

Climate Change and Climate Policy in Europe and the US

Opportunities and Challenges in the Run-Up to
the Copenhagen Summit and Beyond

Background Reader

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Moving towards Copenhagen: International Negotiations – Background and Status

The United Nations Framework Convention on Climate Change (UNFCCC) was adopted in 1992 to address the growing problem of climate change. In December 1997, delegates at the third Conference of the Parties (COP 3) to the UNFCCC agreed in Kyoto, Japan to a Protocol which commits a group of industrialized countries and countries in transition to a market economy to an emission reduction target. These Annex I countries, as they are known under the UNFCCC, agreed to collectively reduce their overall emissions of greenhouse gases (GHG) by 5.2% below 1990 levels during the years 2008-2012. Specific targets vary from country to country. Although the US decided not to ratify the treaty in 2001, the Kyoto Protocol garnered enough support internationally to enter into force in 2005; it now has 189 participating countries.

As foreseen in the Kyoto Protocol, work began at the COP 11 in Montreal to begin outlining new emission reduction commitments for the post-Kyoto period. Subsequently, the 2007 meeting in Bali, Indonesia focused on long-term issues and resulted in the so-called Bali Roadmap. The roadmap is a two part plan set to culminate in a new international accord at COP 15 in Copenhagen that will take place in December 2009. The first part of the roadmap is the Bali Action Plan, which seeks to detail four key pillars of any future agreement: mitigation, adaptation, technology and finance. In order to address these issues, the parties established the 'Ad Hoc Working Group on Long-term Cooperative Action under the Convention' (AWG-LCA).

Under these pillars, issues such as greenhouse gas limitation and reduction commitments, rules on measurement, reporting and verification (MRV) of emission reductions, flexible emissions reduction mechanisms and reduced emissions from deforestation and forest degradation (REDD) have been discussed. The roadmap recognizes that countries have a common, yet differentiated set of responsibilities regarding the problem and potential solutions. It therefore acknowledges that developed countries should engage in appropriate mitigation action to tackle climate change, although it does not specify the nature and scope of such action.

Additionally, under the roadmap, the Ad Hoc Working Group on Further Commitments for Annex I Parties under the Kyoto Protocol (AWG-KP) continues to meet in order to outline new

reduction targets. While these negotiations are considered central by developing countries, which have entered no quantified commitments under the Kyoto Protocol, several industrialized countries are focused on the negotiations under the AWG-LCA, which offer the prospect of including advanced developing countries under a binding emission reduction framework and, more importantly, also include the US as a participant in the negotiations. Never having ratified the Kyoto Protocol, the US is not formally part of the AWG-KP negotiations.

Four negotiation sessions were held in 2008, culminating in COP 14 in Poznań, Poland. In 2009, multiple formal and informal meetings have taken place in various locations. Progress has largely been uneven, with the negotiating text growing in length and little movement on major issues. Coming off the high level negotiations at the UN and at the G-20 in September, there had been some hope for movement in the October meeting in Bangkok on country positions and a streamlining of the text of the proposed accord. Towards this end, portions of the text were cut into manageable portions known as 'non-papers' by the AWG-LCA. This led to a more orderly discussion and identification of areas of possible convergence.

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Less happened under the AWK-KP, where much of the text is already agreed upon by the parties, with commitments of a number of major countries left to be filled into the document. Yet the success or failure of the AWK-KP depends heavily on the outcome of the AWG-LCA and in particular on what level of commitments the US will be willing to agree.

There is a growing debate as to whether there should be one agreement or two. The current system is favored by developing countries who do not want changes made to what has previously been negotiated. They also do not want the distinction between developed and developing countries to be softened. Many developed countries, however, would like to take only certain core elements of the Kyoto Protocol and merge them into a single agreement. This

would presumably include loosening the distinction with respect to Annex I countries. Regardless, provisions need to be made to allow the US to participate without ratifying the document since it appears unlikely any treaty would pass through the US Senate.

Coming out of the latest meeting in Barcelona in November 2009, many seasoned negotiators have questioned the ability to reach a consensus in time for the Copenhagen COP. Given the number of unresolved issues, most observers currently expect COP 15 to yield, at best, a political agreement setting out general principles and objectives, and deferring technical details to subsequent meetings.

