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INTERPARLIAMENTARY COMMITTEE MEETING

European Parliament - national Parliaments

COMMITTEE ON THE ENVIRONMENT, PUBLIC HEALTH AND FOOD SAFETY

From COP Paris to 2050: a roadmap towards an innovative low-carbon, resource-efficient Europe

30 March 2015
European Parliament
Room 4Q2
15.00 - 18.30

Ahead of the international climate change conference "COP 21" in Paris in December 2015, the EP's Committee on the Environment, Public Health and Food Safety would like to debate these important issues with national Parliamentarians from across the EU. The Interparliamentary Committee Meeting on "From COP Paris to 2050: a roadmap towards an innovative low-carbon, resource efficient Europe" will be divided into two sessions. The first session will focus on **COP 21 and the role of European environmental diplomacy**; the second session will be devoted to a discussion on **European environmental policy beyond COP 21**. The following **background information** and documentation, is to serve as guidance for the meeting and debates.

Executive summary

Over the last two decades, the European Union (EU) has recognised not only the climate change challenge but also the potential of a coherent climate and energy policy. The overarching objective of EU climate policy is to limit global warming to 2°C above pre-industrial average temperature levels. As a result, a number of important measures have been put in place to achieve this objective, not least the climate and energy package of 2008.

In this regard, the EU is already committed to reducing its greenhouse gas emissions by at least 20% below 1990 levels by 2020, while improving energy efficiency by 20% and increasing the share of renewable energy sources to 20%.

In October 2014, the European Council took an important step towards a low carbon and resource-efficient Europe, by adopting conclusions on the EU's Climate and Energy Policy Framework for 2030. In particular, a greenhouse gas emission reduction target of at least 40% (compared to 1990) is established. This 2030 policy framework aims to make the European Union's economy and energy system more competitive, secure and sustainable and also sets a target of at least 27% for renewable energy and energy efficiency by 2030. It will provide the basis for the EU's position ahead of the international climate negotiations taking place in Paris in December 2015 (COP 21) with a view to reaching a new, global climate agreement.

I. BACKGROUND INFORMATION ON COP 21 AND EU CLIMATE DIPLOMACY

1. Scene setter - background on climate change and climate negotiations[1]

A. Overview of climate change, its causes and its consequences

The term climate change refers to **long-term alterations in temperature, precipitation, wind, humidity, and other components of weather**. Over the past 2.5 million years, the earth has warmed and cooled, cycling between glacial and interglacial periods during which average global temperatures moved up and down by 4–7°C. During the last glacial period, which ended roughly 12,000 years ago, global temperatures were, on average, 5°C cooler than in the mid-twentieth Century.

The present climate period (known as the Holocene), is remarkable for its stability: **temperatures have largely remained within a range of 2–3°C**. This stability has enabled the successful population and cultivation of much of the earth's landmass by humanity. Current climate change differs from that in the past not only because its primary cause is human activities but also because **its pace is faster**. The 5°C of warming that occurred at the end of the last ice age took roughly 5000 years, whereas such a temperature increment may occur within the next 150 years unless the release of greenhouse gases is substantially reduced in coming decades. **The current rate of warming on Earth is unprecedented in the last 50 million years.** Climate science, although still a relatively new discipline, has provided an ever-clearer picture of how the changing chemistry of the atmosphere has influenced, and will continue to influence, the global climate.

Causes: greenhouse gases

Greenhouse gases are a group of gases in Earth's atmosphere that absorb infrared radiation and thus **retain heat inside the atmosphere**. In the absence of these gases, the earth's average temperature would be about 33°C colder.

