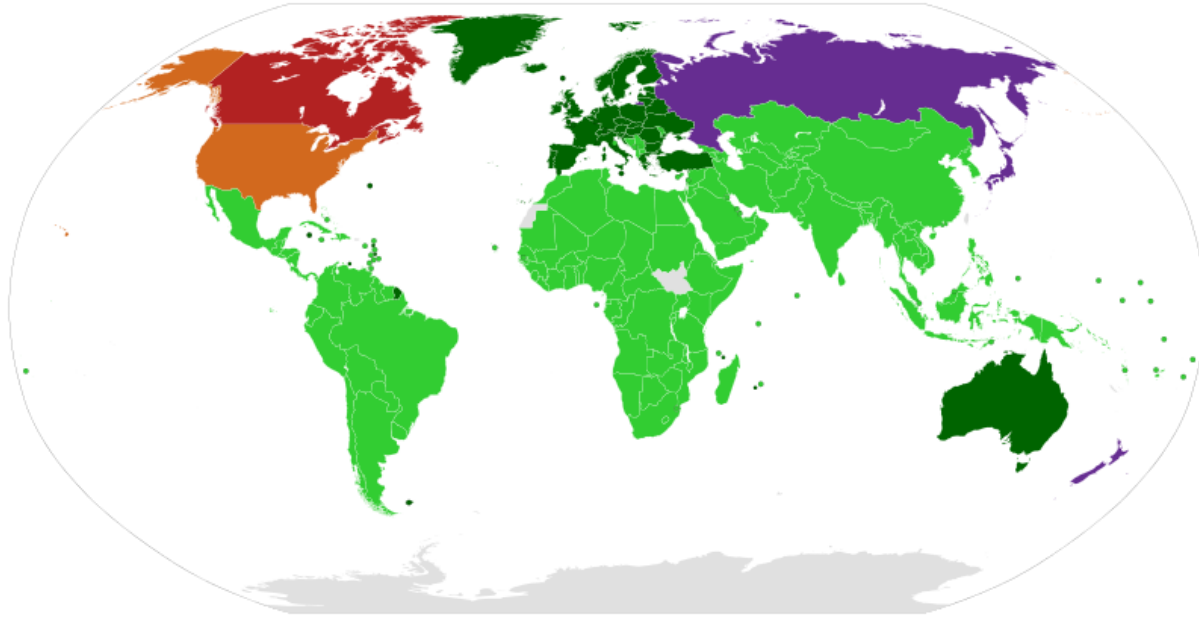
- are a sub-group of the Annex I countries
- they comprise the OECD members, **excluding those that were economies in transition in 1992.**
- there are 23 Annex II countries and the European Union.
- Turkey was removed from the Annex II list in 2001 at its request to recognize its economy as a transition economy.
- these countries are classified as developed countries which pay for costs of developing countries:

Australia, Austria, Belgium, Canada, Denmark, European Union, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States of America

Developing countries

- are not required to reduce emission levels unless developed countries supply enough funding and technology.
- may volunteer to become Annex I countries when they are sufficiently developed.
- Setting no immediate restrictions under UNFCCC serves three purposes:
 - it avoids restrictions on their development, because emissions are strongly linked to industrial capacity
 - they can sell emissions credits to nations whose operators have difficulty meeting their emissions targets
 - they get money and technologies for low-carbon investments from Annex II countries.

Current participation map (for the current period)



English: Kyoto Protocol participation map

(commitment period: 2013-2020)

	Parties; Annex I & II countries with binding targets
	Parties; Developing countries without binding targets
	States not Party to the Protocol
	Signatory country with no intention to ratify the treaty, with no binding targets
	Countries that have renounced the Protocol, with no binding targets
	Parties with no binding targets in the second period, which previously had targets

- Each Annex I country is required to submit an annual report of inventories of all anthropogenic GHG emissions; they nominate a so-called “designated national authority” to create and manage this GHG inventory
- **Flexible mechanisms**
 1. **International Emissions trading** (cap and trade, like EU ETS)
 2. **Clean Development Mechanism (CDM)** which allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one ton of CO₂, which can be counted towards meeting Kyoto targets (e.g. a rural electrification project using solar panels or the installation of more energy-efficient boilers).
 3. **Joint Implementation (JI)** which allows a country with an emission reduction or limitation commitment under the Kyoto Protocol (Annex B) to earn emission reduction units (ERUs) from an emission-reduction or emission removal project in another Annex B party, each equivalent to one ton of CO₂, which can be counted towards meeting its Kyoto target.

- **Annex B** countries = 34 of Annex I countries which have committed themselves to a reduction of GHG emissions
 - The emission reductions achieved by the CDM or JI are measured against a hypothetical baseline that would have occurred in absence of a particular project; these reductions produced by CDM or JI can be used by Annex B countries in meeting their commitments
 - between 2001 (1st year) and 2012 the CDM is expected to produce some 1.5bn tons of CO2 equivalent in emission reductions. Most of these come through renewable energy, energy efficiency and fuel switching projects. By 2012, the largest potential for production of CER (=certified emission reduction; produced by CDM) are estimated in China and India (52% and 16% of total, respectively)
 - the formal crediting period for JI did not start until Jan'08 and by Nov'08 only 22 projects had been registered and approved; the total emission savings are expected to be about 10 times lower than those from CDM; Russia accounts for about 2/3 of savings, the rest about equally divided between Ukraine and new EU member states.
- The Kyoto Protocol **compliance mechanism** - to facilitate, promote and enforce compliance with the commitments under the Protocol; The Compliance Committee is made up of two branches: a facilitative branch (to provide advice and assistance to Parties in order to promote compliance) and an enforcement branch (with responsibility to determine consequences for Parties not meeting their commitments). Both branches are composed of 10 members, including one representative from each of the five official UN regions (Africa, Asia, Latin America and the Caribbean, Central and Eastern Europe, and Western Europe and Others), one from the small island developing States, and two each from Annex I and non-Annex I Parties.
 - **Enforcement:** if Annex I country is found out of compliance with its limitations, then that country is required to make up the difference plus an additional 30%. In addition that country will be suspended from making transfers under the emission trading program
- **Top 10 emitters**
(first number is % of total emissions, 2nd is per-capita emissions in tons of GHG)
 1. China¹ – 17%, 5.8
 2. United States³ – 16%, 24.1
 3. European Union-27³ – 11%, 10.6
 4. Indonesia² - 6%, 12.9
 5. India – 5%, 2.1
 6. Russia³ – 5%, 14.9
 7. Brazil – 4%, 10.0
 8. Japan³ – 3%, 10.6
 9. Canada³ – 2%, 23.2
 10. Mexico – 2%, 6.4
 - **Tough Negotiations:**
 - **role of developing countries...** it was recognized that

- developed nations had contributed most to the (back-then-)current concentrations of GHGs in the atmosphere
- developing country emissions per-capita were still relatively low
- and that the share of global emissions from developing countries would grow to meet their development needs.