Climate Change and the United States

The United States has been engaged in climate negotiations ever since it signed the UNFCCC in 1992. Under the administration of George W. Bush, the US rejected the Kyoto Protocol in 2001 and relied on a voluntary program and technology-focused initiatives to address the problem.

In the absence of meaningful action at the federal level, binding greenhouse gas mitigation policies were pursued at the level of individual states or regions within the US, where several ambitious emissions reduction programs have been implemented or proposed. California has been in the forefront of these efforts. Under the leadership of Governor Arnold Schwarzenegger, the state adopted the California Global Warming Solution Act (AB 32) in 2006. The comprehensive state-wide act requires that California's GHG emissions be reduced to 1990 levels by 2020, reflecting a roughly 25% reduction under business as usual estimates.

Regionally, ten states in the Northeast and Mid-Atlantic have launched an emissions trading system known as the Regional Greenhouse Gas Initiative (RGGI) with aims to reduce the collective CO₂ emissions of the power sector in participating states by establishing an emissions cap and allowing trading of emissions credits among their power producers. The program is implemented through state regulations, and regulated power plants can use a CO₂ allowance issued by any of the ten participating states to demonstrate compliance with the state program. In late 2008, the first auctions of RGGI allowances were held, with prices per allowance in the range of \$3.

Similar to the efforts carried out by RGGI, the Western Climate Initiative (WCI) and the Midwestern Greenhouse Gas Reduction Accord are regional initiatives that have been launched to fill the gap left by federal climate regulation.

During the second half of the Bush administration, state governments and environmental groups initiated lawsuits against power companies regarding carbon emissions as well as against federal agencies for neglecting to regulate these emissions. Although these were largely meant to be symbolic acts, the case of *Massachusetts v. Environmental Protection Agency (EPA)* eventually made it to the Supreme Court. In a 5-4 ruling in 2006, the Court held that states have the right to sue, that the Clean Air Act gave permission to the EPA to regulate emissions, and that the EPA could not inject policy considerations into its decision whether or not to regulate.

While greatly expanding the EPA's powers, the ruling also increased the pressure on Congress to address the issue. The Obama administration has indicated a willingness to regulate through executive powers if Congress fails to act. In just the past few months, the EPA finalized a rule requiring large emitters of GHG to report their emissions, tighter fuel economy standards for vehicles, and a proposed endangerment finding paving the way for more stringent regulation of greenhouse gas emissions under the Clean Air Act.

As for Congress, this past June, the House of Representatives passed the American Clean Energy and Security Act (ACES) introduced by Representatives Henry Waxman of California and Edward Markey of Massachusetts. It defines mandatory near, medium, and long-term reduction targets for greenhouse gases, and provides for the creation of an emissions trading system as a central policy for achieving emissions reductions. Caps on emissions are set at 3% below 2005 levels by 2012, 17% below 2005 levels by 2020, and 83% below 2005 levels in 2050. The bill introduces requirements for utilities to deploy renewable energy and energy efficiency programs, incentives for carbon capture and sequestration, and funding for studies on relevant issues of energy and the environment. Also, it sets out energy efficiency standards and incentives for buildings and appliances.

Under ACES, emission allowances are provided free of cost to energy intensive industries and some other sectors, subject to certain conditions. A growing share of allowances is to be auctioned, however, and the revenue will be largely applied towards protection of consumers from rising prices and R&D funding, including the establishment of State Energy and Environment Development (SEED) accounts to promote energy efficiency and renewable energy programs.

The bill allows for states to impose tougher individual regulations outside of the cap-and-trade program. State trading programs such as the WCI or RGGI would be put on hold from 2012 through 2017 while the federal scheme was implemented. Previously issued state allowances, however, would be honored under the federal program.

Following passage in the House, a counterpart bill now needs to be adopted by the US Senate before both versions can be reconciled in a Conference Committee and then be forwarded to the President for signature. At the end of September, Senators John Kerry of Massachusetts and Barbara Boxer of California proposed a Senate version of a climate bill in response to the previously passed ACES. Titled the Clean Energy Jobs & American Power Act (CEJAPA), this bill has many similarities to ACES, including a fixed cap on GHG which is preliminarily set at a 20% reduction from 2005 levels by 2020 as well as an emissions trading system.

