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

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

Q: What do you know about the development of US environmental policy?

- **how much centralized?**
- **areas of main focus?**
- **supporting institutions?**
- **international negotiations?**

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. 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 sorts of difficulties that slowed the integration** and making of the common environmental standards
- The EC treaty (1958) did not contain any explicit reference to the environment; not until the Single European Act of 1987.
    - **the treaty is not a constitution**, 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 interests; 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 the **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**
- ⇨ at the 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 a 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 the 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**
-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	-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 -more interests in the US industry rather than in global

-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	environment - only commitments that bring economic advantage; -no compliance mechanisms and control procedures that might impinge on national sovereignty - believe in market solution,

CAUSES OF DIVERGENCIES	
EU	**USA**
-stronger commitment to social and also environmental concerns, -history of governments interfering in social (and environmental) areas -EU environmental measures seen as harmonizing rather than centralizing -other than "economic" approaches; 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	-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

Discussion: Do we need to coordinate internationally? Why? or Why not? Do you think such coordination is possible? What are the difficulties? Remember the experiment we did in class? How easy it was to coordinate?

- 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 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 GHG emissions for individual countries and contains **no enforcement mechanisms => legally non-binding**.
- Instead, the treaty provides for updates = "**protocols**" that set **mandatory limits**
- The principal update is the **Kyoto Protocol**
- it was **open for signature** from March 16, **1998** to March 15, 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 February 16, 2005** in accordance with Article 23 = on the 90th day after 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.

- there is **192 Parties** (191 States and the EU) to the Kyoto Protocol to the UNFCCC (complete list: http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php).
- one of its first tasks was **to establish national GHG** inventories of **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.

Kyoto protocol

- 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) committed 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, chlorofluorcarbons 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

Snapshot at Kyoto's result (1990 vs. 2012 emissions)

How successful was the Kyoto Protocol?

*The headline results tell us that between 1990 and 2012 the **original Kyoto Protocol** parties reduced their CO2 emissions by **12.5%,** which is well beyond the 2012 target of **4.7%** (CO2 only, rather than greenhouse gases, and including Canada*). The **Kyoto Protocol** was therefore a huge **success**. Feb 4, 2015*

*But at the same time **Why did Kyoto fail?***

*Without the US. Under the **Kyoto** Protocol industrialized countries agreed to reduce their greenhouse gas emissions by an average of 5.2 per cent by 2012 based on 1990 levels. The agreement entered into force in 2005 after being ratified by 127 countries. The US has not ratified the agreement. Another problem is non-participation of developing countries which continue to grow and increase their emissions. Therefore, the real question remains, whether the "success" of participating countries outweighs the growth of emissions in non-participating countries…*

→ **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 gases 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, EU, 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, USA

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 27 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.
- countries classified as developed countries which pay for costs of developing countries:

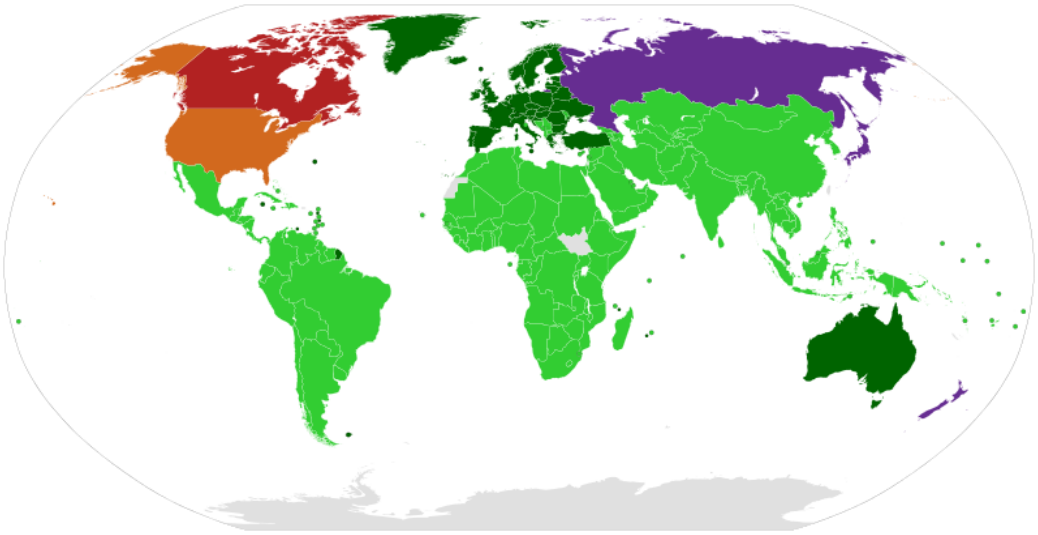
  Australia, Austria, Belgium, Canada, Denmark, European Union, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, USA

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.

