

# Conference Proceedings

The International Legislators' Conference  
on Clean Energy (ILCCE)

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The 16th GLOBE International  
General Assembly (GIGA XVI)

July 13-15, 2001  
Wye River Conference Center  
Queenstown, Maryland

Hosted by GLOBE USA  
Global Legislators Organization for a Balanced Environment

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## Acknowledgements

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In addition to those organizations and businesses who have joined us as partners, sponsors, and supporters, we would like to express our appreciation to:

The members of the congressional organizing committee: Representative James Greenwood, Representative Wayne Gilchrest, Representative John Olver, Representative Mark Udall and Representative Henry Waxman as well as Senator Jim Jeffords.

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The GLOBE family, including: The Honorable Wakako Hironaka, The Honorable Anders Wijkman, The Honorable Gwen Mahlangu, The Honorable Francois Roelant du Vivier, The Honorable Ryutaro Hashimoto, The Honorable Ilona Graenitz, Mr. Francis Caas, Ms. Mayumi Suzuki, Ms. Marlene Tyrell and Ms. Aude Lemans and Ms. Sabrina Tyus.

Finally, GLOBE USA would like to thank the wonderful group of experts who have volunteered their time and knowledge to participate and speak during this conference.

Copies of these proceedings and additional resources are available on our website at [www.globeusa.org](http://www.globeusa.org).

Thank you,

The GLOBE USA Secretariat Staff

Mr. William Singleton, Executive Director  
Mr. Timothy Bagley, Deputy Director  
Ms. Dominique Baron, Program Associate

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## Terms & Abbreviations

ABA	American Bar Association
ADAS	Associate Deputy Assistant Secretary
ANC	African National Congress
BTU	British Thermal Unit
CAFE	Corporate Average Fuel Economy
CDM	Clean Development Mechanism
CEMDA	Mexican Environmental Law Center
CHP	Combined Heat and Power or Cogeneration
COP3	Third Conference of the Parties to the UNFCCC
COP6	Sixth Conference of the Parties to the UNFCCC
DEC	New York Department of Environmental Conservation
DOE	United States Department of Energy
ECA	Export Credit Agency
EPA	United States Environmental Protection Agency
EU	European Union
Ex-Im	United States Export-Import Bank
FEMP	United States Federal Energy Management Program
G-7	US, UK, France, Germany, Japan, Italy, and Canada
G-8	US, UK, France, Germany, Japan, Italy, Canada and Russia
GEF	Global Environment Facility
GIGA	Globe International General Assembly
GLOBE	Global Legislators Organization for a Balanced Environment
H.R.	House Resolution
IDB	International Development Bank
IEDA	Indian Renewable Energy Development Strategy
ILCCE	International Legislators' Conference on Clean Energy
IPCC	Inter-Governmental Panel on Climate Change
ISAB	International Scientific Advisory Board
IUCN	The World Conservation Union
LDC	Less Developed Country
LDP	Liberal Democratic Party
MEP	Member, European Parliament
MP	Member of Parliament
NGO	Non-Governmental Organization
ODA	Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
OPIC	Overseas Private Investment Corporation
PPP	Polluter Pays Principle
R&D	Research and Development
S.	Senate Resolution
SACCAWU	South African Commercial Catering and Allied Worker's Union
SAREC	Swedish Agency for Research Cooperation with Developing Countries
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USAID	United States Agency for International Development
UTC	United Technologies Corporation
WCFSO	World Commission on Forests and Sustainable Development
WRI	World Resources Institute
ZERI	Zero Emissions Research and Initiatives

## Executive Summary

GLOBE USA hosted over 40 people including 14 legislators, officials from the US and other governments, energy industry leaders, and non-governmental experts for a two-day conference to highlight clean energy as a positive means of reducing carbon emissions.

The International Legislators' Conference on Clean Energy (ILCCE) and the 16th Annual GLOBE International General Assembly (GIGA) were held on July 13 – 15, 2001 at the Wye River Conference Center on the Eastern Shore of Maryland. The ILCCE was an open forum to compare and contrast to policies of Europe, Japan and the United States to promote renewable technologies as well as technologies that increase efficiency in power generation and use.

The Energy Foundation was the major funder of the meeting. Other financial supporters of the conference included BP Solar, Texaco, Nuon Energy, the Heinrich Boell Foundation, the Rockefeller Brothers Fund and Wallace Global Fund.

In a statement released by conference participants<sup>1</sup>, they outlined their belief that climate change is happening because of a pervasive dependence on fossil fuels and asserted that every country is responsible for lowering its own emissions. Conference attendees urged governments and stated their own commitment to promote renewable and efficient energy through tax credits, public procurement, export credit agency (ECA) transparency, stronger environmental guidelines, and the establishment of an international emissions trading system.

### Participants<sup>2</sup>

Among the participants were 14 legislators from the United States, Europe, Japan, India and South Africa. The American legislators included Representative Jim Greenwood, who is Chairman of the Oversight and Investigations Subcommittee of Energy and Commerce, Senator James Jeffords, Chairman of the Environment and Public Works Committee, Representative Wayne Gilchrest, a subcommittee chair on the Committee on Resources as well as a high ranking member of the Science Committee and Committee on Transportation and Infrastructure, and Representative John Olver, a senior member of the Appropriations Committee.

Legislators from other countries included The Honorable Gwendoline Mahlangu, chair of the Environment Committee for the National Assembly of the Republic of South Africa and

The Honorable K.M. Khan, a member of the Indian parliament. Other legislator participants included The Honorable David Bowe, MEP (UK), The Honorable Tony Colman, MP (UK), The Honorable Lujbo Germic, MP (Slovenia), The Honorable Wakako Hironaka, member of the upper House of the Japanese Diet, The Honorable Lindiwe Mbuyazi, MP (South Africa), The Honorable Rita Ndzanga, MP (South Africa), and The Honorable Anders Wijkman, MEP (Sweden). Senator Hironaka is the former environment minister for Japan.

Experts from leading renewable energy companies included United Technologies, Texaco and Nuon Energy, government agencies including the Department of Energy, academia and non-governmental organizations including former Assistant Secretary of State David Sandalow of World Resources Institute (WRI) and Christopher Flavin, President of WorldWatch Institute joined the legislators in active substantive discussions.

### The International Legislators' Conference on Clean Energy

Participants discussed the roles of emerging technologies, energy efficiency, export credits in decreasing the carbon intensity of energy production and use and how legislators can support the substance of international treaties such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol in their own domestic policy making.

### Renewable Energy

Renewable energy was a major focus of the conference. Mr. Christopher Flavin, President of the WorldWatch Institute, noted that while oil use increased 1.1% in the year 2000, wind power increased by 30% and solar power increased by 40%. Over the last ten years, much the same growth pattern has been exhibited, pointing toward more renewable energy consumption.

Promotion of wind energy was widely discussed by those in attendance, including a representative from Nuon, a Dutch multi-national corporation. The German wind energy "feed law" (*Stromeinspeisungsgesetz*) that requires the purchase of wind generated energy at 90% the retail rate was discussed as a model for increasing wind energy use elsewhere. According to the Energy Information Administration, success of the German program has helped the German wind industry become the largest in the world.

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1. The statement made by legislators is available in Appendix ES1.  
2. The Participant List is available in Appendix ES2.

Hydrogen energy was also widely discussed after presentations by experts from United Technologies and Texaco and a special presentation by the Chief of Mission from the Embassy of Iceland. They presented the case that the world is moving toward a hydrogen economy. Texaco estimates that energy-use worldwide will be largely hydrogen-based between the years 2020 and 2050.

Economic opportunity and growth will come to those who have invested in these renewable technologies. This growing economic sector is comparable to that of the information technologies and online corporations of the 1980s. Legislators were able to see that well-established and market-minded industry leaders are preparing to position themselves as leaders in the renewable energy sectors. They also came to understand that renewable technologies are already an important competitiveness issue for Japan, Europe and the United States.

Legislators learned of specific ways that they could bring the new technologies to maturity. Among the roles that legislators can play in promoting new technologies such as wind, solar and fuel cells are: opening the electric grid to new players in renewable technologies; creating long-term tax incentives and grants for purchase; expanding fleet vehicle programs for fuel cell, hybrid or clean energy buses and cars; creating an international standard for new technologies; reducing import barriers; and promoting renewable energy procurement by governments.

### *Climate Change & Clean Energy*

International climate change issues and the related UNFCCC negotiations were discussed at some length by conference participants. Legislators from represented countries were able to speak frankly with members of the US Congress about US climate change policy. Notably, Senator Jim Jeffords, the Chair of the Senate Environment and Public Works Committee, voiced his disagreement with the Bush administration on US participation in the Climate Change Convention and stated that he plans to do everything within his power to see that the US lives up to its obligations under the UNFCCC.

Discussions revealed that major differences exist in the approaches taken by the world's largest economies to address clean energy and climate change. The US has taken a largely voluntary approach with emphasis placed on emissions trading. European countries and the EU as a whole have relied on taxation and regulation to increase renewable energy use. This pattern has been very successful in the European system. Japan has relied heavily on increasing energy efficiency and conservation.

Japan has taken steps to reach its reduction goal of 6% below 1990 levels. These initiatives, as outlined by Mr. Takashi Kosugi, include nuclear power and significant increases in energy conservation. Ms. Wakako Hironaka, MP, also spoke to

the Japanese role in addressing greenhouse gas emissions, noting the responsibility that should be accepted by the US and Japan to adhere to ratified international treaties.

Mr. Tony Colman, MP, cited a study completed by the House of Commons Library stating that the US now needs to reduce greenhouse gas emissions 20% in order to reach 1990 emissions levels. Mr. Colman highlighted the relatively easy steps that could bring the United States into compliance including regional and state initiatives and those undertaken by government agencies.

From a European perspective, Mr. Anders Wijkman, MEP, addressed initiatives in the EU and also highlighted the "low hanging fruit" for US reductions in carbon emissions. The EU recently released its Climate Action Plan. This study concluded that the EU can reduce carbon dioxide emissions by at least 16% or double the requirement in the Kyoto Protocol for an annual cost that is less than US\$20 dollars per European citizen. The first 8% reduction is estimated to be less than US\$10 dollars per capita. He concluded that since the US economy is less energy-efficient, the cost for emissions reductions should be even lower.

Other EU policy goals include financial assistance to candidate EU member states, environmentally sound tax subsidies, implementation of the polluter pays principle, increased use of renewable energy and combined heat and power.

### *Energy Efficiency*

Mr. John Olver, the Democratic Co-Chair of the US House of Representatives Climate Change Caucus chaired a discussion on increasing efficiency at government facilities. Mr. James C. Greenwood chaired a discussion on efficiency and conservation.

Presentations revealed that fifty percent of energy used by the US government could be saved through conservation measures. Initiatives are being undertaken on both federal and state levels of government to increase energy efficiency. For example, the Governor of New York, represented at this conference by Mr. John Cahill, issued an executive order mandating all New York state agencies to reduce their energy consumption by 35% by 2010.

At the federal level, the Department of Energy and the Federal Energy Management Program are also addressing conservation issues. The US Department of Energy is reducing its energy use by 45% by 2010, using 1995 as a baseline year. The US Department of Energy also plans to reduce its greenhouse gas emissions by 30% from 1990 levels. Government was highlighted as a major force in shaping the energy marketplace. Reforms in US government procurement policies could have a far-reaching impact for renewable energy technology and US competitiveness.

On a larger scale of energy efficiency, shortages of energy supply and an aging infrastructure are among the challenges faced by the US in coming years. Larger demands are being placed on energy systems worldwide with the advent of the digital age. This will require larger supplies and more efficient use of the energy currently being produced.

According to Dr. Miranda Schreurs of the University of Maryland, the US has higher carbon dioxide emissions per capita when compared to Japan and Germany, the next two largest economies. These differences can be attributed to energy conservation and energy costs. According to the Energy Information Administration, Japan is a world leader on energy efficiency issues.

### ***Export Credits***

An important tool of financing energy development in developing countries and transitional states is export credits. Highlights of the GLOBE USA/World Resources Institute conference that was sponsored by Rockefeller Brothers Fund at the Pocantico Conference Center of the Rockefeller Brothers Fund in June 2001 were presented to the legislators attending the Wye meeting. The summary featured WRI's *Climate Notes* publication<sup>3</sup> which analyzes export credit lending for carbon intensive industries over a five year period and draws a stark contrast between the pro-Kyoto rhetoric of Organisation for Economic Co-operation and Development (OECD) countries and their lending practices which have helped to spur tremendous carbon emissions growth in the developing world.

Mr. Tony Colman, MP presented his experiences in achieving parliamentary debate on the impact of export credit agencies on climate. He pursued this initiative as a result of his attendance of the March GLOBE USA/WRI conference. Mr. Anders Wijkman, MEP stressed the importance of the issue and its

overall impact on the global environment. He stated that he is trying to put ECAs under EU competency.

Mr. James Mahoney, Vice President of the US Export-Import Bank presented the perspective of the Export-Import Bank as it worked to achieve strong common environmental standards for all OECD ECAs. Transparency was stressed as the most important way of achieving greater environmental sustainability among the ECAs.

The legislators gathered for the conference expressed their interest in pursuing an active ECA reform campaign coordinated by GLOBE USA utilizing the GLOBE International network.

### **Outcomes**

In a statement released by conference participants<sup>1</sup>, they outlined their belief that climate change is happening because of a pervasive dependence on fossil fuels and asserted that every country is responsible for lowering its own emissions. Conference attendees urged governments and stated their own commitment to promote renewable and efficient energy through tax credits, public procurement, ECA transparency, stronger environmental guidelines, and the establishment of an international emissions trading system.