So far, the debate in the Senate has been characterized by intense partisanship and regionalism. Where passage of the Waxman-Markey bill only required a simple majority in the House of Representatives, however, voting rules in the Senate call for 60 votes – a three fifths majority – to close debate on a bill and proceed to a substantive vote. Even within the Democratic caucus, several moderate Senators from heavily industrialized and agricultural states have expressed reluctance to pass legislation they perceive as costly and damaging to their states' economies.

Securing the required level of support both among Democrats and moderate Republicans will therefore necessitate far-reaching concessions, and with policy makers currently focused on the debate over health care reform, the likelihood of a bill passing the full Senate in

time for the climate negotiations in Copenhagen remains low.

Climate Change – A German and European Perspective

For decades Germany, in conjunction with the European Union, has been a leading voice in the global climate negotiations. As far back as 1992, the EU has pursued policies to reduce CO₂ levels by listing climate change as one of seven priority themes in an earlier Environmental Action Programme. A number of policies have since been adopted, including measures on energy efficiency and promoting renewable energy sources, energy taxation, voluntary agreements with industry, as well as a decision to monitor greenhouse gas emissions. These efforts have had mixed results.

Early supporters of the Kyoto Protocol, the EU and its Member States were among the first industrial nations to ratify the agreement, thus committing themselves to an average reduction of 8% relative to 1990 levels by 2012. This collective reduction was distributed among the EU Member States through a 'Burden Sharing Agreement', with Germany, the largest emitter in the block, pledging to reduce its GHG emissions by 21%. After the US withdrew from the Kyoto Protocol, the EU stepped into a leadership role, ensuring the agreement eventually came into force by garnering the requisite amount of international support.

With a view to meeting its domestic commitments, Germany has adopted a broad set of domestic policies regulating energy demand and supply. An important component has been legislation to promote renewable energy, guaranteeing prices for electricity obtained from renewable sources and requiring grid operators to purchase it, as well as acceptance and remuneration provisions for electricity generated through combined heat and power generation. Various rules to promote energy efficiency have been adopted with a focus on heating facilities and the thermal insulation of new buildings.

In a push to leverage the multiplying effect of consumer purchasing power, household and office appliances are required to declare energy performance. Financial incentives have been implemented in the energy, transport, and construction sectors, including subsidies for new photovoltaic installations, support for improved insulation of existing buildings, as well as initiatives to improve the fuel efficiency of

vehicles and impose charges on traffic emissions.

After attempts to implement an ambitious energy tax at the European level failed and only a watered-down harmonization framework was adopted, Germany also implemented a comprehensive energy tax reform. Originally begun in 1999, this 'Ecological Tax Reform' was designed to reduce the tax burden on labor and shift part of it to energy consumption. Specifically, it increased tax rates on mineral oil and gas, and introduced a new levy on electricity thus prompting an annual rise in energy prices between 1999 and 2003. In 2006, this was further codified through the Energy Tax Act, which set out a common fiscal framework for energy products through harmonization of definitions, taxation rules and exemptions.

Emissions from large utilities and industrial facilities, which collectively make up the main source of greenhouse gases in Germany, have conventionally been targeted by a general duty to use energy efficiently under ambient pollution control law. With the adoption of the EU Emission Trading System (EU ETS), operators of a range of specified installations are now faced with a mandatory limitation, or 'cap', on their emissions. Since January 2005, these operators have been required to obtain a permit for CO₂ emissions and must surrender a sufficient number of allowances each year to cover emissions generated the previous year. Germany has adopted federal legislation governing the allocation and distribution of allowances, monitoring of transactions, establishment of the national registry, penalties, and domestic and international reporting procedures.

In preparation for the negotiations on an international climate regime beyond 2012, the EU came out with a broad set of climate goals in March 2007. These were headlined by commitments to reduce emissions by 20% compared to 1990 levels as well as to increase the deployment of renewable energies to 20% by 2020. Going further, the block promised to cut its emissions by an overall 30% provided that other developed countries commit to comparable emissions reductions. With a series of decisions adopted in August 2007 in Meseberg, the German government set out a broad framework of measures to implement the EU's integrated climate and energy program.