→ developing countries were not subject to emission reduction commitments in the first Kyoto commitment period. However, the large potential for growth in developing country emissions made negotiations on this issue tense... The general assumption was that developing countries would face quantitative commitments in later commitment periods

- **Base year**

- The choice of the 1990 main base year remains in Kyoto (no good data available prior to 1990).
- the 1990 base year also favored several powerful interests including the UK, Germany and Russia (UK and Germany had high emissions in 1990)
- In the UK following 1990, emissions had declined because of a switch from coal to gas ("dash for gas"), which has lower emissions than coal, due to privatization of coal mining and its switch to natural gas supported by North sea reserves.
- Germany benefitted from the 1990 base year because of its reunification between West and East Germany. East Germany's emissions fell dramatically following the collapse of East German industry after the fall of the Berlin Wall.

- **Emission cuts**

- The G77 (<http://www.g77.org/doc/>) wanted strong uniform emission cuts across the developed world of 15%
- Countries, such as the US, made suggestions to reduce their responsibility to reduce emissions. These suggestions included:
 - the inclusion of carbon sinks (e.g., by including forests, that absorb CO₂ from the atmosphere).
 - and having net current emissions as the basis for responsibility, i.e., ignoring historical emissions.
- The final days of negotiation of the Protocol saw a clash between the EU and the US and Japan. The EU aimed for flat-rate reductions in the range of 10-15% below 1990 levels, while the US and Japan supported reductions of 0-5%. The final agreement is a result of last minute compromises.

- **Flexibility mechanisms**

- Japan and EU wanted as much transparency as possible, concerns that US would use flexibility mechanisms to its own advantage, over the interest of weaker countries...

- **“Achievements”** (as of 2008, World Bank report)
 - For the **Annex I non-Economies-in-Transition (non-EIT) Kyoto Protocol (KP) Parties**, emissions in 2005 were 5% higher than 1990 levels while their Kyoto target for 2008-2012 is for a 6% reduction in emissions.
 - the **Annex I Economies in Transition (EIT) KP Parties** emissions in 2005 were 35% below 1990 levels while their Kyoto target is for a 2% reduction
 - In 2005, the Annex I non-KP Parties emissions were 18% above their 1990 levels. (Turkey and the United States)
 - In total, **the Annex I KP Parties** emissions for 2005 were 14% below their 1990 levels. Their Kyoto target is for a 4% reduction.
 - **Non Annex:** In several large developing countries and fast growing economies (China, India, Thailand, Indonesia, Egypt, and Iran) GHG emissions have increased rapidly. For example, emissions in China have risen strongly over the 1990-2005 period, often by more than 10% year. Emissions per-capita in non-Annex I countries are still, for the most part, much lower than in industrialized countries. Non-Annex I countries do not have quantitative emission reduction commitments, but they are committed to mitigation actions. China e.g. has had a national policy program to reduce emissions growth, which included the closure of old, less efficient coal-fired power plants.

Copenhagen - The 2009 United Nations Climate Change Conference

- commonly known as **the Copenhagen Summit**, was held at the Bella Center in Copenhagen, Denmark, between **7 December and 18 December, 2009**.
- According to the Bali Road Map, a framework for climate change mitigation beyond 2012 was to be agreed there.

High hopes for Copenhagen

- Kyoto agreements were to expire in 2012
- search for new international agreement about emission reduction targets, hope for a legally binding treaty to replace Kyoto Protocol
- given the deadline (2012) – slowly running out of time (Copenhagen was the last chance to get this agreement in time, to be ready when Kyoto expires)
- President Barack Obama raising hopes that the US stance might change and the States might be more committed
- in the end the outcome of the conference is considered a **failure**...

BBC NEWS – special report - Where countries stand on Copenhagen

Country	What's on the table	Climate facts (2007)	Public opinion
China  "Developed countries should support developing countries in tackling climate change." <i>President Hu Jintao, 22/9/09</i>	<ul style="list-style-type: none"> Set a "binding goal" to cut CO2 per unit of GDP by 40-45% below 2005 levels by 2020 Wants rich countries to reduce emissions to 40% below 1990 level by 2020 Says they should pay 1% of their GDP per year to help other countries adapt Wants West to provide low-carbon technology 	<ul style="list-style-type: none"> The world's biggest GHG producer (20.7% of global emissions, 8,106mt of CO2 equivalent) Emissions per head: 30th in the world (6t of CO2 equivalent) GDP (2008): \$4.3tn Amount of GHG emitted per \$1m of GDP: 1,152t Kyoto: Signed as a developing country so not obliged to cut emissions 	How serious a threat is global warming to you and your family? Very/Somewhat serious  33% Not very/Not at all serious  62%
United States  "This is not fiction, this is science. Unchecked, climate change will pose unacceptable risks to our security, our economies, and our planet." <i>Barack Obama, US president, 18/12/09</i>	<ul style="list-style-type: none"> Prepared to work "with other countries" to raise \$100bn a year by 2020 Will cut emissions to 17% below 2005 levels by 2020 pending congressional approval - this is close to 4% below 1990 levels Against Kyoto-style treaty imposing international legal obligations Insists China, India, South Africa and Brazil must commit to slow growth of emissions Climate bill is currently bogged down in Senate 	<ul style="list-style-type: none"> The world's second-biggest GHG producer (15.5% of global emissions, 6,087mt of CO2 equivalent) Emissions per head: Fifth in the world (20t of CO2 equivalent) GDP (2008): \$14.2tn Amount of GHG emitted per \$1m of GDP: 441t Kyoto: Signed, but never ratified 	How serious a threat is global warming to you and your family? Very/Somewhat serious  64% Not very/Not at all serious  36%
EU  "Things are fragile but I believe that common sense will prevail. We have to focus on the substance and we have to take political decisions." <i>Stavros Dimas, EU environment commissioner, 18/12/09</i> The EU is a grouping of 27 European states	<ul style="list-style-type: none"> Will cut emissions by 20% from 1990 levels by 2020, or 30% if other big emitters take tough action Wants rich nations to make 80-95% cut by 2050 Wants poorer nations to slow emissions growth Says they face costs of \$150bn per year by 2020, of which EU will pay \$7bn-22bn from public finances 	<ul style="list-style-type: none"> The world's third-biggest GHG producer (11.8% of global emissions, 4,641mt CO2 equivalent) Emissions per head: 17th in the world (9t of CO2 equivalent) GDP (2008): \$18.3tn Amount of GHG emitted per \$1m of GDP: 315t Kyoto: Signed - has to get average emissions for 2008-2012 8% below 1990 level 	How serious a threat is global warming to you and your family? Very/Somewhat serious  62% Not very/Not at all serious  32% (Results represent the median of 23 out of the 27 EU states polled by Gallup)
Japan  "Japan will, with this assistance, support a broad range of developing countries which are taking measures of mitigation, as well as those which are vulnerable." <i>Japan delegation, 16/12/09</i>	<ul style="list-style-type: none"> Will cut emissions to 25% below 1990 levels by 2020, if other countries show similar ambition This amounts to a cut of 30% in 10 years, and is opposed by industry "Hatoyama initiative" will increase financial and technical assistance to developing countries Backs proposals in which each country would set its own commitments 	<ul style="list-style-type: none"> The world's seventh-biggest GHG producer (3.3% of global emissions, 1,293mt of CO2 equivalent) Emissions per head: 15th in the world (10t of CO2 equivalent) GDP (2008): \$4.9tn Amount of GHG emitted per \$1m of GDP: 301t Kyoto: Signed - has to get average emissions for 2008-2012 6% below 1990 level 	How serious a threat is global warming to you and your family? Very/Somewhat serious  75% Not very/Not at all serious  25%

