



THE ATLANTIC COUNCIL
OF THE UNITED STATES
PROGRAM ON TRANSATLANTIC RELATIONS

**Transatlantic Cooperation for Clean Air
Summary of a Conference**

Co-sponsored by
the Atlantic Council of the United States,
the European Policy Center,
and the U.S. Mission to the European Union

Brussels, February 5-6, 2007

Introduction and Summary

Although the United States and the European Union have for many years pursued different approaches on the issues of air quality and climate change, those strategies are now beginning to intersect. Their policy objectives are increasingly similar, and they can learn much from each other's experience with regulation, market incentives, and enforcement. Today, transatlantic cooperation could be enormously beneficial in developing new technologies and new regulatory frameworks, and in reaching out to developing countries, such as China and India.

These were the primary conclusions of a meeting of U.S. and European experts on air quality convened on February 5 and 6, 2007, by the Atlantic Council of the United States, the European Policy Center, and the U.S. Mission to the European Union. The experts included policymakers from government institutions and regulatory agencies (including not only the U.S. and EU, but also EU member states), as well as representatives of the business community, academe, and the non-profit sector from both sides of the Atlantic. The conference's primary aim was to improve understanding among U.S. and European experts of existing and planned clean air policies — including the regulatory treatment of several key pollutants — and the impact of these policies on air quality. By jointly assessing policies and actions in the United States and the EU, it should be possible to identify areas of convergence and divergence. This in turn will help determine opportunities for increased transatlantic cooperation in addressing the serious environmental consequences associated with changes in air quality.

During the conference, experts reviewed the major policy objectives behind air quality laws and regulations, and also discussed their perceptions of strengths and weaknesses in the control of major pollutants. They reviewed the potential role of new technologies in improving air quality and reducing the impact of global climate change, and found increasing agreement in outlook

across the Atlantic. They also largely agreed that additional discussions on the effectiveness of measurement and enforcement processes would be beneficial and might be an area that could lead to mutually beneficial cooperation. The conference concluded with a discussion of the U.S. and European efforts designed to reach out to developing countries — especially rapidly growing energy users such as India and China — to meet the challenge of improving air quality and reducing greenhouse gases (GHG) throughout the world.

The Need for Renewed Transatlantic Discussion

Key Points

- Despite past avoidance of serious dialogue between the U.S. and the EU, rising concerns about air quality and energy security for both parties has spurred the renewal of discussions on these issues.
- The global nature of air pollution and climate change is well known in both the U.S. and the EU. While both parties have programs to aid developing countries in matters of energy efficiency, these could be improved by greater convergence of policies and regulation.
- The U.S. and EU share similar objectives for energy and environment goals. Both desire action on climate change, energy security, and safeguarding economic growth.
- The strategies used by the U.S. and EU have also converged. However, institutional differences remain a challenge, as the EU must deal with its members' varied national policies, regulations and implementation methods.

Discussion

Since the U.S. government made clear that it would not submit the Kyoto Protocol for ratification, the United States and the European Union have largely avoided any serious dialogue on air quality and climate change issues. Although a senior level dialogue was established at the 2006 U.S.-EU summit, it has met only sporadically and has mostly been used to restate policy positions. The EU and its member states remain concerned over the U.S. commitment to coping with climate change issues, while the Bush administration is clearly still unconvinced of the effectiveness of the Kyoto Protocol (these differences were most recently on display at the G-8 summit in June). But despite these differences, policymakers on both sides of the Atlantic have wrestled with the enormous complexity of addressing air quality and climate change concerns just as energy security has rapidly become a priority. It has become clear that the United States and the EU face many similar challenges and agree on many points of approach. As a result, it seems to be an excellent time to establish a serious dialogue on issues involving air quality and climate change.

Today, both the United States and the EU recognize that air quality and climate change are global problems that severely impact developing nations like China and India. In fact, the transnational impact of air pollution and the growing energy requirements of developing countries will require global cooperation, if we are to meet the environmental challenges associated with increasing economic prosperity throughout the world. Both the U.S. and the EU

have initiated many programs to assist the developing countries in meeting their growing energy requirements with more efficiency. These efforts could be made even more productive if the transatlantic community were to agree on the policies and regulations needed to achieve economic progress with cleaner air and less risk of destabilizing climate conditions.