The outcomes of this conference have been varied and many. Legislators have returned home with a deeper understanding of the role they play in addressing clean energy, and with a renewed dedication to work with their colleagues on these important issues.

GLOBE USA will continue to strive to provide opportunities for legislators to become more engaged in an increasingly global environmental policy arena.

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3. The *Climate Notes* publication from WRI is available in Appendix E2.

## Overview of the Issues: Legislators and their Role in Clean Technology

Panel Session Chaired by The Honorable James C. Greenwood, GLOBE USA

### Panel Speakers:

The Honorable Takashi Kosugi, GLOBE Japan  
The Honorable Wayne Gilchrest, GLOBE USA  
The Honorable Anders Wijkman, GLOBE EU  
The Honorable Jim Jeffords, GLOBE USA  
The Honorable Gwendoline Mahlangu, GLOBE Southern Africa

## Summary of Remarks by The Honorable Takashi Kosugi, GLOBE Japan

*Mr. Takashi Kosugi is a former member of the Japanese House of Representatives and is a member of the Liberal Democratic Party (LDP) in Japan. During his time in the Japanese Diet he served as the Chairman of GLOBE Japan from 1995 to 2000. He also served as the GLOBE International President from 1993 to 1995.*

### Energy Policy in Japan<sup>1</sup>

The first oil crisis in 1973 was a shock for Japan. Prior to current energy conservation efforts, Japan was dependent on oil. Between 1973 and 1999, Japan diversified its oil sources in the following ways:

- The share of oil in the total energy supply in Japan dropped from 77% to 52%;
- The share of natural gas in the total energy supply increased from 1% to 13%; and
- Nuclear power expanded to one third of the total power generation.

Energy consumption in the residential, commercial, and transportation sectors has been increasing as citizens achieve higher standards of living. The main consumers of energy have shifted from the industrial sector to the residential, commercial and transport sectors.

In 1999, carbon dioxide from the energy sector grew to over 8.9% of the 1990 level. Japan will make efforts to reduce this amount by 2010. Nuclear power has simultaneously been promoted to achieve energy security and a reduction in emissions.

Thirty four and a half percent of total power generation in Japan is due to the supply and price of nuclear energy. However, accidents in 1999 brought about doubts in nuclear safety and the Nuclear Development Program was created. Rather than the previous projection of 16-20 new nuclear power plants, Japan is currently projected to increase its nuclear capacity to 13 new plants by the year 2010.

Since COP3, when the Kyoto Protocol was adopted, Japan has been promoting various domestic measures to achieve the 6% reduction target assigned to it in the Kyoto Protocol. For example, Japan amended its energy conservation goal in 1998 and introduced the Top Runner Program<sup>2</sup>.

The Top Runner Program is a legally binding energy efficiency standard that covers 11 categories of products including vehicles and computers, as well as other consumer goods. Products within the Top Runner Program achieve the highest level of energy performance when compared to similar products on the market.

Efforts to reduce greenhouse gases are being made by the government, local municipalities, industry, and civil society. Japanese legislators have established non-partisan organizations that promote renewable energy. Many GLOBE Japan members have joined such organizations.

The Inter-Governmental Panel on Climate Change (IPCC) has reported that the global warming problem is worsening.

***Japan intends to act as a bridge between the United States and the European Union with the intention of bringing the United States back to the table at the continuing Kyoto Protocol negotiations.***

1. For the Energy Information Administration's Country Analysis Brief of Japanese energy policy, please visit: <http://www.eia.doe.gov/emeu/cabs/japan.html>  
2. Please see Appendix A1 for further information on the Top Runner Program.

GLOBE Japan sent a letter to President Bush urging him to reconsider his position on the climate change accord<sup>3</sup>.

The Japanese government hopes that the US will join the Kyoto Protocol. Japanese Prime Minister Kozumi has spoken with leaders in the United States, the United Kingdom and France. Japan intends to act as a bridge between the United States and the European Union with the intention of bringing the United

States back to the table at the continuing Kyoto Protocol negotiations.

GLOBE Japan has shown its political will to strengthen international measures on climate change through implementation of the Kyoto Protocol and has asked other members to express their own political views to ensure the success of the negotiations at the COP6 meetings.

## Summary of Remarks by The Honorable Wayne Gilchrest, GLOBE USA

*Mr. Gilchrest has been a member of GLOBE since 1993. He is a founding member and co-chair of the House of Representatives Climate Change Caucus along with his fellow GLOBE USA member, Representative John Olver.*

### Climate Change Politics in the US<sup>4</sup>

Among Members in the United States Congress there are many in each party – Democrats, Republicans and Independents – who believe that climate change is indeed a cause for concern. Despite the administration's lack of support for the Kyoto Protocol, many of these legislators are working with the President, presidential advisors, and the president's cabinet to support development of domestic and international policies that reduce the impact of carbon dioxide on the global environment.

Many in Congress feel that the United States should be involved in the development of international policy to address the mounting problem of global climate change. The US should assume a leadership position and use its intellect, ingenuity and initiative to pursue proactive involvement in international negotiations. There is a strong possibility that the administration will move forward in the right direction on climate change policy before the year's end. Work with the Environmental Protection Agency (EPA), the Department of Commerce, the Department of Energy and others has been undertaken to meet this goal.

### Bills in Congress

Currently, there are several legislative proposals in the US Congress concerning environmental and climate issues. These bills include:

- A bill proposed by Representative Nancy Johnson (R-CT), a fellow member of GLOBE USA, on tax credits for fuel cells<sup>5</sup>. Such tax credits will support advances in new technologies;
- Bills on CAFE (corporate average fuel economy) standards that increase the average fuel mileage of vehicles<sup>6</sup>;

- Tax credits for hybrid vehicles;
- The introduction of a bill that proposes the reduction of greenhouse gases, carbon dioxide in particular, known as the "Four Pollutant Bill."<sup>7</sup>

It is important to remember that initiatives such as these do exist. It is also important to remember that in our democratic society, differences of opinion will always exist. When President Bush speaks, be it in Cincinnati or Moscow, he is speaking for his administration. Like other governments and parliaments around the world, Washington thrives on debates that do not simply follow party lines.

In the US Congress, before bills are voted on, there is an exchange of information, and there is almost always a sense of tolerance for opinions that are expressed on an issue. Bills pass due to reliable and credible information and persistence. Patience is often a key to passing a bill in Congress.

The above-mentioned bills, and others, are being discussed among legislators. There are many bills in the legislative process that aim to bring the United States into more of a leadership role on climate change issues.

### Climate Change Caucus<sup>8</sup>

This caucus has played a vital role in dealing with the issue of climate change within the United States Congress and is extremely active on the issue. The Caucus has been working with top scientists in the field to educate members of Congress and the administration on climate change issues.

Through this work with the administration, President Bush initiated, with the National Academy of Sciences, a study of the Intergovernmental Panel on Climate Change (IPCC) third draft report. The final conclusion of the administration's study found that human activity is causing the planet's climate to warm. This report is being used to help legislators understand the issue and to move forward to address it.

3. A copy of the letter from GLOBE Japan is available in Appendix A2.

4. For the Energy Information Administration's Country Analysis Brief of American energy policy, please visit: <http://www.eia.doe.gov/emeu/cabs/usa.html>

5. For the full text of this fuel cell bill, H.R. 1275, please see Appendix A3.

6. For the full text of these CAFE bills, H.R. 1815 and S. 804, please see Appendix A4.

7. For the full text of these 4 Pollutants bills, H.R. 1256, H.R. 1335 and S. 556, please see Appendix A5.

8. The website for the Climate Change Caucus is available online at: <http://www.house.gov/olver/cccc.html>

The Caucus has also been active on recent floor votes, urging support for improved CAFE standards, opposing drilling in the Arctic National Wildlife Refuge, and supporting co-sponsorship of H.R. 1256, the Four Pollutant Bill.

Not only are these issues being addressed at the national level in the Congress, but other environmental initiatives are being undertaken on state and local levels as well. For instance, work is being done with other policymakers in Maryland, Virginia and Delaware to promote environmentally sound agricultural practices throughout the Delmarva Peninsula, while creating a habitat conservation corridor through those three states. The goal is to establish and maintain a cohesive and well-functioning ecosystem — a conservation corridor that includes land used for agriculture, recreation, and conservation. This project

has both economic and ecological benefits. The Delmarva Conservation Corridor project will help make the air and water cleaner, it will sustain the natural flora and fauna in the region, and it will keep agriculture economically viable. Just as importantly, the Delmarva Conservation Corridor project will have a positive net effect on our atmospheric carbon budget. Local, national and international efforts all play a role in reducing our impact on the global climate.

*In February 2001, Representative Gilchrest sponsored a letter with fellow GLOBE members Representatives John Olver, Jim Greenwood and Henry Waxman to Vice President Cheney regarding the National Energy Policy. This letter is available in Appendix A6.*

## Summary of Remarks by The Honorable Anders Wijkman, GLOBE EU

*Mr. Anders Wijkman has been a member of the European Parliament since 1999. He is the President of GLOBE EU. He served as a member of the Swedish parliament from 1970 through 1978. Mr. Wijkman has been a member of several government task forces on issues related to the environment, sustainable development, energy and foreign aid.*

### Energy Policy in the European Union<sup>9</sup>

Currently, there is no common energy policy among the 15 European Union member states. One hurdle to developing this policy is that many of the member states view energy policy as a national interest. There is a common environmental policy which means that energy issues directly affecting the environment can be addressed jointly. However, energy policy frameworks differ widely between member states. Due to the fact that pollution does not stop at borders and given the joint commitment of all EU members under the Kyoto Protocol, a common energy policy is inevitable within the European Union.

### Climate Action Plan<sup>10</sup>

The European Commission recently presented its Climate Action Plan. This study concluded that that the EU can reduce carbon dioxide emissions by at least 16% or double the requirement in the Kyoto Protocol for an annual cost that is

less than US\$20 dollars per European citizen. The first 8% reduction is estimated to be less than US\$10 dollars per capita. Since the US economy is less energy efficient, the cost for emissions reductions should be even lower.

### Policy Formation and Technology

The following measures are currently being considered in the European Union to move away from a carbon based economy:

- The creation of policy frameworks and tax subsidies that are beneficial to the environment.

Subsidies that are harmful to the environment are being phased out;

- The implementation of the polluter pays principle – external costs have to be internalized in the market prices of energy;

- There are limits to taxation as a solution to enhancing energy efficiency and moving away from

fossil fuels. A parallel approach will be to work through setting standards and norms;

- By 2010, the European Union will attempt to raise the rate of renewable energy in the power supply from 10% to 22%;

- Attempts are being made to establish minimum standards to increase the energy efficiency of the building and transportation sectors as well as the efficiency of household appliances. For example, a recent study conducted in Australia<sup>11</sup> found that the standby mode on household appliances and electric equipment accounts for up to 11.6% of household electricity consumption. This is a large amount of wasted energy that should be addressed. Much of the implementation

**Cooperation among the developed and developing countries will lead to stronger action on climate change policy.**

9. For the Energy Information Administration's Country Analysis Brief of European Union energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/euro.html>

10. The Climate Action Plan is available in Appendix A7.

11. More information on this Australian study can be found online at: <http://www.greenhouse.gov.au/energyefficiency/appliances/standby/index.html> and <http://www.eccj.or.jp/iea/01/text/iea01-3.html>

of these policies is left up to EU member states;

— Combined heat and power<sup>12</sup> (CHP) is currently being promoted. The goal is to raise the ratio of CHP from 10% to 20% of all power generated; and

— An overriding goal is set for the EU to reduce its energy intensity, the amount of energy per production output that a country uses, by 2.5% annually. This would decouple economic growth and energy demand. Currently, the EU has reduced its energy intensity by 1% annually in the 1990s, rates of reduction have been higher in years of strong economic growth. The Climate Action Plan lists measures that will help meet this goal.

Resources allocated for R&D to promote energy efficiency and renewables are insufficient. Only 10% of R&D is for new technologies, conventional technologies receive the other 90% of funding. A lot of evidence shows that the investment cost for new technologies decreases significantly with increasing supply. The rule of thumb is that each time demand is doubled, supply costs decrease by 10 to 15%. This holds true for

conventional technologies as well as for solar, wind and other renewables due to the associated learning curves.

Public procurement could play a much more important role than it has in the past in alternative energy promotion. Examples of this exist in Denmark and Sweden where public money has moved in to push prices down in certain sectors. This has helped to make renewable energies as well as energy efficient equipment more affordable to consumers. The EU is changing its policies to take into account the role public procurement can play in order to promote sustainable consumption.

The Kyoto Protocol will not be truly effective until developing countries are included. However, little has been done since the Rio conference to stimulate “technology leap-frogging” in the South. The Clean Development Mechanism offers an opportunity but overseas development assistance (ODA) could also play a key role, notably in capacity building.

## Summary of Remarks by The Honorable Jim Jeffords, GLOBE USA

The current environment and energy policies of the Bush administration are of serious concern to Senator Jim Jeffords, the Chairman of the Environment and Public Works Committee in the United States Senate and a GLOBE member since 1992.

Raised in Vermont, one of the “greenest” states in the US, Mr. Jeffords has a long history of loyalty to the environmental cause. In the 1960’s he played a substantial role in forming Vermont’s environmental policies and laws.

He was elected to the US House of Representatives in 1975 and worked with both parties in Congress to establish a significant renewable energy program during the 1970’s energy crisis. Due in large part to his initiative, wind and solar programs were started at the Department of Energy. He also

helped to establish a 10% reduction of gasoline usage by making ethanol a substitute.

Throughout all of this work, he has learned that you have to fight for the causes that you believe in, in order to accomplish your goals.