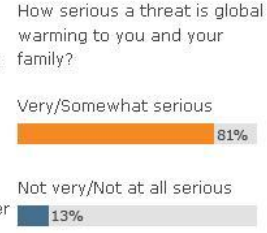
The nations and organisations below are also part of the G77 group of developing nations

India



"The most vulnerable country in the world to climate change is India." *Jairam Ramesh, India's environment minister, 3/12/09*

- Will cut CO2 emissions per unit of GDP by 20-25% from 2005 levels by 2020
- Rejects legally binding target, but wants rich countries legally bound
- Says rich countries are to blame for climate change and points to big gap in per capita emissions
- Wants 40% cut in rich country emissions by 2020
- Opposes goal of halving world emissions by 2050
- The world's sixth-biggest GHG producer (5% of global emissions, 1,963mt of CO2 equivalent)
- Emissions per head: 66th in the world (2t of CO2 equivalent)
- GDP (2008): \$1.2tn
- Amount of GHG emitted per \$1m of GDP: 655t
- Kyoto: Signed as a developing country, so not obliged to cut emissions



African union



"My proposal scales back our expectation with respect to the level of funding in return for more reliable funding." *Meles Zenawi of Ethiopia, 16/12/09*

- Wants climate funds to reach \$100bn a year by 2020 for rich countries to help poorer nations
- Wants at least 50% for vulnerable and poor regions such as African and small island states
- Like China, wants rich countries legally bound to cut emissions to 40% below 1990 level by 2020
- Describes 20 to 30% cuts as "unacceptable"
- The AU accounts for 8.1% of global emissions (3,164mt of CO2 equivalent)
- Emissions per head: 4t of CO2 equivalent
- GDP (2008): \$34bn
- Amount of GHG emitted per \$1m of GDP: 1,361t
- Kyoto: African nations signed as developing countries so are not obliged to cut emissions



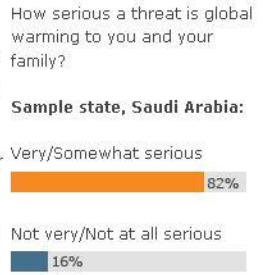
The African Union is a grouping of 52 African states

Gulf states



"We are among the most economically vulnerable countries." *Mohammad S. Al Sabban, Saudi Arabia's lead negotiator 8/10/09*

- Opec and Saudi Arabia seeking financial aid for oil-producers if new agreement requires cuts of fossil fuels
- Keen on a deal that would advance use of carbon capture and storage
- In 2007 Opec members pledged \$750m to fund climate change research
- Qatar and Abu Dhabi investing heavily in clean energy technology
- Gulf states account for 2.3% of global emissions (894mt of CO2 equivalent)
- Emissions per head: 25t of CO2 equivalent
- GDP (2008): \$468bn
- Amount of GHG emitted per \$1m of GDP: 875t
- Kyoto: Gulf States signed as developing countries so are not obliged to cut emissions



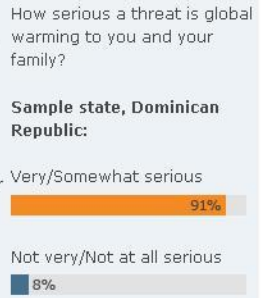
Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, UAE

Small islands



"The days of little money in the face of big problems are over." *Dessima Williams, head of the Alliance of Small Island States (Aosis), 9/10/09*

- Regard rising sea level as threat to their existence
- Seek to limit temperature rise to 1.5 degrees above preindustrial levels
- Want concentration of CO2 in atmosphere lowered from 380 to 350 parts per million
- Want global emissions to peak by 2015 and fall 85% below 1990 level by 2050
- Want at least 1% of rich country GDP spent on "climate-inflicted damage"
- The small island states account for 0.6% of global GHG emissions (246mt of CO2 equivalent)
- Emissions per head: 4t of CO2 equivalent
- GDP (2008): \$46bn
- Amount of GHG emitted per \$1m of GDP: 551t
- Kyoto: Aosis members signed as developing countries so are not obliged to cut emissions



Aosis is a bloc of 42 island and coastal states mostly in the Pacific and Caribbean

SOURCES: Potsdam Institute for Climate Impact Research and the World Bank. Gallup poll data taken in 2008. Between 528 and 2,493 people interviewed in each country, either by phone or face-to-face (the question was put to people who said they knew something about climate change). The margin of error ranges from +/-3.5 to +/-5.3%.

