



Parliamentarians for Global Action (PGA)

*Parliamentarians for Global Action
Acción Mundial de Parlamentarios
Action Mondiale des Parlementaires*

**PGA's 31st ANNUAL FORUM:
"ENVIRONMENT AND ENERGY MANAGEMENT"**

IN COLLABORATION WITH THE UNITED STATES CONGRESS

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CAPITOL HILL**

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FINAL CONFERENCE REPORT

November, 2009

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**PGA'S 31ST ANNUAL FORUM:
"Environment and Energy Management"
Washington, DC
United States Congress**

1. EXECUTIVE SUMMARY

On October 20-22, 2009, Parliamentarians for Global Action (PGA) held its 31st Annual Forum in Washington, DC, on theme of "*Environment and Energy Management*." Approximately 100 Parliamentarians from participated in the 2009 Annual Forum, along with representatives from several international organizations, academia and civil society. The Forum was formally called to order on October 21, 2009 by Ms. Shazia Z. Rafi, Secretary-General, PGA.

The Annual Forum was structured in panels covering the following issues:

- Panel I: The Energy Game — Energy and economic growth, supply and demand, and alternative energy
- Panel II: Energy Impacts on the Environment and Climate
- Panel III: Social and Economic Challenges
- Panel IV: The Promise — A vision for a clean energy future
- Panel V: The Change — National and international strategies for the clean energy transition

The Forum also benefitted from keynote addresses by Senator Bernard Sanders (United States I-Vermont), and Dr. Steven Chu, United States Secretary of Energy.

Forum participants recognized that energy security and global warming represent two of the most consequential challenges humanity will confront in the 21st century. Participants from developed and developing countries alike acknowledged that global demand for energy will continue to increase as the world population grows, billions of people gain access to electricity, and developing countries seek stable, available, and affordable energy sources to fuel economic growth. Meanwhile, the accumulation of greenhouse gasses in the atmosphere—primarily due to the consumption of fossil fuels—is raising global temperatures above anything experienced in the course of human history, with the potential to dramatically alter the ecological systems upon with civilization depends.

However, both of these phenomena—the rising demand for energy and the initial consequences of global warming—will unfold in a context where fossil fuels are becoming more expensive, more contentious, and more scarce. The world experienced a preview last year when oil briefly rose to \$150 a barrel, with the severe economic ramifications felt across the globe. As a result of this temporary spike in world oil process, economic growth stalled, inflation rose, and consumer spending in other sectors decreased. In the future, this spike will be more than temporary—it will be the norm, as the rise in demand for oil outpaces new supply. To a similar but lesser extent, the same is true for the other fossil fuels, like coal and natural gas, which face their own supply and distribution constraints in a world hungry for cheap and dependable energy.

Energy and climate directly or indirectly affects nearly every other major global issue. Food production is heavily dependent on fossil fuels from the seed to the plate; and rising temperatures

and shifting weather patterns from climate change threaten to dramatically alter the cultivation zones humanity has depended on since the dawn of agriculture. Freshwater sources in the Himalayas and the Andes mountains are threatened by melting glaciers and changing patterns of rainfall. Rising sea levels from polar ice-melt endanger billions of people populating coastal areas across the globe. Public health is affected as the range of many infectious diseases expands as temperatures rise. The list goes on. And global security is jeopardized as conflicts are triggered or exacerbated by these environmental stresses.

Yet Forum participants also acknowledged that the global energy and climate challenges also represent *an extraordinary opportunity to reinvigorate the global economy*—and lay the foundation for long-term sustainable growth—through investments in clean, renewable, low-carbon energy sources. Indeed, the transformation of our antiquated energy infrastructure around the platforms of efficiency and reduced carbon emissions represents *the* great potential driver of technological innovation, economic growth, and job creation in the coming decades.

This transformation can also be structured to promote equitable economic development, providing opportunity and shared prosperity to—and within—all nations. There is the potential for hundreds of billions of dollars of clean energy investments to flow in the coming years; and these investments can serve as a catalyst for more vibrant and resilient cities, more prosperous rural areas, and better livelihoods for those countries and communities who have been left behind by the carbon-intensive economy of the past.

Forum participants acknowledged that the global community has arrived at a critical juncture, and the decisions we make now will affect the welfare of the planet for millennia to come. There is no longer such thing as the “status quo” or “business as usual,” because the future under an unmitigated emissions scenario will be devastatingly different the world we know today. A lack of concerted action to reduce global warming emissions is in fact a decision to lock in this bleak future. On the other hand, a strong push to transition to a clean energy economy is a decision to avert a climate catastrophe, preserve a habitable planet for future generations, and drive new investments and innovations all around the world today. The choice is clear, yet getting there will require concerted domestic and international effort and unprecedented cooperation.

The U.N. climate change negotiations in Copenhagen are rapidly approaching, and are intended to hammer out a successor treaty to the Kyoto protocol that expires in 2012. COP15 is the fifteenth Conference of the Parties (COP) under the United Nations Framework Convention on Climate Change (UNFCCC). The conference will take place from December 7 to December 18, 2009 in Copenhagen, Denmark. The overall goal for the COP15 is to establish an ambitious global climate agreement for the period from 2012 when the first commitment period under the Kyoto Protocol expires. PGA is sending a parliamentary delegation, led by PGA President Sen. Bassey Ewa-Henshaw (Nigeria), to participate in COP15 in follow-up to the Forum.

The ultimate configuration of a post-2012 climate framework can emerge only through the negotiations themselves. But PGA Forum participants outlined some of the most essential elements. A comprehensive agreement must include mitigation commitments by the major emitting countries, technology assistance and other incentives for developing country action, and support for climate adaptation in poor, vulnerable countries.

Also a successful post-2012 climate agreement must engage all the world's major economies through a “multi-track” framework allowing different types of commitments for developed and developing countries. The 25 major economies accounting for 84 percent of global emissions are extremely diverse, with per capita incomes and per capita emissions ranging by a factor of 18.

Strategies for integrating climate action with broader economic and development agendas will vary with national circumstance.

Accommodating these differences requires a flexible but binding international framework integrating different types of commitments, such as economy-wide emission targets, policy-based commitments, and sectoral agreements. Incentives for developing countries, including both market-based schemes and direct assistance, also must be provided.

In the Forum Declaration, PGA members called for concerted action to address energy insecurity and climate change. They committed to the goal of significantly reducing global greenhouse gas emissions, based on the principles of equity, flexibility, effectiveness, and common but differentiated responsibilities and respective capabilities. They agreed to support the international negotiations in Copenhagen, with the goal of achieving a fair and effective post-2012 international agreement to reduce global warming emissions. Moreover, PGA members committed their support for the development and expansion of policies to promote sustainable, low-carbon energy production, while creating jobs and advancing economic opportunities.

2. FORUM OUTCOMES

Goal

- To mobilize political leadership and the political will to advance new domestic policies and facilitate international cooperation in addressing energy insecurity and global warming.