***As Chairman of the Environment and Public Works Committee, Senator Jeffords plans to do everything possible to make sure that this nation lives up to its obligations under the Kyoto Protocol and other environmental accords that the US enters into.***

As Chairman of the Environment and Public Works Committee, Mr. Jeffords plans to do everything possible to make sure that this nation lives up to its obligations under the Kyoto Protocol and other environmental accords that the US enters into.

Mr. Jeffords disagrees with the president on his climate

change position and many of his environmental policies. It is a top priority of the Senator to see that the Environment and Public Works Committee makes a difference in these areas.

## Summary of Remarks by The Honorable Gwendoline Mahlangu, GLOBE South Africa

*In 1994 Ms. Gwendoline Mahlangu was sworn in as a Member of the South African Parliament. She initially served as a Whip of Parliament from 1995 to 1997. She was then appointed Chair of the Portfolio Committee on Environmental Affairs and Tourism. She also serves as a member on the Rules Committee, Joint Monitoring Committee on Improvement of Quality of Life*

*and Status of Women and International Relations Committee of the National Assembly in the Parliament of South Africa. She has been an active member of GLOBE Southern Africa since its inception in 1998, and has served as its Acting President since November 2000.*

12. The fact sheet titled “Combined Heat and Power: Combining Energy Reliability and Efficiency with Pollution Reduction” by the US Combined Heat and Power Association is available in Appendix A8.

## The National Committee

Like all parliaments, there are a number of committees operating within the National Assembly of the Parliament of South Africa<sup>13</sup>. One of these committees is the Committee on Environmental Affairs and Tourism. Ms. Gwendoline Mahlangu is the chair of this committee that has 26 members and works as a collective body. The committee operates in a unique way from other National Assembly committees; issues are divided among members and then are discussed. This committee has had great success in bringing environmental issues to the forefront of discussion and making environmental policy one of the key policy areas in South Africa.

The new government of South Africa faces several difficulties with regard to environmental policy. Many old laws had to be changed and new legislation introduced to help make environmental policy sustainable and good for citizens.

Enforcement issues also had to be addressed when introducing this new legislation. The National Environmental Management Act<sup>14</sup> is one of the key pieces of legislation that promotes sustainable environmental management in South Africa. It calls for enforcement of the polluter pays principle<sup>15</sup>. Other significant environmental legislation in South Africa is included in the 1996 Constitution; in the Bill of Rights the citizens of South Africa are guaranteed the right to a clean environment.

Many citizens want to see progress made on deliverables to address poverty in South Africa (clinics, new schools, and health systems), in the face of these problems, citizens do not often understand the defense of the environment as a policy priority. There is a need to make progress in the area of deliverables as well as to protect the environment. Progress with regard to deliverables is futile without proper attention to the environmental situation.

The current government is charged with undoing parts of the past as well as creating new programs for the present and the future. Apartheid was not beneficial for the people of South Africa. However, during that period of South Africa's his-

tory, legislation existed that had a positive impact upon environmental policy. A challenge for the current government is to decide what policies and legislation need to be eliminated and which need to be kept.

## The Relationship between Energy, Poverty, and the Environment

In South Africa, 1.5 to 2 million people do not have access to electricity. Of those, most are in poor and rural areas, where, when electricity is accessed, it is more expensive than in the more developed and richer areas. Generally, poor people are more vulnerable and pay more for power; they have not benefited from conventional energy policies and technologies. This is a cycle that is not easily broken. While access to electricity does not guarantee economic development, the lack of this access does inhibit the economic growth from taking place.

There is a direct link between energy, poverty and the environment in poor and rural areas. The energy use in poor countries is environmentally harmful and inefficient; the poor cannot afford efficient and clean energy. Consequently, the use of energy directly contributes to the depletion of the environment.

Environmental issues such as air pollution and climate change affect poor countries by impacting the level of education, health, educational opportunities, and morbidity. The level of time, effort, and family resources spent on providing poor households with energy is enormous, generally, poor women and children bear the burden of obtaining energy – often in the form of fuel wood.

Conventional energy policies have failed to meet the needs of the majority of the poor. Numerous opportunities are available for meeting needs at a much lower cost than has traditionally been the case. By using effective technologies, mainly renewable energy sources, basic human needs can be met,

***There is a direct link between energy, poverty and the environment in poor and rural areas. The energy use in poor countries is environmentally harmful and inefficient; the poor cannot afford efficient and clean energy. Consequently, the use of energy directly contributes to the depletion of the environment.***

13. For the Energy Information Administration's Country Analysis Brief of South African energy policy, please visit: <http://www.eia.doe.gov/emeu/cabs/safrica.html>

14. The National Environmental Management Act of South Africa can be found in Appendix A9.

15. **Polluter Pays Principle:** to internalize external costs of pollution by requiring the polluter to pay for the costs of the pollution. The polluter should bear the expenses of preventing and controlling pollution to ensure that the environment is in an acceptable state, irrespective of whether these costs are incurred through some charge on pollutant emission or are in response to some direct regulation leading to an enforced reduction in pollution. The PPP was adopted by the Organisation for Economic Co-operation and Development (OECD) in 1972 as the overarching economic and social principle for promoting efficient resource allocation for environmental protection while protecting free trade.

See: [http://www.lu.se/IEE/research/products/epr/epr\\_1998/epr\\_1998\\_davis.html](http://www.lu.se/IEE/research/products/epr/epr_1998/epr_1998_davis.html); Cited to The Polluter Pays Principle: Definition, Analysis, Implementation, Organisation for Economic Co-operation and Development, Paris (1975).

poverty can be alleviated and the environment can be protected.

The key to dealing with environmental issues in the developing world is to diversify energy supply sources and to increase energy efficiency. The developing world is challenged with ensuring access to energy to millions of urban and rural poor. There should be an increased commitment to ensure that all have access to affordable energy. New constructive partnerships need to be created between the North and the South which are action oriented, measurable, and contain agreed upon targets and timetables.

South Africa's president noted, when he addressed the recently held World Economic Forum meeting, "We propose a global partnership for Africa's development and inclusion in the world. This poses a challenge and an opportunity to all coun-

tries of the world. The continued marginalization of Africa from the globalization process and social exclusion of the vast majority of our people constitutes a serious threat to global stability. Simultaneously, the establishing of some governance at the global level remains incomplete but essential for the sustainability of the globalization process. Implementation of a program will not only be a major step forward in developing effective global governance, but also make profound contributions to the future world fate of the entire globe."

Developing countries have the most to gain from sustainable energy, people living in poverty are the most vulnerable to the negative environmental effects of current energy development and would benefit the most in terms of social and economic development from sustainable energy. Solutions to problems such as these are what legislators hope to find at a conference such as this.

## Alternative Energies and the Legislative Role

Panel Session Chaired by The Honorable K.M. Khan, GLOBE India

### Panel Speakers:

Mr. Christopher Flavin, WorldWatch Institute  
Ms. Judith Bayer, International Fuel Cells  
Mr. Gunter Pauli, ZERI Foundation  
Mr. Michael Redemer, Texaco Technology Ventures  
Mr. Matt Cheney, Nuon Energy

## Summary of Remarks by The Honorable K.M. Khan, GLOBE India<sup>1</sup>

*Mr. K.M. Khan was elected to the Rajya Sabha, the upper house of the Indian Parliament, in April, 1994, and was re-elected to serve a second term in April, 2000. Before being elected to the Rajya Sabha, Mr. Khan was a businessman and trade union leader.*

### Energy Policy in India<sup>2</sup>

Developing countries in different parts of the world have undergone rapid industrialization and growth. High rates of pollution in large cities have caused a serious health hazard to human kind. Such growth in the chemical, transport, communication and energy sectors as a whole has resulted in the warming of the earth.

The high rate of pollution in large cities has emerged as a serious threat and health hazard to mankind. India is facing a serious problem of pollution and the contamination of water. All branches of the Indian government have taken note of this problem. At the recommendation of the Supreme Court, the government has decided to shift more than 50,000 industrial pollution units from Delhi; conventional buses, taxis, trucks, and three wheelers are no longer allowed to operate in Delhi. Today you do not find pollution causing vehicles on Delhi's roads.

According to a World Bank report, India's per capita energy consumption is much lower than the global average of 1684 kilograms of oil equivalent, and is 5-10% that of developed countries such as Japan, France, and the United States. In 1990, carbon dioxide emissions from India averaged around 3% of global equivalent emissions. The development of the energy sector in India must be analyzed from the point of view of several aspects like the impact of economic growth, energy security, and environmental impact.

The magnitude of energy consumption is seen as an indicator of the level of development. India's projected economic growth rate is estimated to be 7% between 1997-2012. The energy consumption in a country is also directly related to the population. The population of India has grown from 300 million people in 1947 to approximately 1 billion people today. This population growth along with increased economic development has placed a strain on India's infrastructure and the environment of the country.

The conventional energy sector has not met the growing energy demand caused by this population growth. In order to meet the energy needs of under-served populations, renewable energy development is needed. Renewable energy technologies already in place in India include biomass, solar energy, small hydro-electricity and wind energy.

### The Indian Renewable Energy Development Strategy

The Indian Renewable Energy Development Strategy (IEDA) is a research and development financial institution that is meant to serve the renewable energy sector. IEDA provides budgetary support to the government. This program includes participation with the private sector to develop renewable energy. Private investment in the energy sector is promoted by fiscal incentives such as tax holidays, depreciation allowance facilities and the remunerative returns for the power provided to the grid.

Legislators worldwide must play an active role in promoting clean technologies and clean energy. Those assembled here, and members of GLOBE elsewhere, should apply themselves to creating effective legislation in their home countries in order to address global warming and the pollution dangers that face mankind in the years to come.

1. A transcript of this presentation was provided by The Honorable K.M. Khan; it is available in Appendix B1.

2. For the Energy Information Administration's Country Analysis Brief of Indian Energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/india.html>

## Summary of Remarks by Mr. Christopher Flavin, Worldwatch Institute

*Mr. Christopher Flavin is President of the Worldwatch Institute, where he is responsible for overall management and fundraising, leads the Institute's management team, and represents the Institute before a broad range of audiences around the world. He is an ex-officio member of the Institute's Board of Directors and its Executive Committee.*

### International Energy Issues

The present is a dynamic time in energy markets and it is an important time to take advantage of technologies that will eventually stabilize the global atmosphere through legislation. The leaders of conventional energy companies are recognizing that changes are necessary with regard to how energy is consumed. Worldwide in the year 2000, oil use increased by 1.1%, nuclear energy increased by .05%, and the use of coal decreased by 4.5%. Meanwhile, the use of wind power increased by 30% and the use of solar power increased by 40%. The annual average growth rate over the last ten years in these sectors reveals much the same growth numbers, the year 2000 was not an anomaly in the energy sector.

It is not just the renewable energy sources that are taking off in new markets. Fuel cells are emerging as a new technology that is being aggressively pursued by virtually all of the major automobile and most of the major energy companies. We are reaching a point in energy development where we can begin to build the infrastructure necessary to implement widespread use of these new technologies in the years to come. We can see through the work of companies such as Shell and Texaco that there will be a relatively seamless transition from current technologies to these new emerging technologies.

For all of this to happen, additional policy changes are necessary. The role of parliaments around the world is crucial. One of the best examples of the potential for this shift in energy use

## Summary of Remarks by Ms. Judith Bayer, International Fuel Cells<sup>6</sup>

*Ms. Judith Bayer currently serves as United Technologies Corporation's (UTC) top liaison with government policy makers on all environment and worker safety issues. While knowledgeable on a wide variety of issues, her present focus is climate change. She also handles all federal government relations activities for UTC's International Fuel Cells subsidiary.*

### Fuel Cell Technology

Fuel cell technology is a reality today. A fuel cell is an energy producing device that uses hydrogen and oxygen to create elec-

tricity. Fuel cells are stacked upon one another to create a specific amount of power. Six hundred fuel cells stacked together create 200 kilowatts of power.

The following three renewable energy policies should be addressed:

— Open the grid to new players in renewables and in micropower technologies. In order to do this, it will be necessary to follow the policies in Germany<sup>3</sup>, Spain<sup>4</sup>, and Denmark<sup>5</sup>. Fair market prices need to be set that reflect the environmental benefits and provide automatic access to the grid at that price. The scale of the market can be regulated by varying that price over time, the price does not need to be fixed;

— Create modest, long-term tax incentives. For example, tax credits should be set for five to 10 years at a time rather than two years at a time. This time constraint has reduced the amount of investment that would be possible under a longer term tax credit plan. Tax credits should also be extended to include fuel cells and micropower technologies; and

— Become more serious about the purchasing power of governments in the energy marketplace. Governments need to be encouraged to become major green power purchasers. Green power markets are opening in many countries and government purchases have the ability to get that market moving. The US Government is a major consumer of energy, as well as state and local governments.

The energy transition should be driven by fundamental technologies which in turn are driven by environmental needs; the current energy system is not appropriate for, nor is it consistent with, the kind of information and energy system that is compatible with the needs of the 21<sup>st</sup> century.

International Fuel Cells is the only company in the world that has a commercial fuel cell product available today. They have produced the fuel cells for all of the manned space missions since 1966 and in that application they provide electricity as well as drinking water for the astronauts. That technology has been brought down to earth and is currently being pursued for everything from laptop computers and automobiles to homes,

3. For the Energy Information Administration's Country Analysis Brief of German energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/germany.html>

4. For the Energy Information Administration's Country Analysis Brief of Spanish energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/spain.html>

5. For the Energy Information Administration's Data, Analyses and Reports on Denmark, please visit: <http://www.eia.doe.gov/emeu/international/denmark.html>

6. Slides from this presentation were provided by Ms. Judith Bayer; they are available in Appendix B2.

schools, hospitals, banks and hotels. The technology is available today, and while further research and development is needed, the proof of concept has already been shown.