Economic Stimulus, Costs and a Green New Deal

The scientific community has called on states to limit the rise in global temperature to 2° Celsius, a goal which many scientists believe would require limiting concentrations of CO₂ in the atmosphere to less than 450 parts per million (ppm). Limiting climate change below this level entails steep challenges: worldwide, it calls for greenhouse gas emissions to peak in the next decade, followed by a sharp decline before the middle of the century. Rather than slowing down, however, growth in global emissions of greenhouse gases is expected to accelerate. If current trends are left unchecked, emission levels may well double in the next few decades.

A transformation of unprecedented scale will be needed to reverse this trend and bring us on the path towards a sustainable, low-carbon global economy. The International Energy Agency (IEA) estimated in 2008 that this would require roughly US\$500 billion per year in energy efficiency and renewable energy technologies. Likewise, the much publicized Stern Review reported in 2006 that reaching a level of 550 ppm of CO₂ in the atmosphere would require similar investments of totally 1% of GDP annually, or roughly US\$500 billion. In a third study entitled "Pathways to a Low-Carbon Economy" published in 2009, McKinsey & Company put forth a figure starting at €317 billion of investments in 2015, rising to €811 billion in investments annually by the year 2030. This level of investment would, however, reduce global emissions of GHG by 35% and allow for a realistic chance at limiting global warming to below the 2°C target.

Three key sectors – power, transport and buildings – account for nearly 80% of this investment. Each of the three key abatement sectors has specific areas where substantial near-term investment is most warranted:

- *Power* – Key investment needs include renewable energy, energy efficiency, grid infrastructure and electricity storage.
- *Transport* – Investment in the transportation sector is especially needed in areas of vehicle efficiency, electrification of automobiles, freight transport and planning.
- *Buildings* – Investment here is needed principally in the weatherization of existing buildings, the inclusion of low-energy design

features in new construction, and an integrated approach to urban planning.

Despite rapid growth in recent years, global investment in sustainable energy – estimated at \$118.9 billion in 2008 – can only go a short way towards meeting the estimated annual capital requirements of nearly US\$500 billion in the near term. In their efforts to combat the financial crisis that erupted in 2008, several countries have included so-called ‘green stimulus’ allocations in their economic stimulus plans announced in 2008 and 2009. With more than \$180 billion in stimulus funds earmarked for sustainable energy investment, this has provided a substantial boost to public spending on clean energy investment. Much of this boost will be offset by a drop in private finance induced by the crisis, however. More importantly, public deficit spending cannot serve as a vehicle of clean energy investment in the long term. Both a quantitative and qualitative shift will thus be required in terms of relevant funding channels.

\$180 billion in stimulus funds will temporarily narrow the clean energy investment gap, but cannot generate the type of sustainable capital flows required in the long term.

Thus, long-term vision is required while implementing short-term policies that maintain funding levels in low-carbon measures. Private equity and debt will have to source by far the greater part of new investment, with estimates ranging up to 86%. Policies to encourage private investment in clean technology need to help overcome a number of barriers, such as bounded rationality, informational asymmetries and principal-agent conflicts. Public spending remains crucial, however, and should be leveraged in key areas where private investment is not readily available, especially at the early stages of technology research.

In particular, the required transformation will call for:

- *A price on carbon* – A consistent price signal for carbon emissions must be provided through carbon markets or a

carbon tax, to ensure that investments flow into low-carbon technologies.

- *Incentives for renewable* – Policies are needed that can provide incentives for private investment for the deployment of renewable energy sources through feed-in tariffs, renewable portfolio standards, or both.
- *Efficiency standards* – Robust energy-efficiency standards are needed to promote innovation in all three sectors, through combined heat-and-power generation in the energy sector, vehicle emission standards in the transport sector, and efficiency standards for buildings and household appliances.
- *Public funding where markets fail* – Public funding will be required in many areas, including education, research & development, planning, and technology deployment. Public investment is particularly required in public transportation, advanced power storage technologies, grid infrastructures, and urban planning.

Given the urgency of achieving bold emissions-reduction targets, these measures need to be adopted in a focused manner and without delay. Though critical, near-term investment needs and policies have already been identified, it will ultimately remain a question of political will whether the necessary policy framework can be adopted and implemented to spur green investment and the associated economic transformation.

About the Ecologic Institute

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