- 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

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

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- **Flexible mechanisms**
  - **International Emissions trading** (cap and trade, e.g. EU ETS)
  - **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).
  - **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** of the protocol includes the individual targets for 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 Kyoto Protocol **compliance mechanism** - to facilitate, promote and enforce compliance with the commitments under the Protocol → The Compliance Committee
    - a facilitative branch (to provide advice and assistance to Parties in order to promote compliance)
    - an enforcement branch (with responsibility to determine consequences for Parties not meeting their commitments).
- **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. China[1] – 17%, 5.8
    2. United States[3] – 16%, 24.1
    3. European Union-27[3] – 11%, 10.6
    4. Indonesia[2] - 6%, 12.9
    5. India – 5%, 2.1
    6. Russia[3] – 5%, 14.9
    7. Brazil – 4%, 10.0
    8. Japan[3] – 3%, 10.6
    9. Canada[3] – 2%, 23.2
    10. Mexico – 2%, 6.4

    or see here some interactive charts:
    http://www.tsp-data-portal.org/TOP-20-emitter#tspQvChart

- **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.

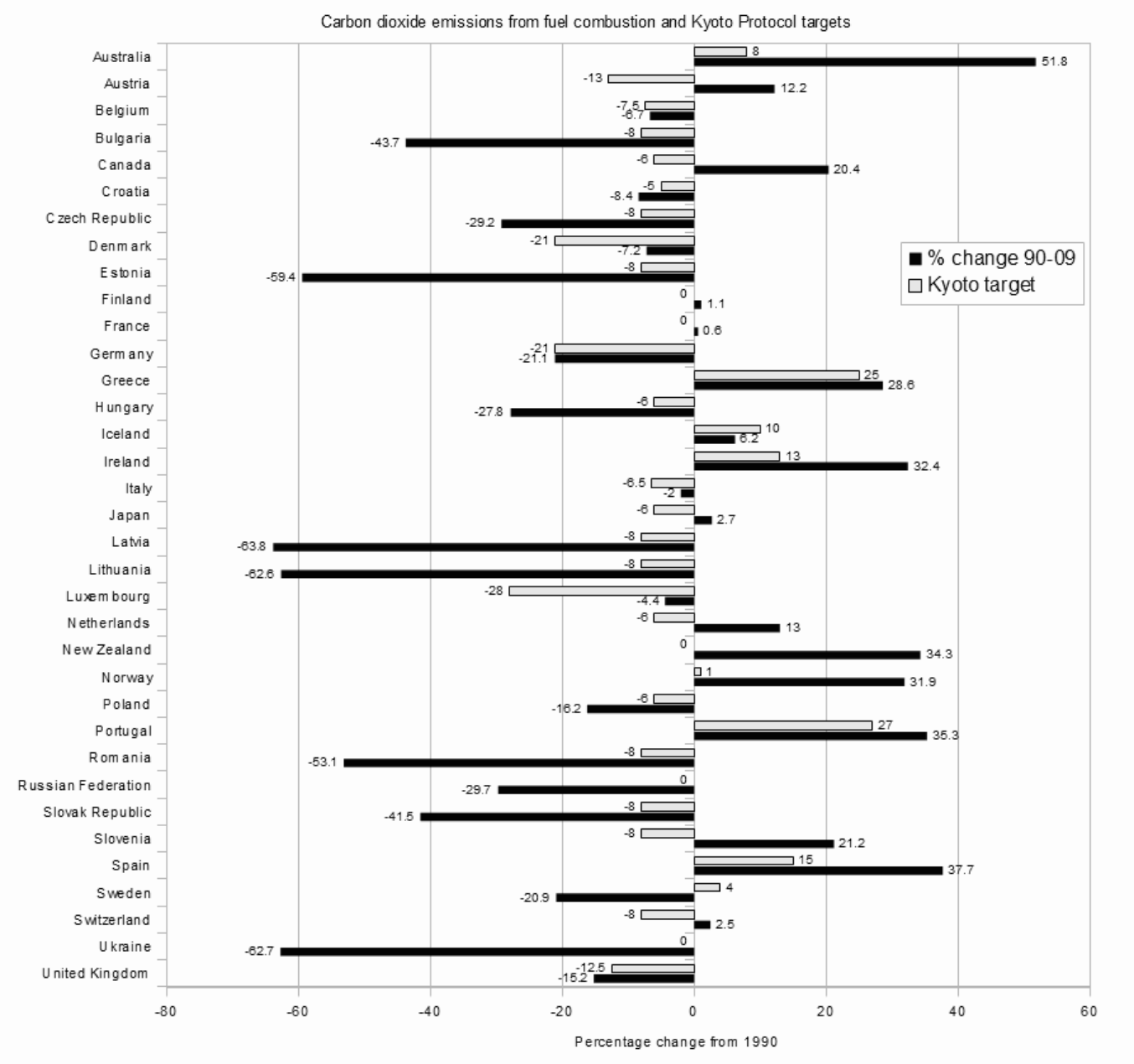
    → **developing countries were not subject to emission reduction commitments** in the first Kyoto commitment period.