Moreover, when it comes to their own energy and environmental goals, the United States and the EU now share fairly similar objectives. The convergence of these goals in the last few years suggests that considerable opportunities exist for cooperation in developing more effective policies and regulation, even despite the serious remaining differences. The European Commission's recently released *An Energy Policy for Europe* notes that "the point of departure for a European energy policy is threefold: combating climate change, limiting the European Union's external vulnerability to imported hydrocarbons, and promoting growth and jobs, thereby providing secure and affordable energy to consumers."

While the U.S. has not yet formally set an objective on climate change, the Bush administration has recognized that it is an issue that will require action, and the Department of Energy has initiated a number of projects designed to reduce the release of CO₂ emissions. Of course, U.S. ambitions in terms of air quality generally remain high. The European Commission's other objectives — promoting security of energy supplies and maintaining economic competitiveness and jobs — are also central to U.S. policy. Ironically, perhaps, the concern over economic competitiveness was among the major reasons for rejecting the Kyoto Protocol, along with the belief that it would be ineffective as long as the major developing countries were excluded.

Just as their objectives have converged over time, so have the strategies used by the United States and the EU. Both have used a combination of market-based incentives and taxes and subsidies, as well as regulatory standards and enforcement mechanisms to reach their air quality objectives. Policymakers in the U.S. and the EU seem determined to implement cost effective policies and diversify fuel options in order to meet environmental and energy security concerns. Both have made significant progress in a number of areas, but great differences remain. In the United States, regulations and enforcement have been relatively uniform across the country, even though states have recently begun taking their own measures, especially to limit carbon emissions. In Europe, the EU has had to deal with a variety of pre-existing national policies and approaches, and even those regulations recently established by the EU must depend on the member states for actual implementation and enforcement, which inevitably varies.

Environmental Policies in Transition

Key Points

- Policies are in transition in the United States and EU. Despite differences, there are ample opportunities for each to learn from the other. Discussions highlighted hopes for future comparison and collaboration.
- Air quality legislation in the United States has led to success in the reduction of pollutant compounds and particulates. The U.S. Environmental Protection Agency (EPA) has recently introduced tighter regulations to further this progress. However, a major roadblock is inefficient vehicles.

- Long-term strategies for energy security and sustainable and affordable energy are also being considered in the United States. When new technology is made cost effective, it has the potential to meet both climate and security objectives. Multiple, affordable options are the cornerstone of U.S. emissions reduction policy.
- While a major deficiency in U.S. climate change policy is the lack of emissions standards for greenhouse gasses, these issues are being addressed in state initiatives and in support for federal laws.
- EU environmental policies and regulation have undergone a change from a patchwork of member state laws to EU-wide standards and targets. This marks a movement towards U.S. style pollution reduction.
- Despite agreeing to the targets of the Kyoto Protocol, European carbon emission reduction has not been very successful. This is due to the weakness of the cap-and-trade system and ineffective monitoring and enforcement. It is thus unlikely that most EU nations will meet the 8 percent CO₂ reduction target.
- The EU is attempting to bounce back by overcoming national politics, improving the cap-and-trade system and using financial incentives. However, the most interesting trend is the movement toward an integrated approach that also considers energy security and economic issues.
- The result of this new policy focus is on renewable energy and energy efficiency. However, the recent expansion of the EU, the need for technical improvement in renewables to reduce costs, and the strategy's dependency on the use of CO₂ sequestration and nuclear power, all pose major challenges to these efforts.

Today, policies are in transition on both sides of the Atlantic as policymakers try to cope with the complexity of meeting environmental challenges while providing adequate and affordable supplies of energy in a world that has become less secure. While the histories and priorities of U.S. and European air quality policies have been at times rather different, they do provide opportunities to learn from each other, especially as both develop strategies for the future. Moreover, discussions of those future strategies revealed several opportunities for further comparison, and perhaps even collaboration.