Outcomes:

- Adoption of the Forum Declaration, which outlines the consensus-based commitments made by Parliamentarians.
- Increased awareness among Parliamentarians of the real and growing threat of climate change
- Acknowledgement of the need for effective policies to mitigate greenhouse gas emissions *and* to adapt to the irreversible impacts of global warming already locked into the climate system.
- Commitment to the United Nations Framework Convention on Climate Change.
- Affirmation of the principle that tackling global warming and energy insecurity can be a major international driver for economic growth and job creation in the coming decades;
- Productive networking sessions solidified new friendships amongst Parliamentarians that should facilitate international communication and coordination going forward.
- Enthusiasm amongst Forum participants to maintain contact and continue the spirit of cooperation going forward.

Declaration Commitments

Parliamentarians participating in the PGA 31st Annual Forum on Environment and Energy Management agreed to work within their respective Parliaments, Parliamentary Committees, and other regional and international fora in which they participate, to:

1. *Commit* to the goal of significantly reducing global greenhouse gas emissions, with corresponding short, medium and long-term targets;
2. *Support* the international negotiations in Copenhagen to achieve an effective post-2012 international agreement to reduce global warming emissions;
3. *Carry out* individual and collective actions, in a broad range of sectors, to address climate change, based on the principles of equity, flexibility, effectiveness, and common but differentiated responsibilities and respective capabilities;
4. *Encourage* fellow Parliamentarians to actively promote all legal measures to achieve the goal of a low-carbon economy, including the expansion of alternative and renewable sources of energy;
5. *Support* the development and expansion of policies to promote sustainable, low-carbon energy production, while creating jobs and advancing economic opportunities;
6. *Elevate* the human rights dimensions of the global warming threat;
7. *Coordinate our efforts and work together* as we set and implement our own domestic emissions reductions targets;
8. *Cooperate* and exchange best practices in climate change mitigation and adaptation measures in order to better integrate financing and technical assistance into international, regional and national efforts to reduce vulnerabilities to climate change;
9. *Facilitate* the deployment and commercialization of clean technology through various means, such as public and private investment, financial assistance, and technology transfer;
10. *Strengthen* information sharing and response capabilities to natural disaster risks raised by climate variability and extreme weather events;
11. *Increase* public awareness of the impacts of climate change, and enhance grassroots participation in efforts to reduce emissions;
12. *Promote* a new economic and environmental ethic that advances the principles of equity and broadly-shared prosperity in the international and domestic solutions forged to combat climate change.

3. PANEL DISCUSSIONS

Inauguration

The 31st Annual Forum was called to order shortly after 9am by Ms. Shazia Z. Rafi, Secretary-General, PGA.

Welcome Remarks by Senator Tom Harkin (United States D-IA), Member of PGA's International Council

Senator Harkin gave praise to President Obama and told the assembled Parliamentarians that Obama will be an ally in the fight against global warming. Senator Harkin acknowledged that the unprecedented challenge of global warming requires an unprecedented global response. He was very optimistic about the "new energy era," and ending our dependence on fossil fuels while creating millions of clean energy jobs. Harkin has plenty of experience with the economic development potential of clean energy--Iowa is the number 2 state in the United States in wind power generation.

Mentioning the forthcoming international negotiations in Copenhagen, Harkin said that richer nations must help smaller, poorer nations "leap over the carbon cycle" through mitigation assistance and technology transfer. He suggested that distributed energy sources may be better for developing nations with minimal grid infrastructure, as opposed to larger, centralized power plants. In conclusion, Harkin thanked the assembled and introduced Senator Bassey Ewa-Henshaw, President, PGA.

Senator Bassey Ewa-Henshaw (PGA President)

Senator Henshaw welcomed all those who had travelled so far to attend the 31st Annual Forum. He then quoted the PGA Mission Statement, to help set the tone for the two-day Forum. Senator Henshaw stressed that energy and environmental management is critical to sustainable development, and that PGA has been active in environmental issues for some time—it was present at the Rio Earth Summit, and had conducted a previous Forum on water management.

Senator Henshaw urged to the assembled Parliamentarians to ask themselves—"How is this relevant in my country, to my constituents?" He cautioned that we need political will to generate effective action on energy and environmental management, and that regardless of what happens in Copenhagen, Parliamentarians must be the initiators of change, and will have a pivotal role to play.

Representative Ed Markey of Massachusetts

Representative Ed Markey of Massachusetts was introduced by Senator Tom Harkin (D-IA). Rep. Markey noted that the U.S. position on climate and clean energy has changed dramatically since the

14th Annual Defender of Democracy Award

In conjunction with the Annual Forum, PGA held its Defender of Democracy Awards dinner on the evening of October 20th, 2009. The Defender of Democracy Award honors those individuals who have defended the principles of peace, democracy and justice around the world.

This year, PGA honored Mr. Kailash Satyarthi, Founder/Chair of the Global March Against Child Labor, for his extraordinary work in protecting those most vulnerable, at times risking his own life in the process. PGA also honored Ch. Aitzaz Ahsan, Barrister-at-Law, Senior Advocate of the Supreme Court of Pakistan. Ch. Aitzaz Ahsan has been instrumental in advocating for democracy in Pakistan, and has assumed a leadership role in the group of lawyers and judges that have been so instrumental in driving the pro-democracy movement during the past few years.

inauguration of President Barack Obama. He predicted that the U.S. Congress will pass—and the President will sign—legislation that reduces greenhouse gas emissions. The “American Clean Energy and Security Act” (ACES) was recently passed by the U.S. House of Representatives, and contains a host of measures to reduce emissions and invest in clean energy solutions. ACES also includes provisions beneficial to developing countries—including \$65 billion dollars to protect tropical forests, \$7 billion for international technology transfer, and \$7 billion for adaptation. Rep. Markey stressed the need for the U.S. to legislate nationally and negotiate globally, in the run-up to the Copenhagen climate meeting. In conclusion, Rep. Markey made it clear that the U.S. has a moral obligation to lead the global response to climate change.

Senator Barbara Boxer (D-CA) and Senator John Kerry (D-MA)

Senator Boxer stated that global warming represents one of the greatest challenges humanity has ever confronted. Yet at the same time, the transition to a clean energy economy represents an incredible opportunity for equitable development, job creation, and international cooperation. The U.S. is in the midst of a substantial political shift in its orientation towards global warming and clean energy, and the country has already taken enormous steps in the right direction with the public investments made in the American Clean Energy and Security Act (the stimulus package).

Senator Kerry, fresh off the plane from his trip to Afghanistan, delivered an impassioned set of remarks to the assembled Parliamentarians. He lamented that the U.S. Congress held the first hearings on climate change in 1988, and much precious time has passed without much action. But, like his Congressional colleagues before him, Senator Kerry reminded the audience that President Obama has brought new energy and a new focus towards the issue, and that the coming years will be critical in shaping the U.S.—and the global—response to climate change.