- hopes that new targets for after-the-Kyoto-protocol would be agreed on

from *Benito Muller: Copenhagen and the Accord*

- the UNFCCC Press website,³ provide precisely a set of criteria of what was needed for Copenhagen to be considered a success:

The Copenhagen agreed outcome need not resolve all details, but it must provide clarity on four key issues:

[1] *The first is clarity on the mid-term emission reduction targets that industrialized countries will commit to.*

[2] *Second, there must be clarity on the actions that developing countries could undertake to limit their greenhouse gas emissions.*

[3] *Third, it must define stable and predictable financing to help the developing world reduce greenhouse gas emissions and adapt to the inevitable effects of climate.*

[4] *And finally, it must identify institutions that will allow technology and finance to be deployed in a way that treats the developing countries as equal partners in the decision-making process.*

Copenhagen is to result both in a post-2012 outcome as well as important decisions and start-up finance to immediately kick-start action on climate change in 2010.

The main outcome of the summit, which was held in parallel to the Copenhagen Climate Change Conference and attended by over 110 heads of government and state, was the 'Copenhagen Accord'.

It was drafted in the final 24 hours of the conference by twenty-odd leaders convened by the Danish Prime Minister as 'Friends of the Chair'. The Accord contains 12 paragraphs in just over two pages.

Its key provisions are:

- *a recognition of the objective to reduce global emissions in order to hold the increase in global temperature below **2 degrees Celsius**, and a commitment to take action to meet this objective consistent with science and on the **basis of equity**;*
- *the commitment by **developed countries** – Annex I Parties to the Convention – to implement individually or jointly the quantified economy-wide emissions targets for 2020, to be submitted to the UNFCCC for inclusion in the first of the Appendices by 31 January 2010;*
- *the fact that **developing countries** – non-Annex I Parties to the Convention – will implement mitigation actions, including those to be submitted to the UNFCCC for inclusion in the second of the Appendices by 31 January 2010;*
- *collective commitments by developed countries to (i) **provide new and additional quick start resources**, approaching US\$30 billion for the period 2010 –12, and (ii) **jointly mobilize US\$100 billion dollars per annum by 2020** [to developing countries].*
- *the establishment of (i) a **High Level Panel** to study the contribution of the potential sources of revenue, including alternative sources of finance, towards meeting this goal, (ii) a **Copenhagen Green Climate Fund** as an operating entity of the financial mechanism of the*

Convention, and (iii) a **Technology Mechanism** to accelerate technology development and transfer.

*The drafting of these couple of pages was unorthodox, both **on account of the procedure and who was drafting**. Leaders rarely engage in drafting text. In fact, they rarely meet even bilaterally – let alone at a UN summit – without the certainty that an agreement has already been produced for them to sign. To return home empty handed is simply unthinkable. This is why there must have been a degree of panic when they arrived towards the end of the Conference, with no sign of an agreed outcome ready for their signatures. The process of trying to avoid the unthinkable was frantic. Time was in very short supply – and unfortunately these constraints did leave their marks.*

*The text of the accord, for one, is **poorly drafted**. This is in part explicable by the time pressures and the fact that the key people involved were largely novices in drafting UN decisions. Time constraints also did not allow for establishing a consensus outside the Friends of the Chair group, a fact which ultimately sealed the fate of the Accord: instead of being adopted by the Conference, it was **merely ‘taken note of’**.*

From Stern 2009 – Action and ambition for a global deal in Copenhagen (UNEP Policy Update)

Current developed country proposals

Table 1: Annex I - developed countries

Country	Description	Summary for 2020 emissions
US	Recent announcement that the US is prepared to table an emissions commitment of 17% below 2005 levels (3% below 1990 ⁷). Longer-term goals set out a pathway to an 83% below 2005 levels (80% reduction below 1990 levels) in 2050. Earlier draft legislation had additional provisions to buy 0.7Gt of forestry credits in 2020 and around \$3bn for technology and adaptation. Currently emissions are 15% above 1990 levels.	3% below 1990 levels Plus support for reduced deforestation?
EU	Committed to reduce emissions to 20% below 1990 levels (currently 12.5% below) and 30% below 1990 levels as part of an ambitious global agreement. Indicated willingness to pay its share of significant finance flows from developed to developing countries including public finance that could support additional mitigation (including REDD).	20 to 30% below 1990 levels. Public finance for additional mitigation elsewhere
Japan	Japan has committed to reduce emissions by 25% below 1990 levels as part of an effective and comprehensive agreement at COP 15.	25% below 1990 levels
Russian Federation	Russian Federation committed to reduce emissions by up to 25% below 1990 levels. Russian emissions were 36% below 1990 levels in 2007.	25% below 1990 levels
Canada	Committed to reduce emissions by 20% relative to 2006 levels (equivalent to 3% below 1990)	3% below 1990 levels
Australia	Australia proposed to reduce its emissions to 5-25% below 2000 levels (15% to 33% below 1990 levels). Adoption of the most ambitious target of 25% depends on five conditions being met ⁸ . If not all the conditions are met but there is an international agreement with all major emitters the target would be -15%.	15% to 33% below 1990 levels

Based on authors understanding of existing positions

- “Some of the intentions have not yet been legislated as national commitments or action plans and others are reliant on particular conditions being met (e.g. on international agreement).”

Table 2: Current developed country proposals in 2020 (Gt CO₂e)

	Low intentions	2020 Emissions (Gt)	High intentions	2020 Emissions (Gt)
US	-17% on 2005	5.9	-17% on 2005	5.9
EU	-20% on 1990	4.5	-30% on 1990	3.9
Japan	-25% on 1990	1.0	-25% on 1990	1.0
Other developed countries		5.1		5.0
Developed country total		16.3		15.7

- “So current proposals would take developed countries to around 16Gt (and a significant deviation from business as usual) and around 16% below 1990 levels. It is not possible to determine whether such commitments are enough to take the world onto a **44Gt** [*consistent with keeping temperature increase below 2°C*] pathway until it is combined with developing countries’ actions; and it would remain open to debate whether it represents an equitable share of the mitigation effort.”