In the United States, serious efforts to reduce air pollution began with the Air Pollution Control Act of 1955, which was followed with the Clean Air Act of 1963 and the Air Quality Act of 1967. The 1970 Clean Air Act and its 1977 Amendments further strengthened regulations. Then, the 1990 Clean Air Act Amendments created 175 new regulations and added major titles on acid rain, federal permits, and stratospheric ozone, as well as establishing National Ambient Air Quality Standards.

This legislation has led to major progress in reducing air pollution throughout the country. The utilization of State Implementation Plans (SIPs), accompanied by consistent measurement and transparent procedures, has led to rigorous enforcement, leading to steady progress in reducing pollution of sulfur dioxide (SO₂), nitrogen oxides (NO_x), volatile organic compounds (VOCs), and particulate matter (PM₁₀ and PM_{2.5})¹. Major progress has also been made on trans-boundary

¹ Particulate pollution is measured by micrometer. Particulates smaller than 10 micrometers and larger than 2.5 micrometers are classified as "inhalable coarse particles", while those smaller than 2.5 micrometers are classified as "fine particles". <http://www.epa.gov/particles/basic.html>

issues within the United States. Acid rain levels in the Midwest and Northeast section of the country were reduced by 25-40 percent between 1990 and 2005, even though GDP and electricity production increased significantly.

The U.S. EPA has recently set regulations to further reduce SO₂, NO_x, and PM_{2.5} particles by the year 2015, as well as legislation to lower mercury emissions from 38 million tons in 2010 to 15 million tons by 2018. The longer-term objectives imbedded in the Clean Air Interstate Rule (CAIR) and in the Clean Air Mercury Rule (CAMR) provide a time frame that allows industry the opportunity to plan and implement the additional investments required. In addition, the Clean Air Visibility Rule (CAVR) will lower emissions from older industrial plants, and the new ambient particulate matter standard will spawn more regulations to reduce SO₂ and NO_x emissions. Tighter regulation of air emissions has also been set specifically for the transportation sector, with the resulting regulations now covering virtually all forms of transportation, off-road as well as on-road and marine. However, there has been little progress in increasing vehicle efficiencies, which could have a significant impact on lowering emissions from the transportation sector.

While the U.S. is currently focused on improving air quality standards in the electric power and transportation sectors, much attention is also focused on longer-term solutions that address energy security issues, the cost and availability of sustainable energy, and the affordability of energy. In dealing with this complex of sometimes competing priorities, U.S. policymakers have emphasized that:

- All options are required if we are to meet energy demand affordably and address environmental objectives;
- Reduction in carbon intensity will require renewables, nuclear power, and fuel substitution;
- Improvements in efficiency on both the demand and supply side will be required; and
- Sequestration of carbon through capture and storage and enhancement of natural sinks will be needed.

The Carbon Sequestration Partnership, involving 216 organizations in 40 states, provides an indication of the seriousness given in the United States to developing long-term solutions.

Although there certainly remain debates within the United States regarding the extent to which energy security can be achieved while also avoiding global warming, there are those who believe that the right mix of new technologies will provide the means to meet both climate and security objectives. Developing cost effective solutions is viewed as critical. In this regard, an increasing emphasis is now placed on efficiency improvements and energy conservation, as well as new technologies. In the transportation sector, the short-term emphasis is on the development of first and second-generation biofuels, and on the need to improve vehicle mileage performance, including greater use of hybrid technologies. Over the longer term, the use of hydrogen or fuel cell technology is seen as having significant potential to meet both energy and environmental goals. In the electric power sector, emphasis is being given to clean coal technologies, including integrated gas combined cycle coal plants (IGCC), the FutureGen project, and the sequestration and storage of carbon. Advanced nuclear power, using Generation IV technology, is also being

pursued, although the long-term solution for waste disposal and storage remains unresolved. Research and development of renewable technologies, such as solar and wind power, also continue to be actively supported. In short, the United States is pursuing multiple options to meet energy requirements and address environmental objectives. Cost effective implementation is the cornerstone of U.S. policy to reduce emissions.