Senator Kerry acknowledged that until now, the U.S. has been more or less absent from the international efforts to combat global warming. But from the beginning, the Kyoto Protocol was never meant to be a permanent answer to such a daunting challenge, and the U.S. has been actively engaged in the COP meetings in Bali and Poznan in the run-up to Copenhagen.

Senator Kerry stressed that U.S. and China may represent 50% of the problem, but solving 50% of the problem is *not* sufficient to avert the most dangerous consequences of global warming. We need *all countries* to take action, in accordance with the principal of “common but differentiated responsibilities.” Industrialized countries have responsibility to put money on the table for adaptation and to provide financing for mitigation. Yet all countries should commit to measurable, reportable and verifiable actions to reduce emissions.

Ending on a positive note, Senator Kerry highlighted all the benefits associated with confronting global warming—clean energy can create jobs, improve public health, reduce the potential for conflict, and help economies develop sustainably.

PANEL I The Energy Game

Chair: Mr. Mark Pritchard, MP (United Kingdom), Member, International Council, PGA

- Mr. Steven Lee, Senior Energy Analyst, International Energy Agency
- Mr. John Foster, Canadian Centre for Policy Alternatives
- Dr. Majid A. Al-Moneef, MP (Saudi Arabia)
- Sen. Franklin Siakor (Liberia)
- Sen. Rida Azimi (Afghanistan)
- Hon. David Musila, MP (Kenya)
- Ms. Ermelinda Meksi, MP (Albania), Member, Executive Committee, PGA
- Hon. Pascal Kabeya Sabwa, MP (Democratic Republic of Congo)
- Sen. Eme Ekaette (Nigeria)

This first panel provided an overview of the energy—climate—economy nexus. Topics included:

- Energy and economic growth (*including differences across nations*)
- Energy demand projections
- Energy supplies (*including past energy resources and limitations on their use in the future*)
- Alternatives (*discussion of alternative energy sources and technologies and their potential for changing the energy systems of the future*)

The panelists emphasized the importance of energy in shaping the global economy and social development within nations. Indeed, energy powers our daily lives; it runs our factories, fuels our vehicles, and heats and cools our homes and businesses. The world cannot, however, take the continued availability of affordable energy for granted. Recent trends in energy markets suggest that the current trajectory is unsustainable and undesirable. Prices have become volatile and supplies tight. Before the global economic crisis, demand was growing while excess capacity was shrinking.

If accurate, and energy prices stay level or increase as projected, energy poverty – i.e., limited supplies of energy that people can afford to buy - will burden many of the world’s poorer countries. The term “energy poverty” is used to describe the lack of access to modern energy services. An estimated 2.4 billion people in developing countries lack modern fuels for cooking and heating and approximately 1.6 billion people—concentrated in sub-Saharan Africa and South Asia—do not have access to electricity.

Meanwhile, nation-states face a different set and scale of energy-related concerns. “Energy security” is a term that encompasses a broad range of factors, including: a country’s dependence on energy imports vs. domestic sources; susceptibility to supply disruptions, including price spikes; the vulnerability of the distribution system (pipelines, transmission wires, etc) to natural disasters or extremist attacks; and the overall diversity and resilience of a country’s energy supply. Energy security is a key component of national security, economic development, and domestic political stability, yet each country faces a different set of circumstances and challenges surrounding their definition and pursuit of energy security, particularly as the global supply of fossil fuels struggles to keep up with ever-increasing demand.

Over the next 25 years, the world population is projected to grow to almost nine billion people. Living standards are expected to rise, and society will need more basic resources – including food, water, and energy – to fuel and sustain this expansion. Population growth and increasing levels of per capita resource consumption will drive energy demand in the 21st century. This growth will be significant, as developing nations even if other countries do not achieve U.S. or other developed country per-capita levels of consumption. Major sources of this growth will be in transportation (90% fueled by petroleum today and the world’s fastest growing energy sector), and electrification, which increased dramatically in the 20th century and will continue to increase in the 21st century.

Global consumption of primary energy is projected to increase at a rate of approximately 1.6% per year. From 2006- 2030, the world’s energy demand is expected to grow by 45%. Developing economies will account for nearly 87 percent of this growth, with just two nations – China and India – accounting for 51 percent.ⁱ If current trends continue, it is projected that 86% of this new demand will be met by fossil fuels, 8.5% by renewables, and 5.4% by nuclear. Yet the planet cannot sustain such an outcome—this demand must be met in a much more sustainable manner.

Transforming the energy system, however, cannot happen overnight. It will require new – and often disruptive – technologies. It will require taking steps to ensure that the energy system remains structurally sound and economically viable during potentially difficult transitions. And although modernization poses a significant economic challenge, it also offers a clear opportunity for the world economy to sustain economic growth while shifting energy priorities in favor of greater efficiency and low-carbon fuels. Seizing this opportunity will fundamentally alter the geopolitical, economic, and environmental dynamics of what appears to be an increasingly complex energy future.

SUMMARY OF PANELIST PRESENTATIONS: THE ENERGY GAME

Chair: Mr. Mark Pritchard, MP (United Kingdom), Member, International Council, PGA

Mr. Steven Lee, Senior Energy Analyst, International Energy Agency

- Introduced the IEA as the entity which serves as an energy advisor to its 28 member countries
- Articulated the findings of the most recent “World Energy Outlook,” which under a business as usual scenario predicts that primary energy demand is expected to grow 45% between now and 2030—or 1.6% per year. Non OECD countries will account for 86% of this growth, and 80% will be supplied by fossil fuels.
- Stressed that it is possible to cut global emissions in half by 2050, and called for a “Clean Energy New Deal” to curb emissions through energy efficiency, decarbonizing power generation, and revolutionizing transportation.

Mr. John Foster, Canadian Centre for Policy Alternatives

- Emphasized that oil and gas will remain important commodities for some time; yet conflicts related to these vital commodities are slated to increase.
- Stressed that political decisions to reduce global dependence on oil, gas and coal will be tricky, yet critical to staving off the worst impacts of global warming.

Dr. Majid A. Al-Moneef, MP (Saudi Arabia)

- Highlighted that energy consumption in developing countries is growing—for example, car ownership is increasing by 5.8% per year.
- Predicted that fossil fuels will dominate 80% of the global energy supply through 2030.
- Stressed that energy security is not about “independence,” but rather about secure supplies and a functioning market

Sen. Franklin Siakor (Liberia)

- Acknowledged that Liberia is a small consumer of fossil fuels, and that primary energy consumption is based mostly on wood and charcoal, which is renewable but can have serious impacts on public health.
- Stated that Liberia has large renewable energy potential, but will require the assistance from the international community and the participation of private capital to develop these resources.

Ms. Rida Azimi (Afghanistan)

- Highlighted the Afghanistan’s enormous hydroelectric potential, both for large, utility-scale dams and for more individual and village-scale micro hydro.
- Emphasized the importance of affordable and reliable electricity to Afghanistan’s economic development and political stability.