Efforts are underway to make fuel cell technology commercially available for home use by 2003. International Fuel Cells defines commercially available as making a product available to consumers that is sold under a warranty. The goal is to have this technology commercially available for buses by 2006 and widely available for cars by 2010. While this is an ambitious timetable, industry leaders believe it to be achievable.

***There is also great potential for fuel cells to be used as a "leap frog" technology by developing countries. Fuel cells can be installed at the point of use, thus eliminating the need for investment in an extensive and expensive electricity grid or supporting infrastructure. This gives developing economies an opportunity to move to a cleaner energy system without following the more conventional development path.***

Legislators have the following options in the role they play in advancing technologies:

- Create tax credits to assist in deploying this technology in a mainstream fashion;
- Create grants for the states and public sector that can be utilized for the public purchase of fuel cells;
- Encourage federal facilities to purchase fuel cell technologies. The United States Government is the single largest energy consumer in the United States; in 1999 the government purchased US\$8 billion dollars in energy purchases. In addition, public funds could be used to deploy fuel cells at schools, post offices, and veterans administration hospitals, etc.;
- Expand fuel cell bus programs. Transit buses offer a unique opportunity to transition to the hydrogen economy since their

infrastructure is centralized. Fleet vehicles, including those of the US Government, are also a prime candidate for fuel cell power because they return to a centralized refueling station each day; and

- Work to eliminate the regulatory barriers for this technology. Create an international standard for fuel cells so the technology can be consistently deployed from country to country.

There is tremendous opportunity to create public and private partnerships that can deploy fuel cell technologies as countries look at mandatory versus voluntary emissions reductions.

Voluntary targets are not

going to deploy fuel cell technologies as quickly or effectively as mandatory targets.

There is also great potential for fuel cells to be used as a "leap frog" technology by developing countries. Fuel cells can be installed at the point of use, thus eliminating the need for investment in an extensive and expensive electricity grid or supporting infrastructure. This gives developing economies an opportunity to move to a cleaner energy system without following the more conventional development path. There are many opportunities for public-private partnerships to help deploy this exciting technology and legislators can play an essential role in this process.

## Summary of Remarks by Mr. Gunter Pauli, ZERI Foundation

*Mr. Gunter Pauli is an economist by trade and currently leads the ZERI Foundation<sup>7</sup> which focuses on zero emissions issues.*

### Energy Issues

There are several examples which show that energy efficiency and clean energy are at the beginning of innovation. For instance, the human heart has .003 horsepower that is fueled by a simple potassium-calcium reaction. The heart is capable of pumping 2000 gallons of blood every day. The efficiency of this operation is greater than any energy production medium, including fuel cells, and it works throughout the life of the body it is powering. However, there is no research that has been done in order to assess and understand how this energy producing function works.

The second example of a natural process that has yet to be

understood and harnessed for its energy is in understanding how an apple defies gravity to reach the top of a tree. This fruit is capable of defying one of the most basic physical laws, that of gravity. There is a massive power system in nature that we do not yet understand.

Energy efficiency is a young field of study. More grants need to be obtained that allow researchers to evaluate new ways of producing more efficient energy. Education is also a key to finding answers to these questions. We need to inspire our children to finally understand how nature works. The Einsteins of the next generation should be found and pushed toward higher goals.

The developing world is much closer to nature. In the field of environmental education, the developed and developing world are both on par – America and Europe have no advantage over

7. The ZERI website is available online at: <http://www.zeri.org>

One last example of an innovative environmental solution that addresses not only ground pollution, but also greenhouse gas emissions, is the conversion of old cement plants to processing (not burning) centers for solid municipal waste. Using biological processes, brownfields properties in Sweden<sup>9</sup> have been converted into profitable companies that can be floated on the New York Stock Exchange.

Using financial techniques, decommissioned resources, and an urgent need to tackle this problem, this system has been applied successfully in Japan. Currently, Hikada city's solid municipal waste program has been implemented at an old cement factory. This new energy producer and waste management property is displacing a need for 20 tons of coal a day by using energy produced from municipal waste. This process is reducing pollution, creating jobs and making a profit in the

## Summary of Remarks by Mr. Michael Redemer, Texaco Technology Ventures<sup>10</sup>

*Mr. Michael D. Redemer is the Director of New Business Technology at Texaco Technology Ventures. In his current assignment, Mr. Redemer is responsible for oversight of Texaco start-up technology venture businesses, and identifying & assessing technology start-up companies as potential Texaco investment opportunities.*

### Texaco's Decarbonization Strategy

Texaco is moving aggressively on its environmental technology ventures. There are many things that legislators can do to help promote these new technologies. The world is moving toward a hydrogen energy economy, and those who don't pursue these technologies will suffer financially in the future.

Texaco, as well as other organizations, has found through its research programs that decarbonization has been a steady trend throughout the history of human energy consumption. In 1935, we crossed the coal threshold of carbon emissions. Between 2020 and 2050 we expect to cross another threshold into non-carbon based hydrogen. The cross-currents at work today, market forces, the green movement and technical innovation are reshaping the energy world.

This is happening in the context of an increasingly energy-hungry world. In less than 25 years, energy consumption will have increased by 50%. By 2050, the United Nations projects

financial markets. In Japan, for the first time, a US\$5 per ton subsidy of municipal waste is contributed to the operating company because it is saving carbon dioxide emissions. That is what has made the financing tip dramatically in favor of the initiative.

The environment should be viewed with a military strategy. You never have confirmation that your enemy will attack you, but in the case that he might, you must be prepared. We will never today have confirmation that climate change is occurring. However, if one day the world's scientists reach the conclusion that it has happened, you must have a response prepared. Research and study must be done with a *what if* mindset. Militaries must be involved due to their strategic planning and their ability to plan while taking into consideration what could happen.

that the world's population will double and that the world's energy demands will quadruple. Industry must find a way to meet these soaring energy demands in the developing countries without jeopardizing the living standards of others.

Nearly all experts believe that oil, and especially natural gas, will remain plentiful for decades to come. Considering the investments that oil companies have made in fuel infrastructure and the sheer number of combustion engines around the world, oil as a fuel is going to be with us for some time. However, no car company will be able to thrive in the 21<sup>st</sup> century solely on production of internal combustion engines.

***The world is moving toward a hydrogen energy economy, and those who don't pursue these technologies will suffer financially in the future.***

The new technologies are not necessarily technologies that will displace the old. Television did not displace radio; electronic journalism did not displace newspapers; the internet has not and will not displace books. Each of those new technologies has simply given a new role to the older technologies. The development & deployment of technology tends not to be displacive, it tends to be cumulative.

Energy is the largest market in the world. Green movements and technological innovation are shaping the industry and are propelling energy markets toward hydrogen energy. Market forces and the green movement are re-shaping the energy world.

The market forces at work in the world are clearly evident.

8. For the Energy Information Administration's Country Analysis Brief of Colombian energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/colombia.html>

9. For the Energy Information Administration's Data, Analyses and Reports on Sweden, please visit: <http://www.eia.doe.gov/emeu/international/sweden.html>

10. A transcript of this presentation was provided by Mr. Michael Redemer; it is available in Appendix B3.

Nations lacking competitively priced energy will suffer. The liberalization of energy policy around the world has allowed for cross-fertilization and cross-border trading. Such activity and competition has overall resulted in the consumer benefiting from lower prices for energy. However, deregulation can create some volatility in the market. This has caused some to promote a role of government in regulating energy markets through price controls, or other mechanisms.

### New Technologies

Texaco is committed to leading innovation in energy technologies. Texaco is the leader in the field of coal gasification, additionally, the company has entered into joint ventures in fuel cells, hydrogen storage, and development of advanced battery technologies. Fuel processing technologies have also become a priority for Texaco.

The company has also been pursuing wind and solar power ventures. A founding member of the California Fuel Cell Partnership, Texaco is assisting with the creation of an infrastructure to fuel and create fuel cell vehicles. Currently, several auto manufacturers are spending hundreds of millions of dollars on fuel cell research and technologies.

Fuel cells are already being used for stationary applications and transportation technologies will reach commercial markets in the years to come. Conventional cars will be more efficient by the year 2020. Today's car emits 5% of the 1970 models. Cars are improving due to research on the internal com-

bustion engine. Currently, there are hundreds of thousands of engineers worldwide that are working on the internal combustion engine. Comparatively, there are only about 5000 engineers working on the fuel cell engine.

In the years to come, more and more scientists will be brought into the research and development of these technologies. Again, market forces and the green movement are shaping the future of the world.

Population growth and increasing energy demand is pushing corporations such as Texaco forward. In pursuing these new and innovative technologies, companies such as Texaco are moving toward a more efficient, more affordable, and more plentiful energy for all people, everywhere.

The role of government in promoting these technologies is to support strategic research at universities; industry and government can work together to promote innovation. Additionally, the government can play a significant role in offering tax credits for investment in research for such innovations as clean coal technologies. Feed in credits, such as exist in the EU for solar and wind power, are also effective in jump starting innovative technologies.

Establishing a market for emissions reduction credits is also an effective tool of the government for promotion of clean technologies. Lastly, protection of intellectual property helps to protect and promote those investing in and making technical innovations.

## Summary of Remarks by Mr. Matt Cheney, Nuon Energy<sup>11</sup>

*Mr. Matt Cheney is Chief Operating Officer and Director of North American Business Development of Nuon Ventures USA LLC, a wholly-owned subsidiary of Nuon NV, the largest electric, gas, and water utility in the Netherlands<sup>12</sup>. He has more than twenty years of engineering, energy and environment experience with two Federal Agencies and the private sector.*

### The Role of Renewable Energy Companies

Nuon is a Dutch multi-utility company that deals with electric, water and gas and has committed itself to bettering and investing itself in the environment and renewable energy. A large portion of the Nuon investment strategy is renewable energy production. This investment strategy is at

the same level for Nuon as many of the more traditional investments made by utility companies.

When looking at utilities and the roles that they play in bettering the environment, it comes down to having a vision and seeing how renewable energy production fits into the business operation on a day-to-day basis. This vision addresses the hope that Nuon can be one of the top five renewable energy producers in the world.

Nuon's outlook is global.

The company has decided upon several countries for heavy investment in its utility strategy, including renewables, and 22 other emerging markets in the world for the production of re-

***If a tax credit were applied further downstream in the energy consumption, for instance to the consumer of that energy, that would leave a foreign corporation like Nuon free to operate in a more market friendly strategy, charging higher costs to the consumer which would be offset by the government tax credit.***

11. Slides from this presentation were provided by Mr. Matt Cheney; they are available in Appendix B4.

12. For the Energy Information Administration's Data, Analyses and Reports on The Netherlands, please visit: <http://www.eia.doe.gov/emeu/international/nethrind.html>

newable energy.

Nuon's ability to impact renewable energy and significantly increase renewable energy generation around the world is influenced by the legislation in the countries where it decides to invest or not to invest. Issues exist related to arbitration, titling of land as well as a lack of an equal playing field in receiving and offering assistance. Protectionism and import barriers are also a hurdle to green energy companies.

Additionally, tax credits in the United States are only beneficial to those companies who are able to profit in the US market. If that tax credit were applied further downstream in the energy consumption, for instance to the consumer of that energy, that would leave a foreign corporation like Nuon free to operate in a more market friendly strategy, charging higher costs to the consumer which would be offset by the government tax credit.

More general legislation issues exist such as land titling. If you cannot identify who a landowner is, it is practically impossible to pursue a renewable energy project in that given area, despite perhaps having found an area of very high energy potential. Arbitration of international business disputes is also a very important domestic policy for a government to allow.

One example is that Turkish<sup>13</sup> law does not allow for international arbitration of business disputes, therefore, Nuon is unable to secure funding for renewable projects in that area.

Germany is the best case example for green legislation and policy. There is extensive development in Germany of renewable energy sources. If the German model is replicated in other countries, companies similar to Nuon will invest and those countries will begin to see significant renewable energy development.

Legislators must open markets, make the governing structures transparent to those companies being governed, and allow for interconnection to the grid and secured sales of energy produced. In both wind and solar technologies these are important legislative roles.

Other points to consider are the lead times required before a renewable energy site can be built. The shorter the lead time, the better the investment option for the corporation. Long-term commitment to a stable legislative environment which promotes renewable energy production, as well as a reduction of import barriers, helps to provide for optimum renewable energy production.

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13. For the Energy Information Administration's Country Analysis Brief of Turkish energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/turkey.html>

## The Role of Legislators in Promoting Clean Technology, Energy Efficiency, Conservation and Reducing Emissions at Government Facilities

Panel Session Chaired by The Honorable John Olver, GLOBE USA

### Panel Speakers:

Mr. John Cahill, Office of the Governor of New York

Mr. William Parks, U.S. Department of Energy

### Summary of Remarks by The Honorable John Olver, GLOBE USA

*Mr. John Olver was elected to Congress through a special election in June 1991. Previously, Mr. Olver was a Chemistry professor at the University of Massachusetts, Amherst and served in the Massachusetts House of Representatives and Senate. Mr. Olver joined GLOBE in 2001.*

#### Climate Change in the United States

Climate change caused by global warming is one of the most significant issues of the 21<sup>st</sup> century. This conclusion is based on very sound science. During the lifetime of our species, approximately half a million years or there about (which includes the lifetime of both ancient and modern man), the total carbon dioxide concentration in the atmosphere never varied outside the range of 190 parts per million to 280 parts per million of carbon dioxide. This natural fluctuation includes both ice ages and natural warming trends of the earth's atmosphere. Within the last 100 years, the earth has reached 370 parts per million of carbon dioxide.