The major shortcoming in the U.S. policy and regulations is its failure to establish standards for greenhouse gas emissions, although it must be noted that many of the regulations in place that control a wide range of pollutants also reduce carbon emissions. There is now growing support in Congress for federal legislation on carbon emissions. Climate change issues are already being addressed by a number of state initiatives; this in turn is providing an incentive for the development of federal legislation that would be more uniform across the country. The push for establishing federal limits on carbon emissions was further strengthened on April 2, 2007, when the U.S. Supreme Court ruled that the EPA has the authority to regulate carbon dioxide and other greenhouse gases associated with automobiles.

Within Europe, environmental policies and regulations have evolved from a patchwork of the legislation in each individual country. These ranged from car emission controls in the early 1970s to the air quality standards for SO₂, NO_x and suspended particles in the 1980s. In addition the EU became party to the United Nations Economic Commission for Europe (UNECE) convention on Long Range Trans-Boundary Air Pollution in 1981. Until 1987, however, there was no legal basis for an EU-wide environmental policy with uniform regulations across the entire continent.

Nevertheless, the regulations on air pollutants such as SO₂, NO_x, and PM₁₀ particulate matter have been very effective in many countries. On the other hand, the level of PM_{2.5} particulate matter remains a significant health hazard owing to weak regulations. And the regulation of emissions from the transportation sector has proven difficult even though European emission standards are tighter than those in the U.S. To tackle these challenges, EU-wide standards, supplemented by national standards and emission ceilings are now being implemented. As part of this effort, twelve pollutant concentration zones have been established with monitoring to measure progress at meeting targets. These steps will bring the EU more in line with U.S. efforts to improve air quality.

Since joining the Kyoto Protocol, the EU has made the reduction of carbon the linchpin of its energy policy. The EU has set an objective to achieve “at least a 20 percent reduction of greenhouse gases by 2020 compared to 1990.” In international negotiations, the EU has sought to obtain a commitment from the developed countries for a 30 percent reduction in global greenhouse gases by 2020, with a further target of a 50 percent reduction from 1990 by 2050.

Yet, despite the goals set by Kyoto, European efforts to lower carbon emissions below 1990 levels has not met with much success. Prior to Kyoto, European regulations related to air quality primarily relied on establishing technical standards. However, following Europe’s accession to the Kyoto Protocol, legislation related to greenhouse gases relied on a market-based regulatory strategy involving cap-and-trade schemes for creating incentives to lowering greenhouse gas emissions cost effectively. Currently, such cap-and-trade regimes, as well as internal company

cost incentives and government financial incentives, are all in use as part of the EU's effort to reduce GHG emissions. However, within the cap-and-trade mechanism, allowances were set too high and companies found it too easy to buy allowances from countries in the former Soviet Union, where the decline in economic activity had erased any pressure to reduce emissions. It is now apparent that the EU 2012 goal of achieving an 8 percent reduction in CO₂ levels from 1990 levels is unlikely to be met except in a few countries.

Along with the shortcomings in the cap-and-trade system, monitoring and enforcement mechanisms across Europe have been uneven and less effective than desired. Compliance by member states has been mainly based on voluntary participation, and enforcement of voluntary mandates within member states has proven difficult. The current goal is to establish binding agreements for member states in order to overcome internal national politics.

Weaknesses in the initial set of directives and regulations are also being addressed, so that the emissions trading scheme should start to be more effective at reducing greenhouse gas emissions. As noted earlier, Europe has made considerable progress in reducing SO₂, NO_x and PM₁₀ by using a variety of financial incentives. Environmental performance by member states is being more closely monitored, with the focus on the twelve pollution concentration zones.

Perhaps most important, the EU is starting to approach climate and air quality issues in a more integrated way, and is also linking them to such energy issues as security of supply and economic competitiveness in a way that will sound familiar to any U.S. analyst. The European Commission's communication on *An Energy Policy For Europe* (January 2007) notes that the drive to reduce greenhouse gases is central to its energy strategy for three reasons:

- because CO₂ emissions from energy make up 80 percent of EU GHG emissions, reducing emissions will require using less energy and using more clean, locally produced energy;
- reducing energy usage will limit the EU's growing exposure to increased volatility in prices for oil and gas; and
- reducing GHG could potentially bring about a more competitive EU energy market, stimulating innovation, technology and jobs.