Hon. David Musila, MP (Kenya)

- Stressed that energy must be secure, reliable and affordable—yet in Kenya, demand is growing faster than supply
- Better legislation and policymaking is needed to spur more public and private investment in renewable energy.
- Meanwhile, increased information, public awareness, and grassroots activism (like the Green Belt movement) can be effective instruments of social change.
- Noted the opportunity for electric grid interconnectivity in the Rift Valley region to exploit the area’s large geothermal potential.

Ms. Ermelinda Meksi, MP (Albania), Member, Executive Committee, PGA

- Provided an extensive overview of the challenges to reforming the Albanian energy sector—including problems with non-payment and the market-distorting effects of government subsidies.
- Discussed how European Union candidacy requires adherence to certain environmental standards, including in the energy sector.
- Proclaimed that some domestic clean energy policies have already advanced significantly, including renewable generation incentive feed-in tariffs that are already approved.

Hon. Pascal Kabeya Sabwa, MP (Democratic Republic of Congo)

- Extolled the incredible hydroelectric potential in the DRC—an estimated 774,000 GWh, representing 35% of the hydroelectric potential of the entire African continent.

- Emphasized the enormous biomass resources stored in the 1.1 million square kilometers of dense tropical rainforest—and highlighted the potential for sustainable harvesting of forest biomass, as well as the global warming impacts of unmitigated deforestation.
- Called on the international community to value the carbon sequestered in tropical forests in any future international greenhouse gas trading scheme.
- Stressed the need to improve the political situation in the DRC in order to attract private investment in the country's rich renewable energy resources.

Sen. Eme Ekaette (Nigeria)

- Provided an overview of the Nigerian energy sector, which is currently heavily dependent on oil for electricity, and for timber and charcoal as cooking fuels.
- Identified the need for private investment to help tap Nigeria's large hydroelectric potential.
- Acknowledged that political instability and conflict in the Delta region has hindered development of the region's abundant natural gas resources, but highlighted the success of the amnesty program that has helped to reduce violence and reintegrate insurgents into society.

PANEL II: ENERGY IMPACTS ON THE ENVIRONMENT AND CLIMATE

Chair: Ms. Prativa Rana, MP (Nepal), Member, International Council, PGA

- Congressman Dennis Kucinich (United States D-OH)
- Dr. Kilaparti Ramakrishna, Senior Advisor, Environmental Law and Conventions United Nations Environment Programme
- Dr. Bernadette Lahai, MP (Sierra Leone), Member, International Council, PGA
- Dr. Mahendra Bhutiyani, Defence Research & Development Organisation
- Hon. Laauli Leuatea Polataivao (Samoa), Deputy Speaker of the Legislative Assembly

Panelists acknowledged that the energy sector is a major contributor to global warming. Today, fossil fuels provide four-fifths of the energy that powers the global economy. Worldwide, 61 percent of greenhouse gas (GHG) emissions are linked to energy production, delivery, or use. In 2007, the combustion of fossil fuels released nearly 30 billion tons of carbon dioxide to the atmosphere—more than a million tons every hour—with coal and oil contributing roughly 40 percent each and natural gas accounting for the remaining 20 percent. Annual fossil-fuel carbon emissions have increased fivefold since 1950 and the rate of increase has accelerated since 2002.

To avoid catastrophic increases in global temperatures, these emissions must peak within a decade and then decline rapidly. Given these challenges, it is clear that our energy system—which evolved in a world very different from today's—must undergo a radical modernization. The market can no longer count on inexpensive and abundant supplies. Nor can the social and environmental costs of energy production, transport, and use continue to be ignored.

The IPCC estimates that even under an optimistic future emissions scenario, global temperatures will rise 1.1—2.9 °C above current temperatures by the end of this century. Yet, according to the Copenhagen Climate Science Congress, attended by 2500 scientists, “Recent observations confirm that, given high rates of observed emissions, the worst-case IPCC scenario trajectories

(or even worse) are being realized.”ⁱⁱⁱ The “worst-case” IPCC scenario predicts atmospheric concentrations of carbon dioxide of 1000 parts per million by 2100. Carbon dioxide concentrations of this level would correlate to global temperature increase of approximately 5° C, which would have devastating ecological, economic and social consequences. This grim outlook is substantiated by the International Energy Agency, in its *World Energy Outlook 2008*, which states: “Without a change in policy, the world is on a path for a rise in global temperature of up to 6°C.”ⁱⁱⁱ

A global temperature increase of such magnitude would be catastrophic. Extreme weather events such as drought, floods, and severe storms, including hurricanes, would all become more intense and inflict enormous damage to life and infrastructure. Rising sea levels would threaten the megadelta regions of Asia, coastal cities in Europe, low-lying areas in North and Latin America, and small islands. (The melting of the Greenland ice sheet alone could lead to a sea-level rise of seven meters). Other major impacts include:

- Melting of inland glaciers in the Himalayas and the Andes, which provide water to over a billion people
- Increased incidents of heat- and flood-related mortality and of water and food-borne diseases.
- Declining crop yields and increased hunger in many regions, including parts of Africa and Asia.
- Degrading fisheries.
- Declining coral reef systems.
- Extinction facing 20 percent to 30 percent of global plant and animal life.

SUMMARY OF PANELIST PRESENTATIONS: ENERGY IMPACTS ON THE ENVIRONMENT AND CLIMATE

Ms. Prativa Rana, Nepal

- Highlighted the worrisome impacts of global warming in Himalaya and Hindu Kush mountains, which are major hubs of population and major watersheds for humanity.
- Presented a snapshot of the energy sector in Nepal, which is still quite undeveloped, generating only 500 megawatts of hydroelectric power when the potential is for 43,000 megawatts.

Dr. Kilaparti Ramakrishna, Senior Advisor, Environmental Law and Conventions United Nations Environment Programme

- Celebrated the support UNEP has provided to developing country governments in addressing energy and climate challenges.
- Proposed a framework for future collaboration between UNEP and PGA, including establishing a forum to address energy and environmental issues through regional parliamentary cooperation.
- Proposed the development of Multilateral Environmental Agreements to address cross-cutting climate and energy challenges.

Congressman Dennis Kucinich (United States D-OH)

- Emphasized the severity of the climate crisis, and acknowledged the imperative for the United States to act boldly to reduce emissions.
- Described how he decided to vote against the Waxman—Markey climate bill (the American Clean Energy and Security Act), because he didn't feel it was strong enough.
- Challenged PGA members to not shy away from difficult negotiations in Copenhagen.

Dr. Bernadette Lahai, MP (Sierra Leone), Member, International Council, PGA

- Described how less than 5% of the population of Sierra Leone has access to modern energy sources, and how household energy is mostly dependent on biomass combustion.
- Stressed the need for international development assistance to help modernize the energy sector with clean and renewable energy resources.
- Highlighted the carbon sequestration and storage potential of tropical forests and urged the international community to recognize and reward this potential in the context of an international climate change agreement.