Table 1: Anthropogenic greenhouse gas and their human sources

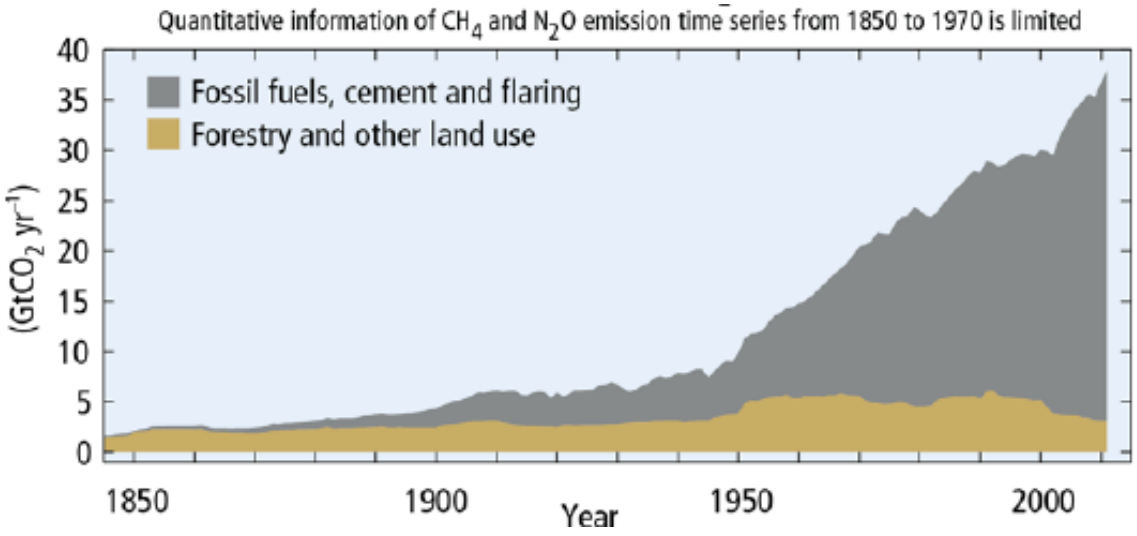
Gas	Human Sources
Carbon Dioxide (CO_2	Fossil fuel combustion, deforestation
Methane (CH_4)	Fossil fuel production, ruminant animals, decomposition in landfills
Nitrous oxide (N_2O)	Fertilizer, fossil fuel combustion, biomass burning, livestock manure
Halocarbons	Refrigerants, electrical insulation, aluminium production

Anthropogenic greenhouse gas emissions have increased since the pre-industrial era, driven largely by economic and population growth, and are now higher than ever. This has led to atmospheric concentrations of carbon dioxide, methane and nitrous oxide that are unprecedented in at least the last 800,000 years. Their effects, together with those of other anthropogenic drivers, have been detected throughout the climate system and are extremely likely to have been the dominant cause of the observed warming since the mid-20th century.

[1] This chapter is largely based on the work of the UN's Intergovernmental Panel on Climate Change (IPCC).