While the potentially severe impact of climate change is the major driver of energy policy in Europe, the EU, like the U.S. government, is striving to balance climate change with air quality, energy security, energy affordability, and economic growth. The European Commission noted "improved energy efficiency has the potential to make the most decisive contribution to achieving sustainability, competitiveness, and security of supply." Their goal of reducing primary energy use by 20 percent by 2020 would mean that the EU would consume 13 percent less energy than today.

To achieve this goal, EU policymakers stress the need to lower the cost of "clean" energy, and to bring the EU industry to the forefront of low carbon technology. The European near term strategy is also dependent on increasing the efficiency of energy consumption in buildings, appliances, equipment, industrial processes, and transport systems. As noted in the energy policy communication, emphasis will be given to a "massive growth in all three renewable energy sectors: electricity, biofuels, and heating and cooling." The Commission has proposed a

binding target of increasing the level of renewables in the overall energy mix from 7 percent today to 20 percent by 2020 (this goal was accepted by the European heads of state in spring 2007).

The Commission notes that “member states would be expected to promote the renewable energies most suited to their specific potential and priorities.” National Action Plans would be sent to the Commission, which would then verify that the overall EU-wide targets would be met. However, the recent expansion of EU membership may pose a significant challenge to the EU’s ability to develop common regulations leading to significant reductions in EU-wide emissions. Many of the new members have different energy priorities and in some cases, their administrative capacity for monitoring and enforcement is likely to be relatively low.

The EU envisions renewable sources of electricity to account for up to 30 percent of power production by 2020 with growth in wind, solar, and wave and tidal power. This will require major technological improvements to reduce current high cost levels. Biofuels are targeted to provide at least 10 percent of vehicle fuels by 2020 with the provision that the “biofuels used are sustainable in nature, inside and outside the EU.” The economics to drive this increase in renewables will probably require that the current high price of oil be maintained in a range of \$48 to \$78 a barrel, and that the price of carbon be at least 20 euros per ton.

Over the longer term, the EU strategy for reducing carbon emissions is dependent on the extensive use of near-zero emission fossil fuel plants with CO₂ capture and storage. Meeting those objectives will also require greater use of nuclear power, in particular the eventual commercialization of Generation IV reactors. However, member states will decide for themselves whether or not to use nuclear power. But any reduction in the use on nuclear power by a member state will require an offsetting increase in the generation of power from other sources that do not produce greenhouse gases.

The Future of Transatlantic Cooperation on Environment and Energy

Key Points

- Even though the EU has a challenging institutional structure, the U.S. and the EU have very similar concerns, objectives and policies. This conference served to develop a better understanding of these aspects and their weaknesses. Environmental, economic and security issues are at the forefront for both parties.
- Despite differences in the focus of past policies, the development and commercialization of new technology is central for both the U.S. and the EU.
- It is agreed that the U.S. and the EU have much to gain from cooperation. This collaboration could be based upon a set of principles created by analysts during this dialogue.
- Recognizing that climate change and air quality must be dealt with as part of a larger set of issues will allow for more collaboration.

- Two important areas of cooperation could be the research and development of necessary technologies and outreach to the developing world. The U.S. and EU should coordinate efforts to engage developing energy consuming nations.

Despite some perceptions to the contrary, economic, public, and political pressures on both sides of the Atlantic have reinvigorated the U.S.-EU debate over energy policies. The presentations and dialogue at the February conference gave participants a more realistic appreciation of the objectives and weaknesses in the U.S. and EU programs.

The basic policies and methodologies for implementing clean air policies in Europe and the United States are very similar. Differences in outcomes largely reflect the differences in authority available to the EU Commission and the U.S. federal government as well as the evolving status of regulatory and enforcement processes. In addition, the European Commission has had to accommodate an expanding base of member states, each bringing their own unique set of circumstances. The U.S. government must also deal with a diverse set of states with unique issues, but the economic and institutional differences between states are not as large as in Europe.