Dr. Mahendra Bhutiyan, Defence Research & Development Organisation (India)

- Underscored the significance of the Himalayan mountains—including their impact on weather patterns and water availability throughout the Indian Sub-continent.
- Described data showing that precipitation has been decreasing and temperature increasing throughout last 143 years.
- Highlighted that a loss of snowcover has resulted in reduced discharge in the major rivers of the region.

Hon. Tolofuaivalelei Falemoe (Samoa), Speaker of the Legislative Assembly

- Stressed that Samoa is highly vulnerable to sea level rise and severe weather-related disasters
- Adaptation projects are needed both nationally and within the South Pacific region
- Despite Samoa's good intentions to pursue renewable energy, the country has limited resources, and thus needs international assistance.

PANEL III – SOCIAL AND ECONOMIC CHALLENGES

Chair: Ms. Marie Norden, MP (Sweden), Member, Executive Committee, PGA

- Mr. Cletus Springer, Director of Sustainable Development, Organization of American States
- Ms. Özlem Türköne, MP (Turkey)
- Mr. Bunker Roy, Founder, Barefoot College (India)
- Sen. John Shagaya (Nigeria)
- Hon. Miguel Luis Bonasso (Argentina), Chair, Natural Resources and Environment Committee
- Dep. Mamadou Lamine Thiam (Senegal)

PGA members noted that scientists expect that developing countries with little responsibility for today's climate instability will be the hardest hit by climate change. This asymmetry of circumstance prompts a pressing question: Can a future climate treaty be built on strong principles of fairness? In truth, equity already plays a role, albeit a limited one, in climate agreements. The Kyoto Protocol, for example, is based on the principle of "common but differentiated responsibilities," which recognizes different obligations for parties in different economic and emissions positions. And the Kyoto negotiating positions of many countries incorporated specific equity dimensions.

PGA members emphasized how the ultimate configuration of a post-2012 climate framework can emerge only through the negotiations themselves. But the essential elements are reasonably clear: A comprehensive agreement must include mitigation commitments by the major emitting countries, technology assistance and other incentives for developing country action, and support for climate adaptation in poor, vulnerable countries.

Mitigation

Effective mitigation commitments can take three basic forms: emission targets, policy-based commitments, and sectoral agreements. From the standpoint of environmental effectiveness and economic efficiency, absolute economy-wide emission targets, like those set by the Kyoto Protocol, are the clear favorite. They establish clear and verifiable environmental endpoints. And they provide a foundation for emissions trading—the buying and selling of emission allowances—which harnesses market forces to achieve reductions at the lowest possible cost. On pure policy grounds, environmental effectiveness and economic efficiency would argue for extending this approach globally, with all the major economies committing to binding absolute targets. Indeed, this may be the long-term ideal towards which the climate regime should evolve. But it is not feasible now. China, India, and other developing countries have made clear that they will not accept economy-wide emission limits.

An alternative approach for developing countries is "policy-based commitments"—making an international commitment to implement specific nationally defined policies that will reduce emissions. Such commitments could be readily tailored to national circumstance, and could flow directly from domestic policies that are driven by other priorities, such as energy security, economic growth, or cleaner air, but simultaneously deliver climate co-benefits. China, for example, has domestic energy efficiency targets, renewable energy goals, and automobile fuel economy standards; some version of these could be put forward as international commitments. Tropical forest countries such as Brazil or Indonesia could commit to policies to reduce deforestation. Others might put forward policies to reduce industrial emissions.

A third form of mitigation commitment—in addition to targets and policy commitments—are sectoral agreements. Countries, both developed and developing, could commit to targets, standards, or other measures to reduce emissions from one or more given sectors. The case for sectoral agreements is strongest in the case of energy-intensive, globally traded industries, such as iron, aluminum, and cement, where uneven carbon regulation poses the greatest risk of competitive imbalances. Sectoral agreements could also help to target efforts in key sectors such as electric power, where international technology cooperation is perhaps most critical, and transportation, where commitments among a handful of countries on fuel and efficiency standards could effectively transform the global automotive market. For a developing country, a sectoral agreement might be in addition to, or in lieu of, a policy-based commitment. For a developed

country, a sectoral commitment would be parallel to its economy-wide target, and one means of achieving it.

Incentives for Developing Country Action

PGA members stressed the need for incentives from industrialized countries. These can take two forms—market-based incentives, in which countries earn tradable emission credits for reducing their emissions, and official development assistance from developed countries. Many developing countries are earning emission credits now under Kyoto's Clean Development Mechanism, which has demonstrated both the weaknesses and the promise of the crediting approach. A post-2012 agreement will almost certainly include a redesigned crediting mechanism that moves beyond a project-by-project approach to reward reductions on a broader scale. One possibility is to complement policy based commitments with "policy crediting"—allowing a country to earn credits for a portion of the reductions achieved under a committed policy. This creates a market incentive to assume, and to fulfill, a policy-based commitment. A crediting approach works, however, only if there is demand for the credits developing countries are generating, which in turn necessitates strong absolute targets for developed countries.

Developed countries also must be prepared to provide more direct assistance. As an interim step, the United States, Britain and Japan recently led an effort to establish a new Clean Technology Fund at the World Bank projected to deliver \$5 billion or more for technology deployment over five years. As with past climate-related assistance, the fund relies entirely on voluntary contributions by donor countries. One issue for post-2012 is whether to establish a more predictable flow through firm funding commitments or through a mechanism such as a levy on international emissions trading. Another issue is how to give developing countries greater access to state-of-the-art technology while safeguarding intellectual property rights.

Adaptation

From its inception, the international climate effort has focused predominately on the mitigation side of the equation. However, there was broad recognition amongst PGA members that a post-2012 agreement must deliver stronger action on adaptation as well. The issue is in part the willingness of better-off countries to commit steady, substantial support. But the real challenge is how best to deploy those resources to facilitate climate resilience and response on the ground.

One complicating issue in crafting the international response is the impossibility in most cases of clearly distinguishing the effects of global warming from the effects of natural climate variability. While most might acknowledge direct cause and effect in the case of sea level rise, warming's broader toll will be in intensifying the strength or frequency of otherwise ordinary weather events. "Responsibility" in these cases is harder to assess.

Fortunately, the most effective response — be it an early warning system, a stronger building code, or a new drought-resistant crop — is often the same whether the risk is natural or human-induced. At a practical level, this argues for a comprehensive approach to reducing climate risks, regardless of their source, by "mainstreaming" or integrating adaptation into development decision-making and disaster preparedness and response. This effort would extend well beyond the climate regime, as for instance, by approving multilateral development assistance only for projects that score well on climate resilience. But it is perhaps only within the climate regime that adaptation needs can gain sufficient political salience to leverage this broader response. A post-

2012 agreement could advance adaptation on two fronts: proactively, by facilitating comprehensive national planning to reduce climate risk; and reactively, by helping especially vulnerable countries cope with the risks that remain.