Targets and actions announced by developing countries

Table 3: Non-Annex I - developing countries

Country	Description	2020 Summary
China	Announced policies such as the energy intensity target in the current 5 year plan and 2020 targets for renewable and nuclear are set to reduce emissions by around 10% below business as usual (BAU). Recent announcement to set carbon intensity of output to 40% to 45% below 2005 levels by 2020.	Carbon intensity target and existing domestic policies lead to a 10% reduction on 2020 BAU
India	Plans and policies outlined in National Plan and in the 11 th 5 year plan. Many are not quantified but domestic policy initiatives with policy targets collectively amount to a deviation from BAU of at least 7%. Recent announcement to set carbon intensity of output to 20% to 25% below 2005 levels by 2020.	Carbon intensity target and existing domestic policies lead to at least 7% reduction on 2020 BAU
Brazil	Announced target reduce its emissions by 36% to 39% on 2020 BAU levels (roughly 1/3 below 1990 levels) conditional on external financing and including significant REDD. Level of finance requirements not yet clear so not certain what is own action and what requires support. Had previously announced a National Action Plan that would reduce emissions by about 25% below BAU.	36% to 39% below 2020 BAU levels with external financial support
Indonesia	Pledged to reduce emissions below BAU by 26% unilaterally and 41% below with international	26% below 2020 BAU unilateral,

	support (around 1/6 to 1/3 below 1990 levels). The 26% target is to be achieved primarily through reduced emissions from deforestation and land use change.	41% below conditional
South Korea	Unilateral pledge to reduce emissions by 30% below their defined BAU (around 4% below 2005 levels).	30% below 2020 BAU
South Africa	Existing domestic policies expected to reduce emissions by about 10% from BAU. Government intention to follow a peak and decline scenario which allows for the initial build-up of base-load capacity, would equate to around 20% below BAU levels.	10% below 2020 BAU
Mexico	National plan (PECC) sets out detailed policies up to 2012 that are being enacted which are likely to reduce emission by around 5% in 2020 relative to BAU. Overall strategy to reduce emissions by 50% by 2050 implies emission being around 20% below BAU in 2020.	5% below 2020 BAU but longer term goals imply greater ambition

Some of the sore points in discussions (not necessarily limited to Copenhagen):

mainly based on Muller 2010

A. Benchmarking

In the context of the UNFCCC, benchmarking is the setting of emission reduction commitments measured against a particular base year. The only quantified target set in the original FCCC was for developed countries to reduce their greenhouse gas emissions to 1990 levels by the year 2000. There are issues with benchmarking that can make it potentially inequitable. For example, take two countries that have identical emission reduction commitments as measured against the 1990 base year. This might be interpreted as being equitable, but this is not necessarily the case. One country might have previously made efforts to improve energy efficiency in the years preceding the benchmark year, while the other country had not. In economic terms, the marginal cost curve for emissions reductions rises steeply beyond a certain point. Thus, to meet its emission reduction commitment, the country with initially high energy efficiency might face high costs. But for the country that had previously encouraged overconsumption of energy, e.g., through subsidies, the costs of meeting its commitment would potentially be lower.

See e.g. EU vs. US benchmarking.... so it seems that EU has done a better job before 2005....

B. Limit on temperature increase

- the Copenhagen Accord recognizes an objective to hold the increase in global temperature below 2°C
- for some small islands that might still prove fatal (want below 1.5°C)

C. Provision of resources to developing countries “to help them adapt”

...and specific for Copenhagen Accord:

D. Procedural objections

- why the accord was cooked up by representatives of 25 nations and not multilaterally, within the UNFCCC negotiations? ... well, to speed up the process and cook up at least something, but of course the other 100+ countries did not like it (and not only for not taking their requirements into account, many of the countries were indeed ok with the general contents)

E. International negotiations should have made much better progress long before the Copenhagen Summit

- why the US brought up the proposal about the financial support to developing countries the day before the end of the conference?

Where do we stand today?

US and China strike deal on carbon cuts in push for global climate change pact

Barack Obama aims for reduction of a quarter or more by 2025, while Xi Jinping sets goal for emissions to fall after 2030

- [Reaction to the emissions deal – live](#)
- [Interactive guide: How the world uses coal](#)

US President Barack Obama looks on as Chinese President Xi Jinping speaks during a joint press conference in the Great Hall of the People in Beijing Photograph: Greg Baker/AFP/Getty Images

The United States and China have unveiled a secretly negotiated deal to reduce their greenhouse gas output, with China agreeing to cap emissions for the first time and the US committing to deep reductions by 2025.

The pledges in [an agreement](#) struck between President Barack Obama and his Chinese counterpart, Xi Jinping, provide an important boost to international efforts to reach a global deal on reducing emissions beyond 2020 at a United Nations meeting in Paris next year.

China, the biggest emitter of greenhouse gases in the world, has agreed to cap its output by 2030 or earlier if possible. Previously China had only ever pledged to reduce the rapid rate of growth in its emissions. Now it has also promised to increase its use of energy from zero-emission sources to 20% by 2030.

The United States has pledged to cut its emissions to 26-28% below 2005 levels by 2025.

The European Union [has already endorsed a binding 40% greenhouse gas emissions reduction target by 2030.](#)

Speaking at a joint press conference at the Great Hall of the People, Obama said: “As the world’s largest economies and greatest emitters of greenhouse gases we have special responsibility to lead the global effort against climate change. I am proud we can announce a historic agreement. I commend President Xi, his team and the Chinese government for their making to slow, peak and then reverse China’s carbon emissions.”

He said the US emissions reductions goal was “ambitious but achievable” and would double the pace at which it is reducing carbon emissions.

“This is a major milestone in US-China relations and shows what is possible when we work together on an urgent global challenge.”

He added that they hoped “to encourage all major economies to be ambitious and all developed and developing countries to work across divides” so that an agreement could be reached at the climate change talks in Paris in December next year.

Xi Jinping said: “We agreed to make sure international climate change negotiations will reach agreement as scheduled at the Paris conference in 2015 and agreed to deepen practical co-operation on clean energy, environmental protection and other areas.”

China’s target to expand energy from zero-emission sources to around 20% by 2030 was “notable”, a White House statement said. “It will require China to deploy an additional 800-1,000 gigawatts of nuclear, wind, solar and other zero-emission generation capacity by 2030 – more than all the coal-fired power plants that exist in China today and close to total current electricity generation capacity in the United States.”

The UN's climate chief, Christiana Figueres, [said](#): “These two crucial countries have today announced important pathways towards a better and more secure future for humankind.”

Herman Van Rompuy, the president of the European Council, and Jean-Claude Juncker, the European Commission president, urged other countries to show their hand on emissions cuts: “We welcome the announcement today by the presidents of the United States and China on their respective post-2020 actions on climate change.