Perhaps most important, with the exception of the European emphasis on greenhouse gases, the fundamental concerns and objectives are very similar. Both want to promote economic growth and jobs, and provide secure and affordable energy to consumers. Both want to reduce vulnerability to imported hydrocarbons. Both want to reduce the adverse environmental impact of emissions.

The United States has to date concentrated on sulfur dioxide, nitrogen oxide, ozone, particulate matter, and other toxins impacting air quality and is only recently showing a growing interest in controlling greenhouse gases. Europe has been focused on many of the same major air pollutants, but has been slow to address smaller particulate matter (PM_{2.5}) and volatile organic compounds. Europe signed onto the Kyoto Protocol to reduce greenhouse gases but is unlikely to meet the committed targets.

As in the United States, the European Commission's energy policies are heavily dependent upon the development and commercialization of new technology in a number of fields. In both regions, new policies and regulations will be needed to meet the challenge of simultaneously addressing the environmental issues of air quality and climate change, and to ensure the security of energy supplies required for economic prosperity.

At this point in time, the United States and the EU have more to gain by working together, especially if the world is to have a healthier environment. In the United States, there is now growing recognition and acceptance that the potential impact of climate change should be a real concern and that the U.S. government needs to address greenhouse gas emissions. The U.S. experience in improving air quality using a complex package of federal, state, and local regulations, as well as monitoring and enforcement procedures, is certainly applicable to reducing greenhouse gases.

While differences exist between how the United States and the EU have dealt with air quality management, analysts on both sides of the Atlantic agree that greater transatlantic cooperation could improve the effectiveness of evolving policies. There are a number of basic principles upon which both U.S. and EU analysts agreed and which could form the basis of a combined approach:

- Both government regulation and market incentives are required;
- Voluntary commitments are useful, but not sufficient;
- Fiscal and financial incentives are often necessary;
- Regulations should provide a sufficiently long time frame to encourage and maintain investments;
- Transparency of information is necessary;
- Changes in values and practices will require wide spread support;
- Governments, non-governmental organizations, the business community, and the public need to work together;
- Policies and regulations should be based on science and cost-benefit analysis;
- Accurate measurement, regular monitoring and reporting, and enforcement are essential; and
- Cross-border pollution must be addressed.

U.S. and European approaches have also converged in that the challenges of addressing climate change and air quality are now viewed by both as part of a larger puzzle involving economic prosperity, energy requirements, and the security of supply. Fortunately, the potential solutions to solving this puzzle are largely complimentary: for example, improving energy security through improved efficiency, conservation, and greater reliance on domestic supplies of renewables, simultaneously reduces greenhouse gases and air pollution. A broader understanding of this principle in both the United States and EU would make clear that U.S. and EU policies are not as contradictory as usually portrayed, but rather converge in some important ways that should allow for significant collaboration.

One area in which substantial cooperation could be remarkably beneficial is in technological research and development. The actual achievement of both U.S. and EU objectives will require a number of new technologies. Again there is a major convergence of transatlantic interest, as many of the same technological solutions are currently advocated in both the U.S. and Europe. These include: efficiency technologies, renewables for electric power, biofuels, clean coal technology (including carbon capture and sequestration), and Generation IV nuclear technology.

The second major area in which significant opportunities exist for U.S. and European collaboration is in reaching out to the developing world. Both are agreed that major future energy consumers — and emitters of pollutants and GHGs — such as China and India, should not remain outside a global approach to clean air and climate change. The United States and EU already sponsor numerous energy and environment related projects in these two countries, yet to date there has been very little sharing of information about what each other is doing and how that might affect the objectives of the other. More coordinated efforts might be more effective in ensuring that these projects contribute to the goal of restraining Chinese and Indian emissions while allowing for economic growth. Moreover, the U.S. and the EU will be far more credible in

reaching out to developing countries if they do so in a combined manner. Only if the U.S. and EU have learned to cooperate in developing air quality standards and regulations — including for CO₂ — will they succeed in enlisting the major energy consumers of the future into this effort.