On the proactive front, a new international climate agreement can help needy, at-risk countries develop and implement comprehensive national adaptation strategies. Such strategies could identify climate risks (from both climate change and climate variability), existing and needed adaptation capacities, and high-priority implementation needs. It would also map out policies to incorporate climate risk management into development decision-making. The agreement could designate or establish a body to provide technical assistance and to assess the adequacy of a country's national strategy. Once its strategy is approved, a country could be eligible for implementation funding through the climate regime, and the strategy could serve as a basis for targeting other multilateral or bilateral assistance.

On the reactive side, a post-2012 agreement can establish an international response fund to assist countries suffering extreme and/or long-term climate impacts. At present, post-disaster assistance is largely ad hoc, with a new round of international pledging following each event. A fund supported by long-term funding commitments would enable a more predictable and timely response. It could narrowly target impacts directly attributable to climate change. Or a new fund could address the full range of climate-related disasters—from extreme weather events such as typhoons to long-term impacts such as sea-level rise—whatever their cause. In addition to addressing the direct impacts of climate change, this approach would help rationalize climate disaster assistance more generally by substituting regularized funding for reactive and unpredictable aid.

SUMMARY OF PANELIST PRESENTATIONS: SOCIAL AND ECONOMIC CHALLENGES

Mr. Cletus Springer, Director of Sustainable Development, Organization of American States

- Emphasized the need for an international climate change treaty built on the principles of common and differentiated responsibilities *and capacities*.
- Expressed concern that if no agreement is reached in Copenhagen, then developing countries will be forced to continue developing their energy sectors alone, without assistance from industrialized countries.
- Identified the significant investment needs in developing countries—cited a study by the Organization of American States estimating at least \$10 billion in investment per year is necessary to mitigate emissions in the Caribbean region.

Ms. Özlem Türköne, MP (Turkey), Member of Turkish Delegation to the PACE

- Declared that any international climate and energy strategy should include ways to help provide access to modern energy services to the two billion people who don't yet have it.
- Referenced the G20's leaders' statement published after the Pittsburgh Summit, in which states committed to stimulate investment in clean energy and energy efficiency, and provide financial and technical support for such projects in developing countries.
- Emphasized the need to elevate the role and importance of human rights in international policymaking around climate change.

Mr. Bunker Roy, Founder, Barefoot College

- Delivered an inspiring presentation describing how his organization is helping to deploy solar electricity in thousands of villages around the world.
- Demonstrated how clean energy solutions can be low-cost, grassroots, decentralized, distributed and democratic.
- Stressed that everyone has the ability to be an engineer, and showed how his organization is effective at empowering women to develop these advanced skills.

Sen. John Shagaya (Nigeria)

- Highlighted the fact that Nigeria—and much of Sub-Saharan Africa—are highly susceptible to the ecological and socioeconomic dislocations that will result from climate change.
- Described how coastal cities and rain-fed agriculture are threatened by rising sea levels and changing weather patterns.
- Lamented the practice of natural gas flaring
- Lauded the passage of a National Climate Change Bill by the federal legislature of Nigeria—which will establish a national climate change commission; set standards for renewable energy; and facilitate implementation of the Clean Development Mechanism.

Hon. Miguel Luis Bonasso (Argentina), Chair, Natural Resources and Environment Committee

- Noted the progress Argentina has made in slowing its very high rate of deforestation (which is one of the largest global sources of greenhouse gas emissions) through Parliamentary action.
- Described the precarious state of the Andean glaciers due to increased temperatures from global warming and the damages done by large mining operations.

Dep. Marieme Gueye Gassama (Senegal)

- Provided an overview of the energy sector in Senegal, where the population still depends on biomass for a large percentage of their primary energy use.
- Pointed to the potential for developing a more modern biofuel industry, tapping into Senegal's productive agricultural sector.
- Emphasized the need for an international climate change agreement that provides developing countries with clean energy technologies and rewards forest conservation and afforestation.

FORUM ADDRESS

Dr. Steven Chu, Secretary of Energy, United States Department of Energy

Secretary Chu delivered a detailed PowerPoint presentation describing the most recent climate science findings, which corroborate the worst-case scenario outlined in the 2007 IPCC report. He then discussed the potential for large-scale development of renewable energy technologies, both in the United States and internationally, including the roles of nuclear and coal with carbon capture and sequestration. Secretary Chu emphasized that if the world is to meet the science-

based emissions reductions necessary to avoid the worst impacts of global warming, then the time to act is now. He acknowledged the need for U.S. leadership, and detailed the extraordinary investments the United States recently made in renewable energy and energy efficiency through the American Recovery and Reinvestment Act as the first of many positive steps the U.S. has taken to reduce emissions since the inauguration of President Obama.

Drafting Committee Meeting to Pre-Draft Forum Declaration

The drafting session was chaired by **M.J. Nolan, MP, PGA Executive Committee Member** (Ireland). The Drafting Committee worked productively and cooperatively to reach a general consensus on the contents of the Draft Declaration. One participant expressed the need to include a stronger emphasis on the need for a new economic and environmental ethic that advances the principles of equity and broadly-shared prosperity in the international and domestic solutions forged to combat climate change. A discussion amongst the Drafting Committee produced language suitable for inclusion as Commitment 12 in the Declaration.

The Declaration was adopted unanimously by PGA members on Day Two of the Annual Forum.

PANEL IV—THE PROMISE

Chair: Dr. Eugene Nhlanhla Nqaba Ngcobo, MP (South Africa), Chair, Committee on Science and Technology

- Dr. Bryan Willson, Director, Engines and Energy Conversion Laboratory, Department of Mechanical Engineering, Colorado State University
- Ms. Sook Mee Son, MP (Korea)
- Sen. Petru Filip, (Romania), Chairman of the Committee on Public Administration, Territorial Planning and Environmental Protection
- Hon. Crispin Mutumbe, MP (Democratic Republic of Congo)

Panel IV focused on the promise of clean and renewable energy technologies to combat climate change and facilitate equitable economic growth in the developing world.

In many ways, the renewable energy transformation has already begun. The United Nations Environment Program estimates that 2.3 million people are presently employed in the global renewable energy sector.^{iv} In recent years, venture capital (VC) investment in the clean-tech sector has boomed—jumping 78 percent in North America in 2006, so that clean tech now accounts for 11 percent of all VC investments, trailing only the software and biotech sectors. In China, clean tech VC investments soared 147 percent just between 2005 and 2006, representing 19 percent of all VC investment in that country.

Meanwhile, the renewable energy sector is growing at an incredible pace. From 2002—2007, solar energy grew by 41 percent, wind energy by 24 percent, and biofuels by 20 percent.^v Compare these rates to the 5.9 percent growth rate for coal and 1.8 percent growth rate for oil, and the trend is clear: renewable energy is now the dominant source of new energy generation, by far.