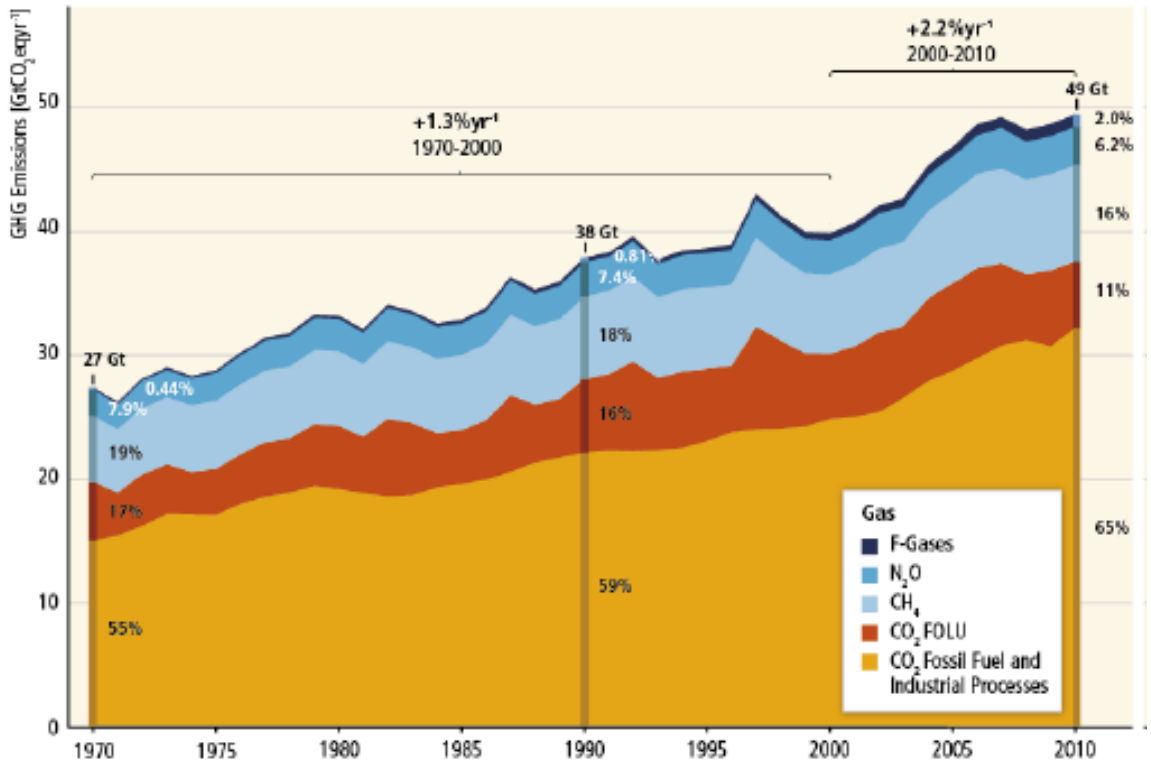
As a result, it is extremely likely that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcing together[2].

Figure 1: global anthropogenic CO2 emissions



Source: IPCC

Figure 2: total annual anthropogenic greenhouse gas (GHG) emissions (gigatonne of CO2-equivalent per year



Source: IPCC

[2] Source: Climate change 2014, Synthesis Report, Summary for Policymakers, IPCC

Consequences:

In recent decades, changes in climate have caused impacts on natural and human systems on all continents and across the oceans. Impacts are due to observed climate change, irrespective of its cause, indicating the sensitivity of natural and human systems to changing climate.

Evidence of observed climate-change impacts is strongest and most comprehensive for natural systems. In many regions, changing precipitation or melting snow and ice are **altering hydrological systems, affecting water resources** in terms of quantity and quality. Many terrestrial, freshwater, and marine species have shifted their geographic ranges, seasonal activities, migration patterns, abundances, and species interactions in response to ongoing climate change. Some impacts on human systems have also been attributed to climate change, with a major or minor contribution of climate change distinguishable from other influences. Assessment of many studies covering a wide range of regions and crops shows that **negative impacts of climate change on crop yields** have been more common than positive impacts. Some impacts of **ocean acidification** on marine organisms have been attributed to human influence.

Changes in many **extreme weather and climate events** have been observed since about 1950. Some of these changes have been linked to human influences, including a decrease in cold temperature extremes, an increase in warm temperature extremes, an increase in extreme high sea levels and an increase in the number of heavy precipitation events in a number of regions.

Future risks and impacts caused by a changing climate

Climate change will amplify existing risks and create new risks for natural and human systems. Risks are unevenly distributed and are generally greater for disadvantaged people and communities in countries at all levels of development.

Climate change is projected to **undermine food security**. Due to projected climate change by the mid-21st century and beyond, global marine species redistribution and marine biodiversity reduction in sensitive regions will challenge the sustained provision of fisheries productivity and other ecosystem services. For wheat, rice, and maize in tropical and temperate regions, climate change without adaptation is projected to negatively impact production for local temperature increases of 2°C or more above late-20th century levels, although individual locations may benefit. Global temperature increases of ~4°C or more above late-20th century levels, combined with increasing food demand, would pose large risks to food security globally. Climate change is projected to **reduce renewable surface water and groundwater resources** in most dry subtropical regions, intensifying **competition for water** among sectors.