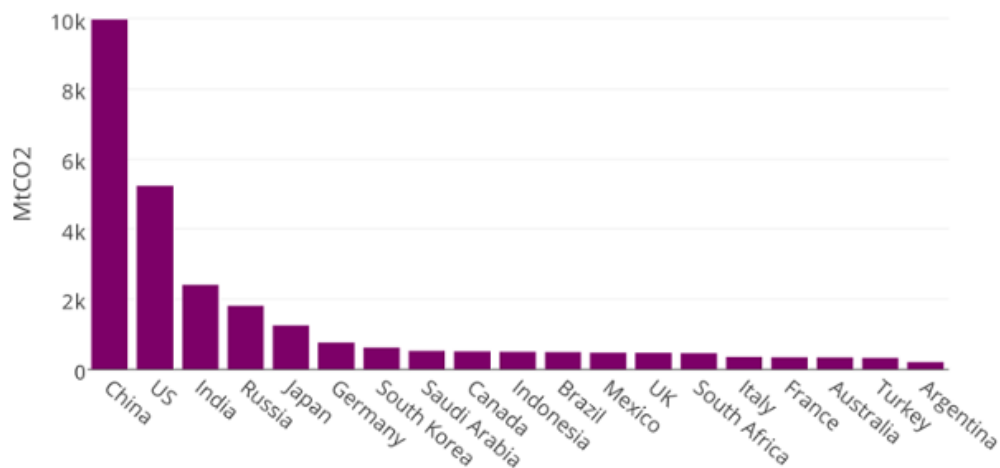
“The announcements to date cover around half of the global emissions. We urge others, especially the G20 members, to announce their targets in the first half of 2015 and transparently. Only then we can assess together if our collective efforts will allow us to fulfil the goal of keeping global temperature increases well below 2C.”

The new US goal will double the pace of carbon pollution reduction, though the Republican-controlled Congress is likely to oppose Obama's climate change efforts.

The US Senate's new Republican leader, Mitch McConnell, was quick to criticise the Beijing pact. “This unrealistic plan, that the president would dump on his successor, would ensure higher utility rates and far fewer jobs,” he said.

Administration officials argue the new target is achievable under existing laws.

Territorial emissions by G20 countries, 2013



Emissions of G20 countries. Photograph: Nick Evershed/Guardian Australia

Frances Beinecke, president of US-based environmental group the Natural Resources Defence Council, said: “These landmark commitments to curtail carbon pollution are a necessary, critical step forward in the global fight against climate change. We look forward to working with both governments to strengthen their efforts because we are confident that both can achieve even greater reductions.”

Senior US administration officials said the commitments, the result of months of dialogue between the world’s top two carbon emitters, would encourage other nations to make pledges and deliver “a shot of momentum” into negotiations for a new global agreement set to go into force in 2020.

Tao Wang, climate scholar at the Tsinghua-Carnegie Center for Global Policy in Beijing, said: “It is a very good sign for both countries and injects strong momentum [into negotiations] but the targets are not ambitious enough and there is room for both countries to negotiate an improvement.

“That figure isn’t high because China aims to reach about 15% by 2020, so it is only a five percentage point increase in 10 years, and given the huge growth in renewables it should be higher.”

Andrew Steer, president of the World Resources Institute, which promotes sustainable resource management, said the announcements would “inject a jolt of momentum in the lead up to a global climate agreement in Paris”.

“It’s a new day to have the leaders of the US and China stand shoulder to shoulder and make significant commitments to curb their country’s emissions,” he said.

Li Shuo, of Greenpeace East Asia, said the announcement showed that the world’s “two biggest emitters have come to the realisation that they are bound together and have to take actions together”.

The US-China deal on climate change is this century's most significant agreement. It puts G20 goals to shame

The real action has already taken place. The G20 policy agenda is a grab bag of second-order measures

The announcement by Barack Obama and Xi Jinping of an [agreement to limit greenhouse gas emissions](#) is a fine illustration of the difference between the real and ostensible functions of international summit meetings like the G20.

Ostensibly, the G20 leaders were supposed to agree on a plan to increase the rate of growth of GDP by two percentage points for the next five years. As an aspirational statement of what might happen given a perfect alignment of the economic stars, such an estimate would be highly optimistic. It would imply, for example, a doubling of the rate of growth in income per person for developed countries like Australia.

As a policy goal, to be achieved by specific measures agreed at the G20 meeting, the target is about as realistic as establishing world peace or ending poverty. The G20 policy agenda is a grab bag of second-order measures (the most substantive is spending 0.5% of GDP on infrastructure) that might marginally increase the long-term rate of economic growth but will have no perceptible impact over the next five years.

That's assuming if the G20 leaders can manage to push them through. All of the measures have been on the wishlists of various policy players for years, so the fact that they aren't already in place suggests that they face big political or institutional obstacles in the countries concerned.

By contrast, the US-China agreement on climate change is the real deal and illustrates the real function of events like G20. By bringing the leaders of 20 or more major countries together in one place, G20 facilitates one-on-one or small group meetings between them, either to respond to immediate crises (Abbott and Putin) or to announce the finalisation of negotiations that have been going on behind closed doors for months (Obama and Jinping).

Substantively, the deal is the most important in the long and tortured history of international climate negotiations. This bilateral deal, along with the recent unilateral commitments of the European Union, encompasses more than half of the world's carbon dioxide emissions and the great majority of emissions from developed countries. It now seems highly likely that most countries meeting at Paris in 2015 will bring commitments to substantial mitigation of emissions.

Of the two commitments, China's promise to reach peak carbon emissions by 2030 at the latest is the most significant. With emissions in most developed countries already falling, offsetting rising emissions elsewhere, this means that global emissions will peak around the same time.

The US commitment to accelerate reductions in emissions, reaching a level 26 to 28% below 2005 levels in 2025 is important for a couple of reasons. First (although comparisons are problematic), it puts the US ahead of the EU, historically the leader in the transition to a decarbonised economy. Second, the fact that Obama could announce with reasonable confidence is an indication that the economic costs will be low, and that the necessary policies can, if necessary, be implemented without Congressional assent.

The commitments made so far leave the world with just enough time to stabilize atmospheric concentrations of greenhouse gases at 450 ppm. But there is every reason to think that, once these goals are achieved easily, more ambitious goals will be set.