Wind

Since 2000, wind power has gone from a tiny niche electricity supplier to become a significant force in the global power business. Total generating capacity is estimated to have passed 100 gigawatts in early 2008, double the amount in 2004. In 2007, wind power represented 40 percent of new generating capacity installations in Europe and 35 percent in the United States. Further growth will come from offshore wind farms, which are expected to expand rapidly in the coming decade. And this torrid growth appears likely to continue as more and more governments implement wind-friendly electricity laws.

Solar

The solar industry is starting from a smaller base but is growing even more rapidly than wind power. Global annual production of solar energy rose 41 percent in 2006 and 51 percent in 2007. Cumulative installations of solar cells have grown more than fivefold over the past five years, spurred by strong incentive programs in Germany, Japan, and Spain.

Even as solar cells enter the mainstream, attention has focused on using solar thermal energy through large concentrating solar power (CSP) plants, which provide large quantities of electricity that is transmitted to cities and industries via high-voltage power grids, in the same way most power is today. While some regions such as northern Europe do not have sufficient solar resources to meet more than a fraction of their energy needs, other areas could become major exporters of solar energy. North Africa, for example, has a vast solar resource, and plans are being laid to build solar power plants that would transmit electricity to Europe. An area covering less than 4 percent of the Sahara Desert could produce enough solar power to equal global electricity demand.

Geothermal

Geothermal power currently provides just 10 GW of power worldwide, with much of it in the United States, the Philippines, and Mexico. But a new generation of enhanced geothermal technologies is now being developed that makes it possible to tap a much larger geothermal resource base. Advanced geological sensing and drilling techniques developed by the oil industry are being combined with new heat exchanger materials and systems. The Massachusetts Institute of Technology has estimated that the United States alone has at least 100 GW of geothermal potential, mainly in the Western states, and similar potential undoubtedly exists in many other countries.

Energy efficiency

Many technologies are becoming more and more efficient—from steelmaking to automobiles—and in recent decades, the economies of most industrial countries have centered the bulk of their economic growth on light industry and the service sector, with energy-intensive industries such as smelting metals and manufacturing petrochemicals falling as a share of the total economy. Even larger opportunities are found in developing nations, where energy productivity tends to be lower and much of the basic infrastructure is still being built. However, this potential will be offset in some countries in the short term by the fact that they are entering an infrastructure- and energy-intensive stage of economic development.

Buildings

The greatest potential for energy savings lies in the most basic element of the energy economy—buildings—which consume about 40 percent of global energy and emit a comparable share of CO₂ emissions. About half of this energy use is for space and water heating, and the rest is associated with the production of electricity for lighting, space cooling, and powering appliances and office equipment. With technologies available today, such as better insulation, more-efficient lighting and appliances, improved doors and windows, and heat recovery ventilators, the fossil energy needs of buildings can be reduced by 70 percent or more, with the additional investment paid for via lower energy bills. Further gains can be achieved by designing and orienting buildings so that they can benefit from natural heating, cooling, and day lighting.

SUMMARY OF PANELIST PRESENTATIONS: THE PROMISE

Dr. Bryan Wilson, Director, Engines and Energy Conversion Laboratory, Department of Mechanical Engineering, Colorado State University

- Focused on the clean energy innovations emerging from his laboratory, including efficient cook stoves, algae-based biofuels, and Prieto batteries (more efficient batteries).
- Emphasized that new technologies need a supportive public policy framework help them develop.
- Discussed the need for international financial and logistical assistance to help deploy these technologies in developing countries.

Ms. Sun Young Choi, MP (South Korea)

- Described how South Korea is moving forward aggressively with low-carbon energy policies—including policies to encourage construction of low-energy buildings, and the manufacture of clean and efficient automobiles.
- Presented the South Korean perspective on the need to guarantee access to modern energy sources to every citizen, and in defining this “minimum energy standard” as a basic right.
- Stressed the critical role of Parliamentarians in advancing clean energy policies in their home countries.

Sen. Petru Filip, (Romania), Chairman of the Committee on Public Administration, Territorial Planning and Environmental Protection

- Noted that as part of European Union, Romania is part of the EU commitment to a 20% reduction in GHG emissions and the generation of 20% renewable energy by 2020.
- Described the energy security challenges around European dependence on natural gas imports, and the need to develop domestic alternatives.
- Called on PGA members to push for domestic clean energy policies, while also focusing on the forthcoming international negotiations in Copenhagen.

Hon. Crispin Mutumbe, MP (Democratic Republic of Congo)

- Focused on the critical role of forests in the stabilization of atmospheric GHG emissions.

- Emphasized the political component of forest preservation, in that forests are vital to securing the support of developing countries for global climate action in any international climate agreement.
- Pointed to the UN—REDD program as a new mechanism for addressing forest conservation.

PANEL V: The Change

Chair: Dr. Donya Aziz, MP (Pakistan), Member, Executive Committee, PGA

- Congressman Earl Blumenauer (United States D-OR)
- Ms. Therese Frösch, MP (Switzerland), Member, International Council, PGA
- Mr. Jake Schmidt, International Climate Policy Director, Natural Resources Defense Council
- Mr. Jon Chase, Vice President, Government Relations, Vestas Wind Systems A/S

This panel was structured around the program and policy needs at the national and international levels necessary to move toward a sustainable and equitable clean energy future. Panelists described some of the sets of measures their countries have undertaken to increase renewable energy generation and the overall energy efficiency of their economy. Then the conversation turned towards the upcoming Copenhagen climate change negotiations, and their impact on national climate and clean energy policy.

PGA members acknowledged that the U.N. climate change negotiations in Copenhagen are rapidly approaching, which are intended to hammer out a successor treaty to the Kyoto protocol that expires in 2012. COP15 is the fifteenth Conference of the Parties (COP) under the United Nations Framework Convention on Climate Change (UNFCCC). The overall goal for the COP15 is to establish an ambitious global climate agreement for the period from 2012 when the first commitment period under the Kyoto Protocol expires.

A successful post-2012 climate agreement must engage all the world's major economies through a "multi-track" framework allowing different types of commitments for developed and developing countries. The 25 major economies accounting for 84 percent of global emissions are extremely diverse, with per capita incomes and per capita emissions ranging by a factor of 18. Strategies for integrating climate action with broader economic and development agendas will vary with national circumstance.

Accommodating these differences requires a flexible but binding international framework integrating different types of commitments, such as economy-wide emission targets, policy-based commitments, and sectoral agreements. Incentives for developing countries, including both market-based schemes and direct assistance, also must be provided. A post-2012 agreement might advance adaptation on two fronts: proactively, by facilitating comprehensive national planning; and reactively, by helping countries cope with the risks that remain. Given the time it will take a new U.S. administration and Congress to establish a domestic climate policy, a detailed post-2012 agreement is unlikely when governments meet in late 2009 in Copenhagen. Instead, governments should aim for consensus on a broad framework and continue negotiating toward specific commitments.

The core international challenge in addressing climate mitigation—and, by extension, climate adaptation—is arriving at fair and effective commitments among the world’s major economies. They are ones whose actions are needed to reduce global emissions, and the ones best able to help poor, vulnerable countries cope with climate impacts.