We are burning the earth's sequestered carbon at a very high rate. If we were to continue to industrialize and burn fossil fuels at our current rate, those fossil fuels would be expended as available resources within 500 years. Within the span of this 500 years we could burn this sequestered carbon that it took hundreds of millions of years to build up.

Currently, the amount of carbon dioxide being put into the atmosphere is rising by approximately one percentage point a year. If one nation alone, China, were to industrialize and try to achieve a standard of living similar to that of the United States, by using the amount of energy the United States uses or wastes, we would double the amount of carbon dioxide being put into the atmosphere by the action of that single country. This scenario could also prove true when looking at the future

of energy consumption in India, the remainder of Asia or other developing areas of the world.

We in the United States are using more energy per unit of production than almost any other country. China's energy use per unit of production is actually decreasing, therefore, the above mentioned worst case scenario does not seem to be a significant threat, but remains a possibility. It is imperative to understand what is contributing to global warming.

The recent energy policy statement released by the Bush administration touts market forces and business solutions to address the challenge of climate change. This report also urges that energy policy and climate change be separated as issues. It is imperative that these issues remained linked, it is inherently impossible to separate these issues because at the heart of the climate change debate is the question of how we produce and use energy.

The major contributor to climate change is the burning of fossil fuels. We cannot begin to deal with the problem of global warming until we realize and accept that fact. One of the greatest ironies of this connection is that we burn oil to produce, at very low

efficiency, electricity and power for transportation sources. Our refusal to require greater energy efficiency in the production of those energies is inexcusable. Our refusal to invest heavily in research and development to move us toward the future hydrogen economy is a tragedy.

In the area of energy efficiency, 50% of energy used in government buildings could be saved. This topic includes state and federal, military and civilian programs and facilities. Taken together, at least 10% of all the energy used in this country is in some way involved in the actions of government and the actions of the military. This includes the schools, prisons, of

***The major contributor to climate change is the burning of fossil fuels. We cannot begin to deal with the problem of global warming until we realize and accept that fact.***

office buildings – each government action that is state or federal in nature.

A major portion of our energy usage can come under the view of political people. Legislators are in the business of regulating and setting the limits and laws for these operations. This is not a new undertaking for legislators, therefore it should be a relatively simple process which can be accomplished through

## Summary of Remarks by Mr. John Cahill, Office of the Governor of New York

*Mr. John P. Cahill was appointed Senior Policy Advisor to New York Governor George E. Pataki on February 5, 2001. In this capacity Mr. Cahill serves as principal policy advisor to the Governor on a full range of critical issues.*

*Prior to assuming his current position, Mr. Cahill served as Commissioner of the New York Department of Environmental Conservation (DEC), a post to which he was appointed in June 1997.*

### New York State Energy Policy<sup>1</sup>

New York is a very diverse state; agriculture is its number one resource. It is blessed with a great deal of natural resources.

However, New York faces a number of environmental challenges including climate change, but also environmental problems caused by acid rain due to the burning of fossil fuels in Ohio and Michigan.

These fossil fuel emissions have a devastating effect on many parts of New York including the Adirondaks and Long Island Sound. Forty percent of the lakes in the Adirondaks as well as Long Island Sound will be destroyed in the next 25 years if dramatic action is not taken to address the burning of fossil fuels in the Midwest.

New York is facing many energy issues over the next several years. The economy in New York state has grown at twice the rate that was expected. Technology growth has placed a high energy demand on the economy of the state. In order to meet these needs there have been efforts to increase power production.

public activities. The US should be a leader in addressing climate change. The administration should utilize a variety of assessment tools and incentives when developing our domestic policy. Particularly within the federal government, we should lead by example, and begin by setting immediate and strong goals to increase energy efficiency and encourage the use of non-fossil fuel energy sources within government facilities.

### Executive Orders

In June, Governor Pataki created an executive order<sup>2</sup> addressing renewable energy and energy efficiency. Clear energy efficiency goals were set for the state of New York. State agencies and authorities are expected to reduce energy consumption by 35% by the year 2010.

**Clear energy efficiency goals were set for the state of New York. State agencies and authorities are expected to reduce energy consumption by 35% by the year 2010.**

Guidelines have been issued to all state agencies to tell them how they are expected to meet such goals. New buildings are expected to have a 20% improved efficiency rate over the existing state energy code; substantial renovation should exceed the state energy code by 10%. State agencies will be required to ad-

here to new procurement standards and to purchase 10% of renewable power by 2005 and 20% of renewable power by 2010. Renewable energies include biomass, wind, methane waste, and fuel cell technologies (hydropower is not included in the New York state definition of renewable energy).

The executive order also reaffirms New York's dedication to the promotion of clean vehicles. Under the order, 50% the state's light duty vehicle fleet will consist of alternative fuel vehicles including hybrid electric vehicles and by 2010 all light duty vehicles with the exception of emergency and specialty vehicles will be alternative fuel vehicles.

Currently, New York has the largest wind farm east of the Mississippi, and has significant potential for further wind energy production. The State is investing US\$300 million dollars a year on energy efficiency and renewables in order to further promote clean technologies, energy efficiency and renewable energy.

1. For the Energy Information Administration's energy data on New York state please visit: [http://www.eia.doe.gov/emeu/states/main\\_ny.html](http://www.eia.doe.gov/emeu/states/main_ny.html)

2. This Executive Order, No. 111, is available in Appendix C1.

## Summary of Remarks by Mr. William Parks, US Department of Energy<sup>3</sup>

*Mr. William Parks is the Associate Deputy Assistant Secretary (ADAS) at the Department of Energy, Office of Power Technologies. This office examines technology development and deployment, market analysis and policy issues related to Renewable Energy, Distributed Energy Resources, and Power Delivery Systems. As ADAS, Mr. Parks is responsible for oversight of diverse programs including photovoltaics, wind, biomass, microturbines, storage, power reliability and related issues.*

### The Federal Energy Management Program

Through the Federal Energy Management Program (FEMP) the federal government is addressing the issue of government energy usage and efficiency. The United States' federal government is the largest single energy user in the world. About US\$8 billion dollars a year is spent on energy for the government. 1.5% of the United States electricity is consumed in nearly 500,000 government buildings, facilities, equipment and other energy intensive operations. In 2000, an executive order established a goal for the US Department of Energy of reducing its energy use by 45% by 2010 compared to 1995 and to reduce utility costs by 10% or US\$30 million dollars.

Recently, there have been a series of acts and executive orders. One of these acts is the National Energy Policy<sup>4</sup>. The National Energy Policy addresses issues pertaining to the implementation of effective life cycle costs. It is a way to move forward with simple pay back costs as well as ways to introduce new technologies into the federal system.

The National Energy Policy makes 105 policy recommendations to:

- Modernize conservation;
- Modernize our energy infrastructure;
- Increase our energy supplies, including renewables;
- Accelerate the protection and improvement; and,
- Increase our energy security.

### Activities within the Department of Energy

Through outreach programs and by meeting and exceeding minimum energy reduction goals, the Department of Energy is looking to be a test case example for other government agencies.

Other activities within the Department of Energy include:

— Implementating new energy products at different DOE sites. For example, the Energy Department is working with the General Services Administration to provide green energy to different government sites;

— Obtaining designs for a solar

wall at the Department of Energy building in downtown Washington, DC; and

— Searching for green power purchases for energy consumption by the Department of Energy.

Additionally, the Department of Energy has the responsibility to carry out the executive orders dealing with energy issues<sup>5</sup>. This includes a wide variety of objectives ranging from using renewable energy power to providing project coordination, technical assistance, and project financing.

The Department of Energy achieves these goals through their numerous programs, publications, web sites and inter-agency coordination. The Department is also working on many other renewable energy programs in the fields of solar, wind and hydrogen power. Jointly with the Environmental Protection Agency, the Department of Energy has helped to establish the Energy Star program, which rates household appliances on their energy efficiency.

There are several pending Senate bills dealing with renewable energy on both hydrogen and wind power topics. There is also currently debate on a working group that provides outreach and management assistance on nationwide activities related to combined heat and power (CHP)<sup>6</sup>.

**The United States' federal government is the largest single energy user in the world. About US\$8 billion dollars a year is spent on energy for the government.**

3. Slides from this presentation were provided by the Department of Energy; they are available in Appendix C2.

4. The National Energy Policy is available in Appendix C3.

5. An index of relevant Executive Orders is available online at: <http://es.epa.gov/program/exec/exec.html>

6. The fact sheet titled "Combined Heat and Power: Combining Energy Reliability and Efficiency with Pollution Reduction" by the US Combined Heat and Power Association is available in Appendix A8.

## Iceland: Moving Toward a Renewable Energy Economy

### Luncheon Keynote Speakers

Mr. Christopher Flavin, Worldwatch Institute

Mr. Sveinn Björnsson, Embassy of Iceland

### Summary of Luncheon Remarks

*Mr. Christopher Flavin is President of the Worldwatch Institute, where he is responsible for overall management and fundraising, leads the Institute's management team, and represents the Institute before a broad range of audiences around the world. He is an ex-officio member of the Institute's Board of Directors and its Executive Committee.*

*Mr. Sveinn Björnsson served as the Deputy Chief of Mission for the Embassy of Iceland in Washington, DC. He assumed this post in 1997 after serving as the Deputy Permanent Representative to the Council of Europe in Strasbourg, France. During his diplomatic career he has served the Icelandic government in both Europe and North America.*

#### A Hydrogen Future

Iceland is moving toward a hydrogen energy economy and plans to reach that goal by 2030. As stated by Mr. Michael Redemer in the alternative energy panel, Texaco expects the world to cross the hydrogen threshold between 2020 and 2050.

At the WorldWatch Institute, Mr. Seth Dunn, has been studying the Icelandic approach as well as the decarbonization of the energy economy. His reports have been published in both the *State of the World 2001* and the *WorldWatch* magazine (November/December 2000 Volume 13, Number 6).

Iceland has established itself as a frontrunner in moving toward a renewable energy based hydrogen system. The Icelandic plan includes shifting the fossil fuel intense energy sectors, namely transportation, industry and a large fishing fleet, to hydrogen energy. Already, a majority of Iceland's total energy use is derived from renewable energy sources including geothermal and hydropower.

The shift to hydrogen will be accomplished through a partnership of government, academia and industry leaders. In 1999, the Icelandic government created the Icelandic Hydrogen and Fuel Cell Company. The major stakeholders in this enterprise

are Royal Dutch Shell, DaimlerChrysler, a Norwegian energy company - Norsk Hydro, and a majority of shares are held by a group of Icelandic interests. This consortium's mission is to research and develop the means by which Iceland will move forward in implementing hydrogen and fuel cell technologies.

Not only does Iceland wish to convert its own energy sources to hydrogen, it also plans to become a major energy player in the new, world hydrogen economy. Iceland plans to complete its own system of hydrogen energy production while at the same time producing hydrogen to sell worldwide. This plan would make Iceland an energy leader and the *Kuwait of the North* in future years. According to Mr. Sveinn Björnsson, Iceland would then turn to major energy consumers like the United States and Europe as large export markets for their fuel.

One challenge which still lays ahead is the question of how the hydrogen will be dispersed and if it will be used in its direct form. Hydrogen energy can be harvested from many sources, including traditional fossil fuels. However, the most sustainable and environmentally friendly way to harvest hydrogen is through renewable energy such as biomass, solar, wind and hydropower. In order to produce hydrogen, compounds must be broken apart. For instance, water can be broken apart creating two hydrogen atoms and one oxygen atom. Natural gas, and other fossil fuels, also contain hydrogen and can be *reformed* into hydrogen fuel.

Methanol is the fuel currently being examined most closely for its potential as a source because of its economic feasibility. However, methanol use requires an energy infrastructure, which may become outdated if hydrogen in its direct form becomes economically feasible.

While these are not easy questions to answer, nor are they all of the questions remaining to be dealt with on the hydrogen journey, one certainty is Iceland's commitment to renewable energy and a profitable and export-based hydrogen energy economy.

## Energy Efficiency and Conservation Policies: Another Step to Emissions Reductions

Chaired by The Honorable James C. Greenwood, GLOBE USA

### Panel Speakers:

Mr. William Parks, U.S. Department of Energy

Dr. Miranda Schreurs, University of Maryland

Ms. Tania Mijares, Mexican Environmental Law Center

### Summary of Remarks by Mr. William Parks, US Department of Energy<sup>1</sup>

*Mr. William Parks is the Associate Deputy Assistant Secretary (ADAS) at the Department of Energy, Office of Power Technologies. This office examines technology development and deployment, market analysis and policy issues related to Renewable Energy, Distributed Energy Resources, and Power Delivery Systems. As ADAS, Mr. Parks is responsible for oversight of diverse programs including photovoltaics, wind, biomass, microturbines, storage, power reliability and related issues.*

#### Energy Efficiency in the United States

The future of energy in the United States faces several hurdles. In the coming years we will be facing shortages in supplies. The infrastructure of the country, built up in the 1930s, '40s and '50s, is also in need of improvement.

The United States uses about 97 quadrillion BTUs of energy on an annual basis. The breakdown of this energy is into residential and commercial buildings, the industrial sector, the transportation sector and the utility or electricity sector. In the US there is also a growing oil gap. We continue to use more and more foreign oil every year while domestic oil production is decreasing. There is much work being done to explore what renewable energy, natural gas and energy efficiency can do to offset this increasing energy consumption. Research and development within the hydrogen program is also significant. This program at the Department of Energy is funded through the Hydrogen Reauthorization Act<sup>2</sup> which is before Congress this year.