Conference Agenda

Transatlantic Cooperation for Clean Air

Brussels, February 5-6, 2007

All sessions took place in the Crowne Plaza Brussels City Center Hotel, 3 rue Gineste, 1210
Brussels

Monday 5 February 2007

13:00-14:00 *Opening Luncheon and Registration - in Lobby of Klimt Room (Ground Floor)*

14:15-15:00 Introduction by **Hans Martens**, EPC Chief Executive
Welcome by **Ambassador Boyden Gray**
Remarks by **Commissioner Stavros Dimas**

15:00-16:00 **Session 1 — Overview of Key Issues**

An overview of basic policy toward achieving clean air in the United States and EU, including identification of major pollutants, including particulate matter, ground level ozone, various oxides, and others. US and EU policy responses and current priorities.

Each presentation to last 15 minutes, immediately followed by 15 minutes of discussion.

Moderator: **Pavel Telicka**, Senior Adviser to EPC and Chair of EPC Better Regulation Forum

Presenters:

1. **Peter Carl**, Director General, DG Environment, European Commission
2. **Robert Meyers**, US Environmental Protection Agency
3. **Chris Backes**, University of Utrecht

16:00-16:15 *Break*

16:15-18:15 **Session 2 — Creating Market Incentives for Clean Air**

Past and existing mechanisms intended to encourage reduction of pollution, including trading regimes, internal company cost incentives, and government financial incentives (tax credits, etc.). Compare successes and failures, and consider whether incentives might be developed that work in both the US and EU markets. Do these incentives work on an appropriate time scale, and are the right costs being built into the calculations? The session will also look at whether PM 2.5 enforcement can be developed into a permit system as that used for with SO_x and NO_x.

A 4-person panel presentation will last 1 hour, followed by 1 hour of general discussion.

Moderator: **Jorgen Henningsen**, Senior Adviser to EPC and Chair of EPC Rational Use of Energy Task Force

Panelists:

1. **N. Lew Watts**, President, PFC Energy
2. **William A. Nitze**, Chairman, Climate Institute
3. **Jos Delbeke**, Air and Chemicals Director, DG Environment, European Commission
4. **Suzie Baverstock**, Chair, Air Quality Working Group, BusinessEurope

Tuesday 6 February 2007

9:00-11:00 Session 3 — New Technologies for Clean Air

Examine such technologies as alternative fuels, carbon sequestration, and “clean coal” to assess the extent to which technology will be instrumental in significantly improving air quality. What are the economics of these new technologies, and how can they best be identified and developed into practical alternatives? What is the most appropriate role for government and industry in this process?

A 5-person panel presentation will last 1 hour, followed by 1 hour of general discussion.

Moderator: **Richard L. Lawson**, Atlantic Council Energy & Environment Program

Panelists:

1. **Robert J. Wright**, US Department of Energy, Office of Sequestration, Hydrogen & Clean Coal Fuels
2. **Reid Detchon**, Energy Future Coalition
3. **Peter Lund**, Helsinki University of Technology
4. **John Murlis**, Vice-Chair, Transport Working Group, Environmental Industries Commission
5. **Simon Godwin**, Manager, Automotive Issues, DaimlerChrysler

11:00-11:15 Break

11:15-13:15 Session 4 — Measuring and Enforcing Clean Air Regulations

U.S. and EU processes and standards for enforcing clean air regulations, including how to establish measurable benchmarks for progress and whether litigation is an effective enforcement tool. Effectiveness of federal/national interaction with local communities in achieving clean air aims

A 4-person panel presentation will last 1 hour, followed by 1 hour of general discussion.