Until mid-century, projected climate change will impact **human health** mainly by exacerbating health problems that already exist. Throughout the 21st century, climate change is expected to lead to increases in ill-health in many regions and especially in developing countries with low income, as compared to a baseline without climate change.

By 2100, the combination of high temperature and humidity in some areas for parts of the year is expected to **compromise common human activities**, including growing food and working outdoors.
Rural areas are expected to experience major impacts on water availability and supply, food security, infrastructure, and agricultural incomes, including shifts in the production areas of food and non-food crops around the world.

In urban areas, climate change is projected to **increase risks for people, assets, economies and ecosystems**, including risks from heat stress, storms and extreme precipitation, inland and coastal flooding, landslides, air pollution, drought, water scarcity, sea-level rise, and storm surges. These risks are amplified for those lacking essential infrastructure and services or living in exposed areas.

Substantial emissions reductions over the next few decades can reduce climate risks in the 21st century and beyond, increase prospects for effective adaptation, reduce the costs and challenges of mitigation in the longer term, and contribute to climate-resilient pathways for sustainable development.

B. The international response to climate change

In 1992, countries joined the **United Nations Framework Convention on Climate Change** (UNFCCC) in order to cooperate on limiting average global temperature increases and cope with the impacts of climate change. The UNFCCC now consists of **195 Parties** and the secretariat supports the Conference of Parties (COP) international climate change negotiations[3].

The lead up to COP 21

In 1997, the UNFCCC adopted the **Kyoto Protocol**, which **legally binds developed countries to emission reduction targets**. The Protocol's first commitment period started in 2008 and ended in 2012; the second commitment period started in 2013 and will end in 2020. During COP17, in Durban, the UNFCCC initiated the Durban Platform for Enhanced Action to begin preparation for action beyond the Protocol's 2020 deadline.

As outlined by the *Ad Hoc* Working Group on the Durban Platform for Enhanced Action (ADP) established at COP17 in December 2011, **COP 21 in Paris** in December 2015 is the deadline for negotiations to develop a binding agreement to replace the Kyoto Protocol. In order to meet the 2015 deadline in December, UNFCCC Member States have worked to adopt key structural changes and reporting measures in the lead up to COP 21.

At **COP 19 in Warsaw** (held in November 2013), governments agreed to communicate their respective contributions to the Paris agreement and the monitoring, reporting and verification arrangements for domestic action were finalised for implementation. Parties agreed to put forth plans to reduce emissions by outlining **Intended National Determined Contribution**'s (INDCs), which will serve as the basis for negotiations at the Paris conference. The **Lima conference**, held in December 2014, established that each country's INDC will provide a clear statement of emission mitigation to be submitted by 31 March 2015 and laid the foundation for the geographic scope of the incipient Paris agreement.

[3] http://unfccc.int/

2. The role of the EU in climate negotiations

The overarching objective of EU climate policy is to **limit global warming to 2°C above pre-industrial average temperature levels**. Against this background, the EU is committed to an ambitious global climate change agreement and is set to play a major role at the 2015 Paris conference. The EU has made financial commitments to scale up climate financing through 2020 and put in place a comprehensive framework for climate and energy policies within the EU.

The UNFCCC negotiations on a post-Kyoto agreement represent an opportunity to assess the **Union's environmental leadership role** in the interplay with other international actors.

The EU's strategy for the months preceding the COP 21 comprises three main aspects:

1) **climate change as a strategic priority in the political dialogue with partners** - especially at the G7/G8 and G20, and also at the UN General Assembly;
2) **supporting low-carbon and climate-resilient development through the EU's development cooperation policy**; and
3) **linking climate change and its potential long-term consequences, including security challenges**.