The United States also faces power constraints. There is a pos-

sibility that two thirds of the country will be over 90% capacity of peak power usage. Areas such as California, the Midwest and New England are all facing the possibility of energy shortages over the summer and winter months in the coming year. Without infrastructure investments there will be continued problems over the next decade.

Another of the energy issues facing the United States is the emission of fossil fuels. The average energy conversion of the US hasn't changed since a high in 1959. That doesn't mean that there haven't been technology improvements, there have been, but on average the electricity generation capacity hasn't improved since 1960. The US wastes enough energy in its conversion process to power Japan in its entirety on a yearly basis. This energy waste makes a good case for combined heat and power (CHP) systems and increased efficiency of the power used.

The US energy infrastructure is also aging. Dialogue must be opened to discuss how to finance the improvement of these aging systems. It is not a question of

whether it has to be done, it is a question of how it will be done in the years to come.

Industry faces a changing and dynamic world. The national energy plan offers opportunities for industry, including energy efficiency. Hydropower is an issue that will be surfacing in the near future. There is much controversy as to whether hydropower sources of energy are sustainable to the wildlife they effect, namely the fish species in the area. There will be dialogue on whether more dams will be built in the US to address the increasing demand.

**The US wastes enough energy  
in its conversion process to  
power Japan in its entirety  
on a yearly basis.**

1. Slides from this presentation were provided by the Department of Energy; they are available in Appendix D1.

2. For the full text of the House (H.R. 2174) and Senate (S. 1053) versions of the Hydrogen Reauthorization bills, please see Appendix D2.

The digital age is upon us and has largely driven the US economy for the last 15 years. It is necessary to understand new ways in which to utilize this system to increase energy efficiency in production. It is also necessary to remember the importance of a reliable power source for the high tech industry.

Much work is being done in the building sector. Buildings are being constructed today with power costs of less than US\$1 per day. The next step in increasing building efficiency is to find ways to economically and effectively build zero energy buildings.

The efficiency of consumer products is also being evaluated. Through programs such as the Energy Star program, household appliances are rated and evaluated for their energy effi-

ciency. Lowering the power usage of standby power systems is also an important initiative.

In the industrial sector, the Department of Energy has been working with the steel and chemical industries. The aluminum industry has said that they want to constantly recycle all aluminum, and operate without using any bauxite. In the transportation sector, new technologies such as hybrid and fuel cell vehicles are being developed to bring higher efficiency and cleaner energy to US vehicles.

The US and the UK<sup>3</sup> both have a combined heat and power (CHP) challenge. A goal has been set to double the number of CHP systems in the US by 2010. The current administration is very supportive of this program and the Department of Energy is moving forward toward meeting that goal.

## Summary of Remarks by Dr. Miranda Schreurs, University of Maryland<sup>4</sup>

*Dr. Miranda Schreurs is an Assistant Professor in the Department of Government at the University of Maryland at College Park. Her current research interests focus on comparative environmental and energy politics in Japan, Germany, and the US and on regional environmental cooperation in East Asia.*

### Environmental Policies in Japan, Germany and the US

Advanced industrialized states will be setting a model for the rest of the world. Japan, Germany and the US are 50% of the world economy; if all EU member states were added to the equation, that would equal 70% of the world economy. The decisions made in these countries are extremely important to what goes on in other parts of the world.

These are the countries that are providing direct development assistance, including assistance in the environmental field. Japan is currently providing the most environmental aid. The US, France<sup>5</sup>, and Germany, in that order, are the other top five countries providing aid to developing countries. The percentage of this aid that is for environmental and energy programs is significantly higher in Japan, where it is at 25% of the total versus in the United States where environmental money is only 10% of overseas aid.

### Environmental Firms and Equipment

In 1992, North America, mainly the United States, was the most prominent in the production of environmental equipment. Eu-

rope and Japan were also players in this field. The United States purchased 40% of the environmental equipment that was being produced; Germany purchased 9% and Japan 10%. There will be a shift away from this pattern in the future. North America, Europe, and Japan will compete for gains in the market but a shift in the market will move toward developing countries which will become much more significant producers and consumers of environmental products.

### Energy Conservation and Efficiency

***The US leads the world in the adoption of standards which mandate that companies perform at particular quality levels. However, when compared to environmental certification, the US is trailing behind Japan, the leader in environmental certification.***

Across the board there have been very large gains in efficiency which are illustrated by the reduction in emissions of sulfur dioxide. This gas is emitted from energy producers and provides a type of baseline with which to measure efficiency and emissions rates. Much less improvement has occurred in nitrogen oxide emissions. This change has

been charted over two decade's time. Industrial energy consumption per capita in Japan, Germany and US is actually decreasing. However, energy consumption in the transportation sector is increasing by much larger amounts. Other usage (offices, households, etc.) is also increasing.

Energy conservation should be designed as a transition program until new technologies have a chance to reach a market diffusion stage. In the US, there are large differences in the amount of carbon dioxide emissions per capita relative to the next two largest economies, Japan and Germany. The differ-

3. For the Energy Information Administration's Country Analysis Brief of British energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/uk.html>

4. Slides from this presentation were provided by Dr. Miranda Schreurs; they are available in Appendix D3.

5. For the Energy Information Administration's Country Analysis Brief of French energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/france.html>

ences can be attributed to energy conservation and the cost of energy.

The US has one of the lowest levels of environmentally related taxes among the advanced industrialized states. The percent of gross domestic product in the US generated from environmental taxes is 1% compared to 1.7% in Japan, 2.5% in Germany, and 4.5% in Denmark. The percent of total tax revenue being generated from environmental taxes in the US is 3.7%. This is about half of what is generated in the European countries.

Energy efficiency cost questions are an important issue for Americans. There is a reluctance in the US to introduce new environmental taxes. The US will need to diffuse technologies and mechanisms to introduce more energy conservation strategies.

The US leads the world in the adoption of standards which mandate that companies perform at particular quality levels. However, when compared to environmental certification, the US is trailing behind Japan, the leader in environmental certification. Europe and Japan combined, account for over half of the standards set for environmental certification today.

## Summary of Remarks by Ms. Tania Mijares, Mexican Environmental Law Center<sup>6</sup>

*Ms. Tania Mijares has been working at the Mexican Environmental Law Center (CEMDA) since January 1994. CEMDA is an independent, non-profit organization that seeks to contribute to the national efforts undertaken to improve the enforcement and compliance of environmental laws. Since 1998, Ms. Mijares, the Director of the Air and Energy Program, has been coordinating the project: "Clean and Efficient Use of Energy in Mexico City." This project seeks to promote the implementation and use of fuel cells in public and private transportation in Mexico City.*

### **Environmental Policy in Mexico<sup>7</sup>**

The Mexican Environmental Law Center (CEMDA) is a non-profit, non-governmental organization that is located in Mexico City, Mexico. It was founded in 1993 by a group of Mexican attorneys who were concerned by the pollution problems in Mexico. By creating this organization, they hoped to develop an effective application of environmental law in order to protect Mexican natural resources. A priority of the center is to educate society about environmental protection.

Part of the CEMDA program focuses on air and energy. The objective of this program is to promote the use and implementation of fuel cells in public transportation. Fuel cells

Mechanisms that promote environmental certification include such initiatives as the creation of Local Agenda 21 programs, which are a recent development in the field of energy conservation. Local Agenda 21 is a program that developed as a result of the 1992 UNCED process. It is an effort to get local governments involved in producing sustainable development programs. Nationally and internationally, these programs contain important mechanisms for promoting local energy efficiency improvements. Local Agenda 21 programs are prominent in Europe where over 1000 exist. In Japan fewer of these programs exist, the number of Local Agenda 21 programs in Japan is currently at about 50. Significantly below these levels of local adoption of Agenda 21 programs, the US has only 15 programs currently underway.

There are three ways in which energy efficiency programs can be implemented. One is through voluntary initiatives by industry, second are voluntary programs by citizens and lastly is the role of government and legislators in promoting energy efficiency. An organization such as GLOBE has the ability to transmit and diffuse ideas across countries about what is being used effectively and what successful programs exist in order to address such environmental issues.

were determined to be the technology of choice after much evaluation of the latest technologies available that would bring the government and society a positive solution for the air pollution problem. The results of this evaluation found that fuel cells are the most promising alternative as a substitute for internal combustion engines; fuel cells offer significantly reduced emissions and efficient use of regenerative fuels.

In Latin America, one of the biggest problems in most large cities is the high level of air pollution. This pollution impacts the population's health – specifically children and the elderly. This pollution is generated mainly by the emissions of buses and trucks as well as other transportation. Many people also buy older cars, which are not equipped with the latest technologies, therefore their emissions are greater. The use of gasoline is responsible for almost 60% of these emissions. For example, in Mexico City and Sao Paulo, a number of strong measures have been implemented to reduce emissions by vehicles through public transportation and also to move industries away from the center of the city.

Stronger regulations have also been applied to industry and transportation. Some of these measures have failed, but others have succeeded. In Mexico City, for example, vehicle owners are permitted to use their automobiles for six days per week,

6. A transcript of this presentation was provided by Ms. Tania Mijares; it is available in Appendix D4.

7. For the Energy Information Administration's Country Analysis Brief of Mexican energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/mexico.html>

during one day of each week the vehicle must remain unused.

It is important to note that Latin America has a great opportunity to change its pollution problem. A new regional plan to fight air pollution must be implemented through new strategies and environmental regulations. Given the complexity of the problems of air pollution as a transboundary problem it is impossible for one isolated government to find a solution without regional cooperation. Today, there are no regional agreements in Latin America in existence which address the problem of air pollution.

Air pollution can be prevented through the use of alternative technologies. Some renewable technologies are already cost competitive with the conventional energy supplies. Other technologies, currently higher in price, have great potential in the long term. One of the most important of these technologies is fuel cell technology, both for transport and stationary use.

Legislation can play an important role in promoting these technologies. Generally, a new technology will emerge and there is no legislation in existence governing it. It is important that as soon as this technology becomes marketable a law be instated which allows for its usage. These include legislation based on market forces that will promote the use of new technologies. Taking fuel cells as an example, the use of this technology will not only provide for a cleaner environment, but it will also create new markets for steel, electronics, electrical industries and other equipment suppliers.

Currently the United Nations Development Program (UNDP) and the Global Environment Facility (GEF) are funding a number of fuel cell projects in developing countries. They are studying the use of fuel cells as an alternative in the transport sectors of Brazil<sup>8</sup>, China<sup>9</sup>, Egypt<sup>10</sup>, India and Mexico. These countries are home to five of the most polluted mega-cities in the world and 70% of that pollution comes from the transportation sector. This project could point to comprehensive improvements to these cities' transportation sectors as well as capacity building, technology transfer, creation of new jobs, business opportunities, and provide a major push to accelerate the development in these areas.

The governments of these five countries must also work to allow this project to reach its goals. They must legislate to allow for the use of fuel cells. This is a ten-year project spanning from 2001 through 2010. The goal is that these countries change all of their buses from combustion engines to fuel cells. They must overcome technological hurdles, develop an infrastructure that promotes the use of the new technologies, establish incentives for fuel cell use and educate the general public on the issue.

After these challenges are met, it is hoped that all public vehicles will be powered by fuel cells. To improve the welfare in a developing country does not necessarily imply an increase in pollution. Using the most efficient technology and consuming the minimum levels of materials needed will bring economic development and a higher standard of living without large increases in carbon emissions.

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8. For the Energy Information Administration's Country Analysis Brief of Brazilian energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/brazil.html>  
9. For the Energy Information Administration's Country Analysis Brief of Chinese energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/china.html>  
10. For the Energy Information Administration's Country Analysis Brief of Egyptian energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/egypt.html>

## Clean Energy and Export Credit Agencies

Chaired by The Honorable Anders Wijkman, GLOBE EU

### Panel Speakers:

Mr. William Singleton, GLOBE USA

The Honorable Tony Colman, GLOBE UK

Mr. James Mahoney, Export-Import Bank of the United States

## Summary of Remarks by The Honorable Anders Wijkman, GLOBE EU

*Mr. Anders Wijkman has been a member of the European Parliament since 1999. He is the President of GLOBE EU. He served as a member of the Swedish parliament from 1970 through 1978. Mr. Wijkman has been a member of several government task forces on issues related to the environment, sustainable development, energy and foreign aid.*

### Overview

If developing countries are going to avoid investing more and more in carbon intensive infrastructures, there is a need for technology to leap frog and promote environmentally sound technologies. The Rio Conference concluded that in order to reduce poverty, developing countries must grow and modernize their societies through industrialization. However, this should not happen with conventional technologies.

During the preparatory process for the Rio conference, it was concluded that an estimated US\$725 million dollars a year over

a 10 to 15 year period would have to be invested in order to implement Agenda 21 in developing countries. OECD countries were expected to contribute an estimated 1/4 to 1/3 of this amount, but delegates from the OECD were not in favor of this. In response, the Global Environment Facility<sup>1</sup> (GEF) was set up and has dispersed around US\$4 billion dollars over the last 10 years in support of environmental programs, including green technologies. In the field of energy, it dispersed US\$150-200 million dollars a year. The GEF is helping developing countries invest in biomass, solar and wind technologies.

By comparison, however, energy investments in the South amount to US\$150 billion dollars per year in mostly conventional carbon intensive technologies, often with the help of export credit agencies of the OECD. We have to rethink this area and develop a set of instruments to support “technology leap-frogging” in developing countries, notably in the areas of energy and transport.