    → **the large potential for growth in developing country emissions** still made negotiations on this issue **tense**… (quantitative commitments to be adopted in later periods)

    - **Base year**
        - 1990 is the main base year (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)
            - UK: emissions had declined after 1990 due to a switch from coal to gas (lower emissions); due to privatization of coal mining
            - GER: after reunification of West and East Germany, East Germany's emissions fell dramatically (collapse of East German industry after fall of communism).

- **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 on actual emission data)
    - 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**.
        - e.g. in China emissions have risen strongly over 1990-2005: often by more than 10% year.
        - per-capita emissions in non-Annex I countries are mostly still much lower than in industrialized countries.
        - no quantitative emission reduction commitments, but committed to mitigation actions (e.g. in China a national policy program which included the closure of old, less efficient coal-fired power plants)



SELECTED CONFERENCES OF THE PARTIES

- annual meetings of parties to the UNFCCC
- 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. The most recent developments, I'm sure you are aware of…
- **Q: What is the public opinion in the US? Your opinion?**

2000 - COP 6, The Hague, Netherlands

- The discussions evolved rapidly into a high-level negotiation over the major political issues. These included
  - major controversy over the United States' proposal to allow credit for **"carbon sinks"** in forests and agricultural lands, and
  - **satisfying a major proportion of the U.S. emissions reductions in this way**;
  - **disagreements over consequences for non-compliance** by countries that did not meet their emission reduction targets;
  - 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.
  - 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**.
  - 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).

- **no quantitative limit on the credit a country could claim**

2. **Carbon sinks**: Credit for broad activities that absorb carbon from the atmosphere or store it
    - forest and cropland management,
    - re-vegetation,
    - no over-all cap on the amount of credit for sinks activities (some country-specific caps)
3. **Compliance**: broad outlines of consequences for failing to meet emissions targets (to make up for 1ton shortfall by 1.3 tons, suspension of the right to sell surplus credits, requirement of compliance action plan for those not meeting targets); final action on compliance was deferred to COP 7
4. **Financing**: Three new funds were agreed upon to provide assistance for needs associated with climate change;
    - a fund for climate change to support climate measures;
    - a least-developed-country fund
    - 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

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 on 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.
- the ambitions and goals somewhat changed after this conference (see more detail below)

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), with new commitments
- 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% (vs. almost 64% in the first commitment period) 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 which 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 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.
- 1st commitment period: 37 industrialized countries and the European Community committed to reduce GHG emissions to an average of 5% against 1990 levels.
- 2nd 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";
- small islands are not happy about too little progress; others see the “loss and damage mechanism” as a progress towards assigning liabilities;
- still lots of work to be done as regards the financing and the “post-Kyoto” agreements

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2014 – COP20/MOP20, Lima

- wave of optimism after the agreement between China and the US in mid-November

> ***Few details on US-China deal in November 2014...***
>
> - *Together the US and China account for over one-third of global greenhouse gas emissions*
> - *China promised to reach peak carbon emissions by 2030 at the latest and to increase its use of energy from zero-emission sources to 20% by 2030. Xi Jinping said: "**We agreed to make sure international climate change negotiations will reach agreement as scheduled at the Paris conference in 2015**"*
> - *The US committed to accelerate reductions in emissions, reaching a level 26 to 28% below 2005 levels in 2025*
> - *the Republicans in the US Congress reacted strongly against the deal "This unrealistic plan, that the president would dump on his successor, would ensure higher utility rates and far fewer jobs." But then the presidential elections took place…*

- 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)