Moderator: **Pavel Telicka**, Senior Adviser to EPC and Chair of EPC Better Regulation Forum

Panelists:

1. **Robert Meyers**, US Environmental Protection Agency
2. **John J. Easton**, Edison Electric Institute

3. **Uwe Lahl**, Director General for Environmental Health, German Federal Ministry of the Environment
4. **John Hontelez**, Secretary General, European Environmental Bureau

13:15-14:15 *Working Lunch*

14:15-16:15 **Session 5 — Transatlantic Cooperation for Global Clean Air**

Impact of pollutants from elsewhere on the United States and the EU. US and EU efforts to assist others in improving air quality, including through technical and financial assistance, with an emphasis on efforts directed at China, India, and other key countries. The session will examine whether US-EU cooperation can lead to international standards on clean air, and will explore the potential role of international institutions.

A 3-person panel presentation will last 1 hour, followed by 1 hour of general discussion.

Moderator: **Frances G. Burwell**, Transatlantic Relations Program, Atlantic Council

Panelists:

1. **André Zuber**, Co-Chair, UNECE Task Force on Hemispheric Transport of Air Pollution, DG Environment, European Commission
2. **Dale Evarts**, US Environmental Protection Agency
3. **Rick Bradley**, Head of Energy & Environment Division, International Energy Agency

16:15-16:30 **Conclusions and Thanks**

**Conference List of Participants
Transatlantic Cooperation for Clean Air
Brussels, February 5-6, 2007**

Chris Agren	The Swedish NGO Secretariat on Acid Rain
Lorenzo Allio	European Policy Centre
Chris Backes	University of Utrecht
Suzie Baverstock	BusinessEurope
Markus Becker	RWE
Martin Bigg	UK Environment Agency
H.E. Ambassador Boyden Gray	US Ambassador to the EU
Rick Bradley	International Energy Agency
Günter Burghardt	Mayer, Brown, Rowe & Maw, Gaedertz
Fran Burwell	Atlantic Council of the United States
Peter Carl	European Commission (DG ENVI)
Lynn Cassel	US Mission to the EU
Ian Clark	European Commission (DG ENVI)
Dorette Corbey MEP	European Parliament
Jos Delbeke	European Commission (DG ENVI)
Reid Detchon	Energy Future Coalition
Brian Dick	US Embassy
Stavros Dimas	European Environment Commissioner
John J. Easton	Edison Electric Institute
Dale Evarts	US EPA
Marie-Hélène Fandel	European Policy Centre
Francois Gayet	ASD AeroSpace and Defence Industries Association of Europe
Francesco Giorgianni	ENEL
Simon Godwin	DaimlerChrysler

Walter Goetz	European Parliament
Jennifer Green	European Policy Centre
Jorgen Henningsen	European Policy Centre
John Hontelez	EEB
Jeff Huntington	European Environment Agency
Duncan Johnstone	European Commission (DG ENVI)
Andrej Kobe	European Commission (DG ENVI)
Uwe Lahl	German Ministry of the Environment
Georgette Lalis	European Commission (DG ENTR)
Keith Lane	Atlantic Council of the United States
Stefan Larsson	ACEA
Henrik Laursen	European Commission (DG ENVI)
Richard Lawson	Atlantic Council of the United States
Sarah Legge	London Transport
Eliane Lomax	Atlantic Council of the United States
Luigi Longoni	ASD
John Lyman	Atlantic Council of the United States
Peter Lund	Helsinki Institute of Technology, former Chairman of Advisory Group on Energy, European Commission
Erika Mann MEP	European Parliament
Hans Martens	European Policy Centre
Kerstin Meyer	European Environmental Bureau
Robert Meyers	US EPA
John Murlis	Environmental Industries Committee
Darcy Nicolle	United Technologies/AmCham EU Chairman of Environment Committee
William A. Nitze	Climate Institute
Hylko Oosterloo	US Mission to the EU
Marc Paellemaerts	IIEP
Alexandre Paquot	European Commission (DG ENVI)

Tim Peters	General Electric
Harald Perby	Swedish Environment Ministry Deputy Director
Anna Phillips	US EPA
Graeme Preston	European Commission (DG TREN)
Chris Rochester	US Embassy
Martin Ruhrberg	Verband der Elektrizitätswirtschaft - VDEW
Susan Russell	CHEVRON
Marc Sapir	ETUI
John Schmitz	Mayer, Brown, Rowe & Maw, Gaedertz
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