## Summary of Remarks by Mr. William Singleton, GLOBE USA<sup>2</sup>

*Mr. William Singleton is the Executive Director of GLOBE USA. He has been a part of the Washington environmental community for the last ten years, serving both in government and civil society.*

### Export Credit Agencies

As we talk about energy development in developing countries, the difference in investment between conventional, or more carbon intensive technologies, and renewable technologies is staggering. Liberal estimates of renewable financing, not including hydroelectric, versus carbon intensive lending show that for each dollar spent on renewable energy, at least ten dollars go to fossil intensive projects. The developing world is

clearly on a trajectory that will lead it to very similar consumption patterns as the energy production system that the developed world conceived of and constructed about fifty years ago.

In June, GLOBE USA worked with World Resources Institute to organize a meeting for legislators and experts to discuss the impact that export credit agencies have on the global climate. This meeting was generously sponsored by the Rockefeller Brothers Fund and held at their Pocantico Conference Center outside of New York City. Much of the discussion is based on a paper, *Climate Notes*, that was researched and written by Ms. Crescencia Maurer and Ms. Ruchi Bhandari<sup>3</sup>. The facts cited today will be based on their work.

1. The website for the Global Environment Facility (GEF) is available online at: <http://www.gefweb.org/>  
2. Slides from this presentation were provided by Mr. William Singleton; they are available in Appendix E1.  
3. The *Climate Notes* publication from WRI is available in Appendix E2.

Export credit agencies, or ECAs, account for a huge proportion of long-term financing that goes to the developing world. During the 1990s, ECA investments were double the total amount of all official development assistance. In the late 1990s, bilateral lending, which is mostly made up of ECA financing, accounted for 31% of all long-term financing while multilateral lending institutions such as the World Bank and the regional development banks accounted for only 17% of long-term financing. It is also important to remember that ECAs leverage huge amounts of additional funding from other sources. Often, export credits and insurance guarantees are the component of the financing of a major project that induces private investment. This is one reason why ECAs can be such an important policy tool for promoting certain governmental values.

The WRI study of ECA financing during the 1990s drew some interesting conclusions. The study's focus was energy intensive industries. This includes, but is not exclusive to, energy exploration and production. It also includes transportation, infrastructure, energy intensive manufacturing such as steel, chemical and paper pulp production. ECA financing and guarantees accounted for 20% of all financing for energy intensive sectors in developing countries from 1994 through 1999. This amount totaled US\$44.4 billion. The leveraging effect of ECA financing meant that ECAs made more than US\$103 billion in projects possible. This accounts for just under half of all financing going to energy intensive sectors in the developing world.

To break it down one more level to demonstrate the importance of ECA financing, this US\$103 billion represents a strong concentration in fossil fuel powered generation and oil and gas exploration. Oil and gas development account for US\$40.5 billion. Fossil-fueled power generation accounts for US\$33.3 billion. Together they account for almost two-thirds of energy intensive sectors.

## Summary of Remarks by The Honorable Tony Colman, GLOBE UK

*Mr. Tony Colman was elected as Member of Parliament on May 1, 1997 and from 1991 until June 1997 he was Leader of London Borough of Merton. From 1964 to 1969 he worked for Unilever (United Africa Company) and The Burton Group from 1969 – 1990, where he was a Board Director.*

### OECD Investment in Developing Countries

The OECD Convention has been in negotiation for the last four years. It is formally called the OECD Draft Recommendations on Common Approaches to the Environment and Officially Supported Export Credits. The recommendation has been backed by the Jakarta Declaration<sup>4</sup> of May of last year. The Jakarta Declaration is a network of three hundred non-profit organizations world-wide that push to ensure that export credit

The impact of this type of lending on the global climate is staggering. Friends of the Earth and the Institute for Policy Studies did a study on Ex-Im and OPIC lending for thermal power and oil and gas projects in developing countries. The study found that the projects that were financed between 1992 and 1998 — from the United States alone — would release 29.3 billion tons of carbon dioxide over their lifetimes. This equals roughly the global carbon dioxide emissions in 1996.

These numbers help demonstrate the importance of ECAs. The central concept of the work that GLOBE USA is doing on export credit agencies is that this type of lending does not reflect the stated climate policies of any of the G-7 countries. Every country in the G-7, and most in the OECD, support the concept of the Kyoto Protocol. The recent rhetoric of the United States is that developing countries must also reduce their carbon emissions for the United States to participate. The “policy perversity” comes when these publicly funded institutions perpetuate carbon intensive manufacturing and energy sectors. Because this funding is for long-term projects, developing countries are being locked into a development path for the next forty or fifty years.

The GLOBE USA/WRI meeting in June resolved to bring attention to this paradox. Work with GLOBE Japan, GLOBE EU and GLOBE International is being done to achieve better transparency among ECAs, so that the full extent of carbon-intensive lending can be brought into the light where legislators and NGOs can conduct dialogue on the appropriateness of the lending. GLOBE USA will be working with Ex-Im to promote ways that the institution might increase the proportion of its lending for renewable energy.

Finally, a notable result of the meeting has been the work that Mr. Tony Colman has done in the United Kingdom. He has brought the matter to the attention of the Prime Minister and induced the House of Commons to debate the issue.

agencies take environmental impact into account. The recommendation is more important than overseas development assistance (ODA); it is a way that one could potentially see a clean development mechanism working. The essence of the report claims that the United States was attempting to urge the rest of the OECD to high environmental standards. There should be mandatory benchmarking of all export credit agency projects against World Bank standards. Additionally, there should be environmental impact assessments of all export credit agency guarantees. Currently, these two items are not in the draft declaration; they have been opposed by France and Germany.

The signing of the Draft Recommendation was to have been on July 7, 2001, however that has been postponed in the hopes

4. The Jakarta Declaration is available online at: <http://www.pacificenvironment.org/jakarta.htm>

that it could be signed by the heads of the G-8 at their meeting in Genoa at the end of July. Also occurring at meetings in Genoa is the Renewable Energy Task Force. The Renewable Energy Task Force was set up in Okinawa a year ago, and many are hoping that the ECA change happens together with the decisions on renewable energy in Genoa.

The Government of the UK in January required that all ECA lending have an environmental impact assessment completed

and that this assessment include an assessment of greenhouse gases as well. The UK is trying to form a bridge between the US position and the rest of the lending countries. The US position promotes transparency and high environmental standards. Export credit agencies do not currently have common environmental standards. ECAs do not publish results and continue to export dirty technology. This is an interesting issue to take back to legislators and governments worldwide. In this area, the US position needs to be backed.

## Summary of Remarks by Mr. James Mahoney, Export-Import Bank

*Mr. James Mahoney is the head of Ex-Im Bank's Engineering and Environment Division, he has assumed an integral role in the US Government's efforts to push for the adoption of common environmental guidelines among all export credit agencies, and he continues to explore ways to develop common approaches to environmental issues through the OECD export credit group.*

### The Export-Import Bank

When referring to the support export credit agencies (ECAs) have provided for fossil fuel power plants and the carbon industry in general, it is important to address the role of the ECA. The ECA reacts to market conditions and is not a funding arm of the government that is free to choose the sectors which it supports. There are two things an ECA can do to take a proactive stance to counter the trend of fossil fuel based plants producing greenhouse gases.

First, an ECA can do whatever possible to promote programs for renewable and clean energy technologies. ECAs can market programs to less developed countries (LDCs) and market exporters. Additionally, ECAs can provide some financial incentives within the limits of the Organization for Economic Cooperation and Development (OECD) arrangements.

ECAs can provide market analysis and play an active role in reporting the amount of carbon dioxide gases that result from their actions to the government, the public and policyholders. Ex-Im has a promotion program that is based on a vigorous marketing effort that it coordinates with other agencies such as the Department of Energy and the Department of Commerce. As for incentives, Ex-Im provides local cost support to the extent possible within the OECD arrangement for any project that produces fewer than 400 grams of carbon dioxide per kilowatt energy generated. This enables plants with relatively low emissions rates to qualify for certain incentives.

Ex-Im's role in reporting emissions information allows for better evaluation of the situation. The projects it supported will produce the following amounts of carbon dioxide per each year listed:

- 1996 28 million tons
- 1997 34.9 million tons

- 1998 7.4 million tons
- 1999 10.1 million tons
- 2000 16.9 million tons

These statistics show two things. There was much support for fossil fuels that were coal-fired prior to 1998. International markets have changed; exporters are responding more to requests for gas fired combined cycle plants. ECAs, by their nature, must comply with OECD arrangements. According to the Helsinki Accord, the OECD states must provide standard terms and conditions for economically viable projects. That means no partial grants and no mixed credit supports unless the project is not commercially viable.

Some would debate that renewable energy should be given mixed credit or be subsidized with grants. This would imply, under the above-mentioned agreement, that such projects are not feasible or viable. This is where tension arises. Within the OECD, special incentives have been discussed for projects that are renewable energy based projects.

Since 1996, Ex-Im Bank has invested US\$1.8 billion dollars in coal-fired technologies, US\$1.5 billion dollars in gas-fired technologies, and US\$100 million dollars in oil-fired power plants. US\$42 million dollars was invested in renewable energy such as geo-thermal, under US\$15 million dollars was invested in solar energy costs, less than US\$15 million dollars was invested in wind, and less than US\$100 million dollars was invested in hydro-electricity.

The incentives ECAs are able to provide are marginal with respect to the market. ECAs depend upon what foreign governments are willing to bid. With some exceptions, notably China, this reflects the markets in the investment countries. Mixed credits lead to short term gains only. Countries that receive subsidized funding from industrialized countries for their projects often do not reach an economic threshold that allows the projects to be self-sustaining.

ECAs find that they succeed most often when they support the technologies which are the strongest in their home country. For example, a Danish ECA would likely have great success in lending for support of wind technology ventures. American ECAs, such as Ex-Im Bank, excel in photovoltaic or solar technology investments. The exports from United States, as sup

ported by Ex-Im Bank, will reflect the robustness of the national industry. Ex-Im Bank would like to do more in foreign countries. However, it is also important to realize what the United States is doing domestically to provide incentive activities to companies who are in the clean energy technology business.

With respect to the OECD agreement mentioned earlier, the US was unable to support the latest version of the OECD Recommendation on Common Approaches for Export Credit Agencies. The reasoning for this decision was that the Agreement, as it now stands, is still flawed in two critical areas. First, there is a lack of specificity with respect to the standards that export group members should be applying to the projects they review, especially sensitive projects. The US would like to see explicit language requiring projects supported by ECAs to be reviewed or evaluated against World Bank guidelines. Most of the multi-lateral development banks refer back to the Pollution Prevention and Abatement Handbook which is referenced by the World Bank to provide its quantitative standards on emissions and effluence in projects it supports.

The second area that the US and Ex-Im Bank found to be flawed in the agreement was the lack of an explicit requirement that ECAs release environmental information about the projects that are being proposed for support to the public before that ECA reaches a final decision as to whether or not to support the project. This is an element of transparency that is essential. Currently, there is language encouraging ECAs to release environmental information, however, the document is silent on when, and there is no requirement to do so. With this particular recommendation as proposed, many of the major ECAs in the world will not be driven to do more than they're doing right now.

Under that agreement, Canada, the UK, Germany, the US, France and others will be able to continue with the environmental policies they currently have. Certainly, Ex-Im Bank would not have to do any more than it is doing today vis-à-vis the current environmental standards already in place. The OECD should reopen negotiations on the agreement, and hopefully it will be possible to arrive at language that all parties will be able to support and that will raise the environmental standards of all ECAs.

## The Kyoto Protocol: Negotiating Positions and the Future of the Protocol

Chaired by The Honorable Tony Colman, GLOBE UK

### Panel Speakers:

The Honorable David Sandalow, World Resources Institute

The Honorable Anders Wijkman, GLOBE EU

The Honorable Wakako Hironaka, GLOBE Japan

## Summary of Remarks by The Honorable Tony Colman, GLOBE UK

*Mr. Tony Colman was elected as Member of Parliament on May 1, 1997 and from 1991 until June 1997 he was Leader of London Borough of Merton. From 1964 to 1969 he worked for Unilever (United Africa Company) and The Burton Group from 1969 – 1990, where he was a Board Director.*

### The Future of Kyoto

In a show of support for not only budgetary cuts, but also for clean and efficient energy, two weeks ago the Queen of England held a press conference in the basement of Buckingham Palace. She was exhibiting the newly installed combined heat and power (CHP) system for the property. This was an effective step forward in addressing energy issues in the UK.

Also, Agenda 21 was discussed in a previous plenary session titled, "Energy Efficiency and Conservation Policies." One of the best local Agenda 21 programs is in Hong Kong where stakeholders are working together to improve the local environment. This concept is now spreading throughout China through these successful initiatives.

The House of Commons Library did a hypothetical study of how the United States could fulfill the requirements of the Kyoto Protocol. In the Kyoto Protocol, the United States is to make an 8% cut in greenhouse gas emissions below 1990 emissions levels. To date, the US has emitted 11.8% higher levels of greenhouse gases above their 1990 levels, which brings their goal to around a 20% emissions reduction.

***It remains unclear why the Bush administration is in fact unwilling to proceed with the Kyoto negotiations.***

The figures produced revealed some easily attainable goals for the US. For instance, Mr. John Cahill, who spoke about New York state's emissions reductions on an earlier panel, mentioned that an additional 24 states in the US have taken measures similar to those of

New York. These cuts will amount to reductions at state levels of 3% below 1990 levels in those states. A similar level of cuts may also be reached through federal work, mentioned earlier, through US programs such as the Federal Energy Management Program.

Given these accomplishments, it remains unclear why the Bush administration is in fact unwilling to proceed with the Kyoto negotiations.