2015 – COP21/MOP21, Paris

- very important one, as countries needed to agree on continuation of Kyoto after 2020
- comes after announcement of US-China carbon deal (more detail later) => high hopes
- negotiated the **Paris Agreement**
  - a global agreement on the reduction of climate change
  - a consensus of the representatives of the 196 parties
  - it will become legally binding if joined by at least 55 countries which together represent at least 55 percent of global greenhouse emissions (such parties will need to sign the agreement in New York between 22 April 2016 and 21 April 2017, and also adopt it within their own legal systems)
- agreed to
  - limit global warming to less than 2 degrees Celsius(°C) compared to pre-industrial levels; the parties will also "pursue efforts to" limit the temperature increase to 1.5°C (this will require zero emissions sometime between 2030 and 2050)
  - calls for zero net anthropogenic GHG emissions to be reached during the second half of the 21st century

- Prior to the conference, 146 national climate panels publicly presented draft national climate contributions (= "Intended Nationally Determined Contributions", INDCs) -> estimated to limit global warming to 2.7°C by 2100
- No detailed timetable or country-specific goals for emissions were incorporated into the Paris Agreement! (unlike Kyoto)
- "**Name and shame**" system
  - Each country that ratifies the Paris Agreement has to set a target for emission reduction, but the amount is be voluntary
  - no mechanism to force a country to set a target by a specific date
  - no enforcement measures if the target is not met
- **See much more details in Bodansky, 2016**
  - nicely summarizes the developments and state of international negotiations, individual demands etc. prior to COP21
  - *"PARIS agreement*
    - *is neither too strong (less individually committing, weaker in enforcement system) nor too weak (more parties involved)*
    - *it is a bottom-up approach"*
    - *"the world's greatest diplomatic success"*
    - the negotiations that eventually led to PARIS started in 2005… right after the disappointment in Copenhagen, the leaders understood that they needed to take a different approach than that of Kyoto protocol…actually the failure of negotiations in Copenhagen probably helped to point the way forward…[bottom of p.6, Bodansky]
    - also talks about how choice of single world (shall as opposed to should) could have made so much of a difference… (even though in light of recent political developments in the US…..)
    - make sure to read the article before trying to answer the question from this week's worksheet!

2016 – COP22/MOP21, Marrakesh

- in the shadow of US presidential elections…."*It will go down in history as the Trump COP"*
- little new information, call for all nations to "honor promises made in Paris"
- main goal: to put Paris agreement into action
- During the conference, 11 governments ratified the Paris climate agreement – Australia, Botswana, Burkina Faso, Djibouti, Finland, Gambia, Italy, Japan, Malaysia, Pakistan and the UK. They brought the total for November to 22 and since the beginning of September a cavalcade of 88 nations have joined the party (the total needed for the agreement to become law, which it did in the week before the conference began, was 55 nations representing 55% of global emissions)
- The US, Canada, Mexico and Germany published strategies for radically cutting their greenhouse gas emissions by mid century at UN talks, meeting a requirement of the Paris Agreement.
- Countries agreed that **2018** will be the next major meeting of talks under the Paris Agreement, and also that they'll try and get the rulebook for it ready that year too.
- see e.g. http://www.climatechangenews.com/2016/11/18/cop22-headlines-what-did-marrakech-climate-summit-deliver/

- As of November 2017, 195 UNFCCC members have signed the agreement, and 170 have become party to it.
- The Paris Agreement entered into force on 4 November 2016, thirty days after the date on which at least 55 Parties to the Convention accounting in total for at least an estimated 55 % of the total global greenhouse gas emissions have deposited their instruments of ratification, acceptance, approval or accession with the Depositary.
- In June 2017, U.S. President Donald Trump announced his intention to withdraw the United States from the agreement, causing widespread condemnation both internationally and domestically. Under the agreement, the earliest effective date of withdrawal for the U.S. is November 2020.

COP 24 Katowice 2018

- The conference agreed on rules to implement the Paris Agreement, which will come into force in 2020 – the rulebook on how governments will measure, and report on their emissions-cutting efforts.
- Due to difficulty to reach agreement between parties, some difficult questions such as ways to scale up existing commitments on cutting emissions, ways to provide financial help for poor countries, wording that does not allow double counting and whether countries are doing enough to cut their emissions (in the light of the IPCC report) were postponed to the next conference.
- some of the developed countries and few businesses made their contributions to PA funds (adamptation, green climate,…)

Some of the sore points in discussions (throughout the years of negotiations):

mainly based on Muller 2010

A. Benchmarking

- 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.
- can potentially be inequitable:
    - take two countries that have identical emission reduction commitments as measured against the 1990 base year.
    - 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 => 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.

compare e.g. EU vs. US ambitions….. 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"

On Necessity of developing countries' contribution to efforts (see Stern 2009)

→ the author tries to sum up individual ambitions (as of 2009) to see whether they sum up to sufficient reductions... see the table below

→ obviously not….the 2009 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."*

Table 2: Current developed country proposals in 2020 (Gt CO_2e)

	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**