The remaining question is that of the holdouts: significant emitters who have made no commitment, or no adequate commitment, to rein in their admissions. India is the most important, and has legitimate objections to any deal that would require it to hold emissions permanently below the levels of richer countries. But there are many mechanisms, from technology transfer to a global allocation of tradeable carbon credits, that would permit wealthier countries to bear most or all of the costs of decarbonization in India.

Japan, which is still dealing with the sudden closure of most of its nuclear power stations following the Fukushima disaster is another special case. If a substantial portion are restarted, and the recent expansion of renewables is continued, Japan should be back on track before long. If this can't be done, Japan could buy credits to finance emissions reductions elsewhere (from India, for example).

That leaves two rich countries whose governments have simply chosen to shirk the task rather than promote change in their economies: Canada and Australia. Canada has withdrawn from the Kyoto Protocol, while Australia has offered only a 5% reduction in emissions relative to 2000 levels by 2020.

It is hard to believe that this position can be sustained in the face of the US-China agreement. The government remains officially committed to reductions of 15 to 25% if the world as a whole reaches an ambitious agreement, and it will be very difficult to argue that this goal has not been achieved, at least in broad terms.

The formal G20 meeting will go ahead as planned, with lengthy discussions and a forgettable final communique. But the real action has already taken place.

At the Warsaw climate talks in 2013 nations were encouraged to draw up post-2020 climate plans by the first quarter of 2015, ahead of the final negotiations for a post-2020 global pact late in the year.

The White House statement said: "Together the US and China account for over one-third of global greenhouse gas emissions. Today's joint announcement, the culmination of months of bilateral dialogue, highlights the critical role the two countries must play in addressing climate change.

"The actions they announced are part of the longer range effort to achieve the deep decarbonisation of the global economy over time. These actions will also inject momentum into the global climate negotiations on the road to reaching a successful new climate agreement next year in Paris."

US-China deal makes international carbon emissions pact 'very likely', says David King

Landmark deal between world's two biggest emitters makes an international agreement on climate change next year much more likely, says Foreign Office climate adviser



Sir David King, UK Government's chief scientific adviser Photograph: Dan Atkin/Alamy

[Damian Carrington](#)

Thursday 13 November 2014 10.14 GMT

An international deal to limit carbon emissions has been made much more likely by [a climate agreement signed on Wednesday](#) between China and the US, says Sir David King.

The UK foreign secretary's special representative for climate change said that the landmark deal between the world's two biggest emitters was "very welcome" in helping UN climate negotiations ahead of a key summit in Paris next year.

"It means we are very likely to get an agreement in Paris in December 2015," the deadline set by the world's nations, he said.

King said that climate change was civilisation's biggest diplomatic challenge of all time. "Climate change is a global commons problem," he told the Guardian in an interview. "It

requires all major nations to take action and I can think of no other situation that has put the world in that position.”

“In terms of challenges to civilisation, climate change is the biggest diplomatic challenge of all time,” said King. The statement is even stronger than the controversial one he made as chief scientific advisor to the UK government in 2004, when he warned that [global warming was a greater threat than international terrorism](#).

He said the UK’s tough action to slash emissions at home and the billions it spends on overseas climate aid were “critically important” to creating the trust between nations required to seal a global deal. He also said the ongoing switch to renewable energy could hugely boost the economy of the UK and Europe by retaining the €500bn (£395) that drains out of the bloc every year on imported fossil fuels.

“There is no country doing as much as Britain on climate diplomacy,” he said. The key to that is the UK’s ambitious domestic action and large climate aid budgets, he said. Both have been attacked as pointless by some because [UK emissions are tiny in a global context](#) and some aid-receiving nations are developing fast.

“Gaining respect and trust is a big part of overcoming barriers in the climate negotiations,” King said. “Saying we are reducing our emissions by 80% by 2050 allows us in negotiations to say – and there’s no doubt I have used this – ‘Mr President, we are doing this. What are you doing?’. This has created some tremendous outcomes.”

The UK will spend £3.9bn on climate change action overseas by 2016, via its [International Climate Fund](#). “If our overseas aid was a fraction of what it is now, our position of trust around the world would be massively reduced,” King said.

Bilateral talks behind the scenes, particularly like Wednesday’s milestone deal between the US and China, are critical to building a global deal, King said. “It is not so easy in the multilateral [UN] meetings, which turn into a bit of a circus.”

King said one critical difference between the situation today and [the doomed climate summit in Copenhagen in 2009](#) is the ability of the US to act.

Then, an international treaty was on the table and would have needed ratification by the US congress, a political impossibility given Republican opposition. But the deal now

being discussed is comprised of “nationally determined contributions”. As this is a national – not international – pledge, King says president Barack Obama can sign the global deal without Congress approval.

King says China has moved a long way from the reluctant position it took in 2009. “The Chinese are very keen to see international movement on this issue. It is of course driven, at least in part, by pollution.” He pointed out that, on top of [Wednesday’s pledge to start reducing its total carbon emissions by 2030](#), a quarter of China’s economy will be subject to a new cap-and-trade carbon market, with the entire economy expected to be covered by 2016.

King said the plummeting cost of renewable energy was the key to cutting emissions and that the EU had done the world a service because its subsidies had created the renewables market that drove the fall in costs.

“We will crack this if intermittent renewable energy plus storage is cheaper than fossil fuel power,” he said. “For sunny parts of the world, it’s going to be there by 2020 and for the rest of the world by 2025.”

“One of the big advantages of going down this route is making use of indigenous energy sources,” King said, not just because this avoids energy security problems as seen with Russian gas supplies but also because it keeps huge amounts of money within nations.

“If the UK moves, as is the plan, our ground transport sector on to the electricity grid by 2050 we will not need to import any oil,” he said. “The saving to the UK will be immense.” King said the same applied to the €500bn the EU spends on imported fossil fuels each year. “I believe that one of the reasons the EU economic recovery is stalling is the big drain in euros for the purchase of oil.”

- Sir David King spoke at “[The road to Paris](#)” event on Wednesday jointly organised by the French Embassy in London and Imperial College London.