In climate negotiations, the EU is formally represented by the Presidency and the European Commission. However, and in close collaboration with the other EU institutions, the **European Parliament plays also a significant role in climate diplomacy**. A delegation of MEPs (who form part of the official EU delegation) has attended all recent international climate conferences. The EP also needs to give its consent in case of an international agreement. In a resolution adopted in November 2014 ahead of COP 20 in Lima[4], the European Parliament recommended that the new agreement aim at a 50% reduction in carbon emissions by 2050. It reiterated the EU's commitment to getting on track for a below 2°C climate warming scenario and called for countries to come forward with INDCs that are in line with keeping warming below 2°C by the end of March 2015.

The European Parliament sent a 12-Member delegation to Lima. The delegation met the Executive Secretary of UNFCCC, other key negotiators along other Parliamentarians, as well as local and international NGO representatives, to discuss actions to be taken for an ambitious climate policy, creating green jobs and fostering sustainable growth.

The European Parliament will send again a delegation to COP 21 in December 2015. In this prospect, Members of the ENVI Committee have been advocating in favour of intensive EU diplomatic efforts in order to guarantee the success of the forthcoming conference. In order to formally express Parliament's position ahead of COP21, an own-initiative report "**Towards a new international climate agreement in Paris**" will be voted in the course of 2015. The discussions at this interparliamentary committee meeting with national Parliaments could provide valuable input for this process.

EU leadership in climate diplomacy – as well as the prospects for maintaining this cooperation in the negotiations – will also rest on its own capacity to develop an ambitious 2030 framework and to move towards a low-carbon and resource-efficient Europe in 2050.

[4] http://www.europarl.europa.eu/sides/getDoc.do?type=TA&language=EN&reference=P8-TA-2014-0063

II. BACKGROUND ON AN INNOVATIVE LOW-CARBON AND RESOURCE EFFICIENT EUROPE

As explained above, the overarching objective of EU climate policy is to limit global warming to 2°C above pre-industrial average temperature levels. As a result, a number of important measures have been put in place to achieve this objective, not least the **climate and energy package of 2008**.

The climate and energy package of 2008.

In this regard, the EU committed to **reducing its greenhouse gas emissions** by at least 20% below 1990 levels by 2020, while **improving energy efficiency by 20%** and **increasing the share of renewable energy** sources to 20%.
The EU has therefore adopted in the recent years important legislation aiming at achieving these ambitious targets (Emission Trading Scheme (ETS), Directive on Carbon Capture and Storage (CCS), the Renewable Energy Directive, the Fuel Quality Directive, Regulation on reducing CO2 emissions from new passenger cars, etc.).
Based on the latest trends, **the target related to greenhouse gas emissions seems within reach**. In line with the encouraging developments of recent years, the reduction of greenhouse gas emissions could even exceed the target and reach 24% by 2020. **The target related to renewable energy sources seems also to be within reach**: in line with the encouraging developments of recent years, the share of renewables in gross final energy consumption might approach 21% in 2020, if the effort of recent years is maintained. Conversely, based on the latest trends, **further efforts are needed to meet the energy efficiency target**. The recent decrease in primary energy consumption needs to be pursued and anchored in long-lasting shifts in energy consumption patterns. Generally, the economic crisis has had an impact on primary energy consumption. Therefore, the durability of the encouraging latest developments, as well as the respective weight of the cyclical and structural factors can be questioned. Avenues for further action exist in all sectors, in particular in transport, where little progress has been obtained so far.

The 7th Environment Action Programme

In December 2013 the European Parliament and the Council adopted the **7th Environment Action Programme (EAP)**, which will be guiding European environment policy until 2020 and sets a vision for 2050; it acknowledges that all sectors of the economy have to contribute to tackling environment and climate-related challenges. The 7th EAP acknowledges in particular the importance of **turning the Union into a resource-efficient, innovative, circular and low-carbon economy** and builds on several interrelated policy initiatives, including the Union climate and energy package, the Commission Communication on a Roadmap for moving to a low-carbon economy in 2050 and the Roadmap to a Resource Efficient Europe.