The world’s major economies are also the ones most responsible for the greenhouse gas pollution already accumulated in the atmosphere. Between 1900 and 1999 the currently industrialized countries have emitted the vast majority of the total emissions. Though no longer the number one emitter, the United States still accounts for 30.3% of all emissions since the industrial revolution. The EU (22.1%), Russia (8.9%), China (7.0%), and Japan (3.7%) follow distantly.

Twenty-five economies (counting the European Union as one) currently account for 84 percent of global emissions. These same countries account for 74 percent of global population, and 90 percent of global GDP. It is obvious enough why the engagement of the major economies is an environmental imperative—steep cuts in global emissions are not possible without them. But it is imperative politically as well. There are costs to reducing emissions and when only some bear them—because they are the only ones acting—these countries may risk harm to their industrial competitiveness. For any to sustain ambitious climate efforts, they must therefore be confident that their counterparts (and competitors) are also contributing their fair share. The best way to instill this confidence is through a balanced set of commitments that are clear, verifiable, and in some way binding.

Mitigation commitments by all major economies may only be feasible, however, with some flexibility in the *form* of their commitments. In their stages of development, economic structures, policy cultures, resource bases, etc., the 25 largest emitters are extremely diverse. Their per capita incomes and per capita emissions range by a factor of 18. The kinds of policies that can successfully integrate climate action into broader economic and development agendas vary from country to country. To accommodate these differences in circumstance and strategy, a new agreement will have to allow for different types of mitigation commitments.

On adaptation, it is for the most part not the major economies, but a different set of countries, that have the most at stake: small island and low-lying nations losing ground to rising seas, and poor African countries facing greater risk of drought, disease, and famine. Yet here, too, an effective response hinges on agreement among the major economies. It is the major developed countries that have the resources—and, in the eyes of many, the responsibility—to help these countries absorb the impacts of warming. And they are only likely to commit substantial resources as part of a deal in which the major emerging economies commit to reduce their emissions.

The type of architecture that would most effectively marshal the major economies on both mitigation and adaptation could be described as an “integrated multi-track” framework: “multi-track” because it contains multiple commitment types, or tracks, and countries have some choice among them; “integrated” because these varied efforts are linked in a single, unifying structure.

While there has been progress made moving climate legislation through the U.S. Congress in 2009, final enactment is not likely, which would make it difficult for the new Administration to commit to a specific emissions target in Copenhagen. In that case, Copenhagen is unlikely to produce a full and final agreement that could be submitted to governments for ratification. A more realistic outcome may be an agreement on the basic architecture of the post-2012 climate framework -- for instance, binding economy-wide targets for developed countries, policy commitments for the major emerging economies, and support mechanisms for technology, finance, and adaptation in developing countries. This intermediary agreement could then serve as the basis for further negotiations in 2010 on specific commitments in a full and final agreement.

Realistically, the most governments may be able to achieve in Copenhagen is consensus on the basic framework of a post-2012 agreement, with the details to be filled in later. To be credible, such an interim agreement would have to spell out at a minimum have which countries would be assuming commitments, and of what type. But unless Congress had already passed mandatory climate legislation (an unlikely prospect) the United States would not be ready to commit to a specific emissions target. Thus it is unlikely that other countries would be prepared to specify the content of their commitments either. Given the need for swift, strong action, such a limited outcome might readily be dismissed as a failure. But if it were to prove possible, a firm agreement that all the major economies are finally prepared to negotiate measurable and verifiable commitments would in fact be a major step forward. It would qualify Copenhagen as a success, and would for the first time lay a foundation upon which could be erected an equitable and effective post-2012 agreement.

SUMMARY OF PANELIST PRESENTATIONS: THE CHANGE

Dr. Donya Aziz, MP (Pakistan), Member, Executive Committee, PGA

- Set the context for the panel by introducing some of the challenges and opportunities that developing countries are confronting as they seek to address global warming and energy insecurity with clean energy solutions.
- Explained some of the particulars of clean energy policy development in Pakistan.
- Touched on the threats to human security and political stability from the impacts of global warming, particularly on the country's freshwater supplies.

Congressman Earl Blumenauer (United States D-OR)

- Recounted the evolution of global warming and clean energy in U.S. politics, and noted how much has changes since the inauguration of President Obama.
- Discussed some of the details of the American Clean Energy and Security Act (the Waxman—Markey climate and clean energy bill) and lauded its passage by the U.S. House of Representatives.
- Gave hope for a positive outcome in Copenhagen, even if an agreement is not finalized.

Ms. Therese Frösch, MP (Switzerland), Member, International Council, PGA

- Described the greenhouse gas reduction and clean energy policymaking process in Switzerland, and some of the negotiations and compromises necessary to pass measures through the Swiss legislature.
- Articulated some of the specific policies employed in Switzerland, including a CO2 tax on home heating fuels, with the acknowledgement that these policies may not be appropriate throughout the world, particularly in developing countries.

Mr. Jake Schmidt, International Climate Policy Director, Natural Resources Defense Council

- Presented the climate change challenge as an enormous opportunity for job creation and economic development, given the appropriate policies.
- Admitted that the Copenhagen negotiations will be difficult, but urged PGA members not to focus singularly on the outcome of the December meetings, emphasizing that there are

other simultaneous channels for progress, including in each country's domestic policy arenas.

- Highlighted some of China's recent commitments on clean energy and climate action, and emphasized the positive impact this could have on international negotiations going forward.

Mr. Jon Chase, Vice President, Government Relations, Vestas Wind Systems A/S

- Provided an overview of the Vestas wind energy company and its operations in multiple countries.
- Elaborated on Vestas' U.S. business, and how it is creating many good "green jobs" in manufacturing and installation of wind systems nationwide.
- Described the state and national policy architecture that is most helpful in growing a vibrant wind energy sector.

Adoption of Forum Declaration

The drafting session was chaired by **M.J. Nolan, MP, PGA Executive Committee Member** (Ireland), with assistance during the negotiations from Peter Barcroft and Shazia Rafi. PGA members were overall very supportive of the Draft Declaration prepared by the Drafting Committee. The most contentious debate focused on how to frame the delicate balance of responsibility for action on climate change between developed and developing countries, and between the larger and smaller developing economies. Ultimately it was a matter of semantics—not major ideological differences—and was resolved through a revision process. Other PGA members asked for specific mention of the disproportionate burden borne by women, and to elevate the human rights impacts of climate change.

The requested revisions were made, and PGA members passed the Declaration unanimously.

ⁱ http://www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_english.pdf

ⁱⁱ http://climatecongress.ku.dk/newsroom/congress_key_messages/

ⁱⁱⁱ http://www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_english.pdf

^{iv} <http://www.ilo.org/wcmsp5/groups/public/---dgreports/--->

[dcomm/documents/publication/wcms_098503.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_098503.pdf)

^v New Energy Finance, *Global Trends in Sustainable Energy Investment* (London: 2008), p. 27.