## Summary of Remarks by The Honorable David Sandalow, WRI

*Mr. David B. Sandalow was a Senior Fellow at the World Resources Institute in Washington, D.C. Prior to his current position, Sandalow served as Assistant Secretary of State for Oceans, Environment and Science. In this capacity, he helped manage U.S. diplomacy on a broad range of environment, science and technology issues. Areas of particular focus included climate change, biosafety, forests, toxic chemicals, marine conservation, desertification, cooperation in outer space*

*and environmental standards for export credit agencies.*

### Kyoto Policy in the United States

Climate change is a difficult issue from a political standpoint. First, there is a mismatch between scientific time scales and political time scales. When asked if there was something significant occurring with respect to greenhouse gas emissions,

1. Mr. Sandalow has since taken the position of Executive Vice President at the World Wildlife Fund in Washington, DC

scientists would answer that there absolutely was something going on. They would explain that over the next century, average global temperatures will rise by 3 to 9 degrees Fahrenheit.

During the last ice age, the average global temperature was 9 degrees colder than it is now; during the last ice age, Manhattan Island in New York City was covered by one mile of ice. Therefore, facing these changes, over the next century, we may see some significant impacts on unmanaged forests, unmanaged ecosystems, more severe and frequent storm activity, and sea level rise.

However, making these figures translate into a timetable compatible with election cycles is quite a challenge. During the next election cycle, average temperatures will rise by .012 to .96 degrees Fahrenheit. This very small change is not necessarily an easy one to take back to political constituents. Political systems are not designed to deal with problems that extend this far into the future.

Another reason that climate change is such a difficult issue is that solving climate change involves changes to the global energy infrastructure. These changes do not necessarily require rapid dislocations, but they do require changes. This problem will not be solved if in 75 years we have an energy infrastructure that is built on fossil fuel consumption. Stakeholders worldwide become concerned when faced with these changes. It is necessary to unlock technological innovation that preserves investment in the status quo and doesn't cause significant economic dislocation.

The third reason this is a challenging issue are the vast differences among countries. For example, one solution to reducing emissions may be economically feasible in one area, while completely unattainable elsewhere. There are also significant differences in political cultures. The relative acceptability of increasing taxes on energy in the US versus Europe is one example of a vast political difference. In Europe, there is somewhat of a willingness to accept higher energy taxes, however, in the US this system would not be widely accepted. Conversely, in the US there is a decade long system of emissions trading that has been very successful. This was done to address acid rain pollution. Elsewhere, there is no base of successful experience with emissions trading. These variations are a challenge, particularly when looking at industrialized versus developing countries.

The emissions in the US are significantly higher than those in the developing world – they are 10 times higher per person in the US than in China and 20 times higher per person than emissions in India. Historic emissions of carbon dioxide are also an important statistic to address. The World Resources Insti-

tute recently released a map of historic carbon dioxide emissions<sup>2</sup>. Carbon dioxide emissions remain in the atmosphere for 100 years. Looking at historic carbon dioxide emissions, the US has released approximately 30% of global carbon dioxide. Europe is at roughly the same emissions level. Africa, India and other developing parts of the world are at much lower levels of emissions.

Therefore, those in developing countries often feel like *second hand*, or *passive smokers*. They are being forced to deal with a problem that they have historically not been contributing to. However, the reality of the situation is that in the decades to come the emissions from these areas are going to increase significantly. If growth in emissions in the industrialized world could be cut to zero, which will not happen, but even if it were to occur, if the greenhouse gas emissions in the developing world were not addressed, global warming would still be increasing at a dramatic rate.

Climate change is an extremely hard problem to deal with. However, Americans have a history of overcoming extremely hard problems. Getting to the moon was very difficult. Overcoming Soviet communism was very difficult. Eradicating polio was very difficult. Solving the problem of climate change will prove to be difficult as well.

### The Kyoto Protocol

The Kyoto Protocol is on life support. In order for the Kyoto Protocol to enter into force there are some fairly complicated provisions. A certain fraction of the industrialized world must ratify the agreement. If the US does not join there are two ways in which the Protocol can enter into force. One is if Europe, Russia<sup>3</sup> and Japan agree to ratify the agreement. The other option is for everyone in the world other than the US and Japan to join, this includes countries such as Australia<sup>4</sup>, which is unlikely without US involvement, and others such as Slovenia<sup>5</sup>. If the US does not join the Protocol, its survival largely depends on Japan. The Bush administration will likely not change their stance on the Kyoto Protocol.

Another reason the Protocol is on life support is that even in countries where it has support, there are significant undercurrents of disagreement. Industrialists in Europe and Japan are somewhat relieved that the Protocol may not enter into force. However, being on life support is not the same as being dead. There is a chance that the Protocol will enter into force.

There are several scenarios that might occur in the global warming negotiations:

— The Kyoto Protocol will be ratified and will enter into force through the support of the Japanese government. If the Japa-

2. The World Resources Institute map, titled "Contributions to Global Warming" is available in Appendix F1.

3. For the Energy Information Administration's Country Analysis Brief of Russian energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/russia.html>

4. For the Energy Information Administration's Country Analysis Brief of Australian energy policy please visit: <http://www.eia.doe.gov/emeu/cabs/australi.html>

5. For the Energy Information Administration's Data, Analyses and Reports on Slovenia, please visit: <http://www.eia.doe.gov/emeu/international/slovenia.html>

nese support the Protocol this would allow for Europe to meet their stated goals and Russia would likely join. Thus, the Protocol could enter into force by September 2002 at the Rio +10 Conference in South Africa;

— The targets and timetables in the Kyoto Protocol may be modified. This has already been suggested by the Chair of the Conference, that the timetables be delayed by 2 years. However, this would be very difficult due to the nature of the negotiations;

— The Kyoto Protocol could fall apart. Until the US resumes a leadership position at the negotiating table, countries would

likely adhere to voluntary agreements given this situation; and — Global negotiations may go no where. However, regional negotiations could proceed. The European Union could move forward alone, and the Bush Administration may even move forward on a hemispheric basis as well.

The best of the bad choices is for the rest of the world to continue on with the Kyoto Protocol without the US. If the rest of the world moves forward, at the least an architecture for dealing with this problem will have been established. This architecture will be very useful for coming to grips with this problem in the years to come.

## Summary of Remarks by The Honorable Wakako Hironaka, GLOBE Japan

*Ms. Wakako Hironaka is a member of GLOBE Japan and served in 2001 as the acting President of GLOBE International. Ms. Hironaka is a founding member of GLOBE and served as president of GLOBE Japan. She is a Member of the House of Councillors (Upper House of the Japanese Diet) and is Vice President of the Democratic Party of Japan. Ms. Hironaka is now serving her third term, first elected to the House of Councillors in 1986.*

### Japanese Climate Change Policy

Wisdom must be displayed when dealing with decisions that effect not only the people of today, but the generations to come as well. The Bush administration's decision to denounce the Kyoto Protocol can only be condemned as irresponsible. This one action alone set back global environmental protection at a time when we need to be making strides ahead.

GLOBE was established as a way for the legislators of developed countries to responsibly address global warming issues. A founding concept of GLOBE is that developed countries are responsible for their own environmental destruction and for finding solutions for such problems. The US, the country which is responsible for the largest production of greenhouse gases, is by no means an innocent bystander on this issue. President Bush's actions and comments, based on economic arguments that ignore environmental responsibility, are an embarrassment to his country.

Japan holds a unique position in the climate change debate. Japan has an emotional investment in seeing that the treaty comes into effect. Likewise, in light of Japan's relationship with the US, it is in the position currently to work for change in the policies of the current American administration. To a large extent, the Japanese Diet has answered these challenges.

Immediately responding to President Bush's statement, both houses of the Japanese Parliament voted unanimously to support a resolution realizing the international agreement that the Kyoto Protocol represents. Specifically, the resolution called for exertion of all possible influence on the American administration to rejoin the Protocol.

Similarly, under the leadership of former Prime Minister Hashimoto, a body of legislators from GLOBE Japan sent a letter of protest to President Bush condemning his stance on Kyoto and calling for the administration's immediate change in its position<sup>6</sup>. However, not all Japanese politicians have acted in such a responsible way. In an April 30, 2001 summit, President Bush and the Japanese Prime Minister Koizumi met. The Prime Minister took a submissive stance, bending his position and adhering to the desires of President Bush, he effectively assisted in weakening the Protocol and risked its ratification. This attitude disappointed a majority of people in Japan as well as many people in developed countries and elsewhere around the world.

There is a short amount of time left to generate the necessary support for the Kyoto Protocol. The international spotlight is on Japan. The world is waiting to see how it will conduct itself. Despite the ambiguous conduct of the Prime Minister, Japan remains committed to the treaty. The majority of legislators in Japan are well aware of the impact of Japan's vote in the ratification process. These legislators will be doing all they can to exert the pressure necessary on the Japanese government to ensure Japan's ratification of the Protocol.

Developed countries, including the US and Japan, have a responsibility to bring the Kyoto Protocol into force. It is in this role that Japan should take the initiative. It is time for Japan to take the lead in the international arena to show that it can match its previous economic position with a moral strength of character to meet its environmental obligations.

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6. A copy of the letter from GLOBE Japan is available in Appendix A2.

## Summary of Remarks by The Honorable Anders Wijkman, GLOBE EU

*Mr. Anders Wijkman has been a member of the European Parliament since 1999. He is the President of GLOBE EU. He served as a member of the Swedish parliament from 1970 through 1978. Mr. Wijkman has been a member of several government task forces on issues related to the environment, sustainable development, energy and foreign aid.*

### The Bush Administration

To reiterate, it was a disappointment that the Bush administration withdrew from the Kyoto Protocol. This action may also be viewed as an indication that the US will also be withdrawing its active participation from other areas of environmental governance. This has already been illustrated by the developments at the Biodiversity Convention, which has not been signed by the United States.

One positive consequence of the decision made by the Bush administration is that it has brought unity within the 15 member states of the European Union. There is no reason that this unity shouldn't prevail. The draft plan for how to act on various levels on the Kyoto Protocol has very concrete proposals to move Europe forward on emissions reductions. Studies in the European Union show that the EU can reduce carbon dioxide emissions by at least 16% or double the requirement in the Kyoto Protocol for an annual cost that is less than US\$20 dollars per European citizen. The first 8% reduction is estimated to be less than US\$10 dollars per capita. Since the US economy is less energy efficient, the cost for emissions reductions should be even lower.

A few months ago, the European Commission presented a strategy on sustainable development. They identified six areas where European welfare was threatened in the long-term. These areas include:

- Poverty
- Health
- Demographics and population
- Climate and clean energy
- Mobility and spatial planning and
- Biodiversity and natural resources.

The Commission also put forth an objective that by 2020 European states should reduce all greenhouse gases by 30%. This reduction is equivalent to 1% per year since 1990. Heads of states and governments did not accept this objective due to the fact there was not enough time to discuss the issue. However, this move indicates that the Commission is in support of moving forward.

It is imperative that the EU implement an emissions trading system as part of its climate action plan. Once emission trading begins, companies will realize that this is not as difficult as previously believed and many new technologies and solutions will emerge.

When looking at expansion of the Kyoto Protocol, developing countries should be approached with the concept that they need energy for development and access to energy for services. Without energy there will be no development. Developed countries can assist with capacity building and technology leap-frogging. Investment in clean technologies is investment in our future. The OECD countries should be voluntarily pursuing these investment opportunities. It is a win-win situation to invest in new technologies while promoting a clean energy environment.

For example, Europeans are welcoming 12 candidate countries in eastern and central Europe who may become members of the European Union. These countries are being asked to raise their standards in social policy, environment policy, etc. This could not happen without the EU giving them financial assistance. This is a co-financing agreement; each year roughly 3 billion Euro is spent on this process. The same thinking should be applied between developed and developing countries.

The market economic system is not good at dealing with long-term problems. We are constantly discounting the future. Anything that happens eight to ten years in the future does not appear in the calculations. Some way needs to be found that a long-term dimension can be added to market forecasts. The tension between the short and long-term is plainly apparent and must be addressed.

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## Closing Remarks

The Honorable James C. Greenwood, GLOBE USA

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*Mr. James C. Greenwood<sup>1</sup> is the President of GLOBE International. He is also the current Acting Chair of GLOBE USA. He has been a member of GLOBE since 1994 and was elected to the United States House of Representatives in 1993.*

### **Closing Remarks on the International Legislators' Clean Energy Conference**

Without painting too bleak a picture of American politics, it needs to be said that 225 years ago our forefathers drafted the Constitution. This document set up a system, that while imperfect, ultimately works fairly well. This country has faced enormous problems that have divided us, race not the least among them.

One way or another, as the American people came to understand an issue, that understanding was reflected in their elected officials. It may take longer at times, in part due to the great freedoms that are granted in our Constitution. However, Americans will eventually get there, as we will when it comes to issues such as clean energy.

There are two scenarios for the future of the environmental scene. In one, Kyoto falls apart, never to come back together again. Economic competition between the countries in both the developed and developing world increases. Population growth creates irreversible levels of carbon dioxide and other greenhouse gases that in fact produce global warming on a scale that is too horrific to imagine – conditions and disasters that could result in the ultimate elimination of our species.

There is another option as well, a future where children are living in a hydrogen world – a world where glistening ponds of algae quietly produce hydrogen for future generations' energy needs, and where life is more like paradise than it is now.

There is a great deal of optimism and it is possible that we will someday achieve the second scenario. It will take greater wisdom in the future than we currently have now to solve our environmental problems. GLOBE, while a small piece of the puzzle, does play an important and critical role in adding to the collective wisdom of the world.

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1. Representative James C. Greenwood was elected President of GLOBE International at the GLOBE International General Assembly (GIGA) Business Session on July 15, 2001.