US-China climate deal boosts global talks but Republicans vow to resist

- US to double pace of emissions cuts, China to cap carbon pollution by 2030

- Senator McConnell: deal means 'higher utility rates and far fewer jobs'
- [Interactive: how the world uses coal](#)
- [Guardian analysis: 'a historic milestone'](#)

[Suzanne Goldenberg](#) in Washington, [Lenore Taylor](#) in Canberra and [Tania Branigan](#) in Beijing

Wednesday 12 November 2014 17.31 GMT

A secretly negotiated agreement between the US and China to lower greenhouse-gas output faced a wall of opposition on Wednesday from [Republicans](#) in Washington, who threatened to use their control of both houses of Congress to thwart the plan.

Under the deal, unveiled unexpectedly in Beijing early on Wednesday, [China](#) committed for the first time to cap its output of carbon pollution by 2030. Beijing also promised to increase its use of zero-emission energy sources, such as wind and solar power, to 20% by 2030.

The United States agreed to double the pace of the cuts in its emissions, reducing them to between 26% and 28% below 2005 levels by 2025.

The deal struck between President Barack Obama and his Chinese counterpart, Xi Jinping, provides an important boost to efforts to reach a global deal to fight climate change at a United Nations meeting in Paris next year. The accord also removes the Republicans' main rationale for blocking Obama's efforts to cut carbon pollution – the claim that China is unwilling to undertake similar cuts.

But Republicans in the US Congress reacted strongly against the deal on Wednesday. The party already held a majority in the House of Representatives, and the midterm elections last week also delivered them control of the Senate, where the Republican leader, Mitch McConnell, said Obama would not be in the White House long enough to see the plan through.

“This unrealistic plan, that the president would dump on his successor, would ensure higher utility rates and far fewer jobs,” he said.

In his first meeting with the incoming Republican majority, McConnell, who represents the coal state of Kentucky, said he was “distressed” at the deal, adding that the

diplomatic breakthrough would have no effect on his disdain for international climate negotiations.

“As I read the agreement it requires the Chinese to do nothing at all for 16 years while these carbon emissions regulations are creating havoc in my state and around the country,” he said.

The Republican speaker of the House, John Boehner, also attacked the deal, and suggested he would move legislation to further limit Obama’s ability to deliver the carbon pollution cuts he promised.

The White House has said the US can deliver the promised reductions in greenhouse gas emissions through existing regulations, including the Environmental Protection Agency’s new rules for power plants, which are the core of Obama’s climate agenda.

But Boehner said: “Republicans have consistently passed legislation to rein in the EPA and stop these harmful policies from taking effect, and we will continue to make this a priority in the new Congress.”

Jim Inhofe, the Oklahoma Republican and climate denier who is poised to take over the Senate environment and public works committee in January, said China’s end of the bargain was just a ploy to buy time.

“It’s hollow and not believable for China to claim it will shift 20% of its energy to non-fossil fuels by 2030 and a promise to peak its carbon emissions only allows the world’s largest economy to buy time,” he said. “As we enter a new Congress I will do everything in my power to rein in and shed light on the EPA’s unchecked regulations.”

President Obama hailed the deal at a joint press conference with his Chinese counterpart at the Great Hall of the People. “As the world’s largest economies and greatest emitters of greenhouse gases we have special responsibility to lead the global effort against climate change,” he said. “I am proud we can announce a historic agreement. I commend President Xi, his team and the Chinese government for the commitment they are making to slow, peak and then reverse China’s carbon emissions.”

President Xi said: “We agreed to make sure international climate change negotiations will reach agreement as scheduled at the Paris conference in 2015 and agreed to deepen practical cooperation on clean energy, environmental protection and other areas.”

The early opposition in Washington raised questions about whether the US and China will be able to deliver on their respective commitments. [Obama administration](#) officials argue the new US target is achievable under existing laws.

But with Republicans in control of Congress, there is virtually no prospect of new climate legislation, and there could be delays that would weaken regulations put in place by the EPA before they come into force. “The US target looks like it’s going to be really tough to meet without new laws,” Michael Levi, an energy and environment fellow at the Council on Foreign Relations, wrote in a blog post.

“The EPA power plant rules as they’re currently proposed are already spurring plenty of pushback; pressing them further will be a tall political and technical task. In particular, it’s near-impossible to imagine achieving these goals simply with actions taken during the Obama administration. President Obama’s administration may have developed and negotiated these numbers, but his successor will determine whether they’re achieved.”

China also faces technical challenges to reaching its targets.

The White House said in a statement that China could reach peak emissions even earlier than 2030 “based on its broad economic reform programme, plans to address air pollution and implementation of President Xi’s call for an energy revolution”.

But the White House acknowledged it would be more difficult for China to scale up to 20% energy from zero-emission sources by 2030.

“It will require China to deploy an additional 800-1,000 gigawatts of nuclear, wind, solar and other zero-emission generation capacity by 2030 – more than all the coal-fired power plants that exist in China today and close to total current electricity generation capacity in the United States,” the White House said.

Some campaign groups also pointed out that the agreement – while ambitious – still did not go as far as scientists say is needed to limit dangerous warming.

The European Union has already endorsed a binding 40% greenhouse gas emissions reduction target by 2030.

Diplomats said they hoped that the US-China deal would provide momentum to climate negotiations.

Officials are to meet in Lima at the end of the month to begin the last phase of negotiations for a global deal to cut emissions in Paris. As part of those talks, countries will also be preparing to put forward their own targets for cutting emissions by early 2015.

Herman Van Rompuy, the president of the European Council, and Jean-Claude Juncker, the European Commission president, urged other countries to show their hand on emissions cuts: “We welcome the announcement today by the presidents of the United States and China on their respective post-2020 actions on climate change.

“The announcements to date cover around half of the global emissions. We urge others, especially the G20 members, to announce their targets in the first half of 2015 and transparently. Only then we can assess together if our collective efforts will allow us to fulfil the goal of keeping global temperature increases well below 2C.”

Tao Wang, climate scholar at the Tsinghua-Carnegie Center for Global Policy in Beijing, said: “It is a very good sign for both countries and injects strong momentum [into negotiations] but the targets are not ambitious enough and there is room for both countries to negotiate an improvement.

“That figure isn’t high because China aims to reach about 15% by 2020, so it is only a five percentage point increase in 10 years, and given the huge growth in renewables it should be higher.”

Andrew Steer, president of the World Resources Institute, which promotes sustainable resource management, said the announcements would “inject a jolt of momentum in the lead-up to a global climate agreement in Paris”.

“It’s a new day to have the leaders of the US and China stand shoulder to shoulder and make significant commitments to curb their country’s emissions,” he said.

Source: The Guardian