EU's Climate and Energy Policy Framework for 2030[5]

In October 2014, the European Council took an important step towards a low carbon and resource-efficient Europe, by adopting conclusions on the **EU's Climate and Energy Policy Framework for 2030**. In particular, a **greenhouse gas emission reduction target of at least 40%** (compared to 1990) is established. This 2030 policy framework aims to make the European Union's economy

[5] http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52014DC0015

and energy system more competitive, secure and sustainable and also **sets a target of at least 27% for renewable energy and energy efficiency by 2030[6].**

To meet the targets, the European Commission has proposed:

- A reformed EU emissions trading scheme (ETS);
- New indicators for the competitiveness and security of the energy system, such as price differences with major trading partners, diversification of supply, and interconnection capacity between EU countries;
- First ideas on a new governance system based on national plans for competitive, secure, and sustainable energy. These plans will follow a common EU approach. They will ensure stronger investor certainty, greater transparency, enhanced policy coherence and improved coordination across the EU.

Beyond 2030: EU Roadmap for moving to a competitive low-carbon economy in 2050[7]

In the longer term, the **EU Roadmap for moving to a competitive low-carbon economy in 2050[8]** proposes that, by 2050, the EU should go even further and cut its emissions to 80% below 1990 levels through domestic reductions alone[9]. The roadmap sets out milestones which form a cost-effective pathway to this goal (reductions of the order of 40% by 2030 and 60% by 2040) and also shows how the main sectors responsible for Europe's emissions (power generation, industry, transport, buildings and construction...) can make a **cost-effective transition to an innovative low-carbon economy.**

Towards a low-carbon society

In a low-carbon society, Europeans will live and work in **low-energy, low-emission buildings** with intelligent heating and cooling systems. They will **drive electric and hybrid cars** and live in **cleaner cities** with less air pollution and better public transport.

Many of these technologies exist today but need to be developed further. Besides cutting the vast majority of its emissions, Europe could also reduce its use of key resources like oil and gas, raw materials, land and water.

Innovation, green growth & jobs

The transition to a low-carbon society would **boost Europe's economy** thanks to **increased innovation and investment in clean technologies and low- or zero-carbon energy**.

A low-carbon economy would have a much greater need for renewable sources of energy, energy-efficient building materials, hybrid and electric cars, 'smart grid' equipment, low-carbon power generation and carbon capture and storage technologies.

To make the transition the EU would need to **invest an additional €270 billion or 1.5% of its GDP annually**, on average, over the next four decades. The extra investment would take Europe back to the investment levels seen before the economic crisis, and would spur growth within a wide range of manufacturing sectors and environmental services.

Up to **1.5 million additional jobs could be created by 2020** if governments used revenues from CO_2 taxes and from auctioning of emission allowances to reduce labour costs.

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[6] http://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX:52014DC0015

[7] COM (2011) 112: A Roadmap for moving to a competitive low carbon economy in 2050 (08 March 2011)

[8] The Roadmap is one of the long-term policy plans put forward under the **Resource Efficient Europe flagship initiative** intended to put the EU on course to using resources in a sustainable way.

[9] http://ec.europa.eu/clima/policies/roadmap/index_en.htm

Saving energy and resources

Energy efficiency will be a key driver of the transition. By moving to a low-carbon society, the EU could be using around 30% less energy in 2050 than in 2005. Households and businesses would enjoy more secure and efficient energy services.

More locally produced energy would be used, mostly from renewable sources. As a result, the EU would be less dependent on expensive imports of oil and gas and less vulnerable to increases in oil prices. On average, the EU could save € 175-320 billion annually in fuel costs over the next 40 years.

Cleaner air

Greater use of clean technologies and electric cars will drastically reduce air pollution in European cities. Fewer people would suffer from asthma and other respiratory diseases; considerably less money would need to be spent on health care and on equipment to control air pollution. By 2050, the EU could save up to €88 billion a year in these areas.

Finally, it should be noted that **the cost of delaying action would** *in fine* **increase overall investment requirements** (by approximately + € 100 billion per year between 2030 and 2050).

Figure 1: EU Energy and Climate Policies, main steps 2006-2015