UN Forum on Energy Efficiency and Energy Security for Sustainable Development:

Taking Collaborative Action on Mitigating Climate Change

Seoul Korea

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Enhancing Energy Efficiency & Energy Security for Sustainable Development

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USEA
United States Energy Association

USEA is the US Member Committee of the World Energy Council

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USEA/WEC Mission:

"to promote the sustainable supply and use of energy for the greatest benefit of all people."

Houston 1998 – *"Energy & Technology: Sustaining Global Development into the Next Millennium*

Buenos Aires 2001 – *"Energy Markets: The Challenges of the New Millennium*

Sydney – 2004 *"Delivering Sustainability: Challenges and Opportunities for the Energy Industry"*

Rome – 2007 *"The Energy Future in an Interdependent World"*

Energy Efficiency & Energy Security

- Technology
- Markets
- Sustainability
- Interdependence

TECHNOLOGY

- Need to advance research, development, but mostly demonstration and deployment.
- Need to focus on end-use; transportation and energy production efficiency.
- Need to address non-technical barriers to advancing deployment of clean energy technologies.

MARKETS

- Need to support robust global trade in energy services.
- Need to directly address the main barrier to deploying advanced technology, which is the incremental cost - Where will the additionally capital come from?
- Need to reduce barriers to trade in energy efficiency products-tariffs; taxes; custom/import fees.
- Need to improve the fundamentals of mechanisms that support cross-border trade-enforcement of contracts; intellectual property rights, etc.

SUSTAINABILITY

- Need to address the climate change issue in a manner that is practical, economic and achievable.
- Need to continue bringing hundreds of millions of people out of poverty and out of energy poverty.
- Need to find approaches that will continue to allow economic development while addressing the array of environmental issues including climate.

INTERDEPENDENCE

- Need to recognize that energy interdependence is the key to energy security – not independence.
- Need to avoid the "danger of resource nationalism."
- Need to "ensure that the global energy markets and international partnerships do not fall about."

DOMESTICALLY IN THE US IN 2008

- Consumption and demand will continue to increase.
- Domestic production will not keep pace with demand increases – oil and gas imports grow.
- Construction of new infrastructure problematic:
  - **Coal** – constrained by environment concerns.
  - **Nuclear** – constrained by financial, labor and material uncertainty.

DOMESTICALLY IN THE US IN 2008 (Cont'd)

- **Natural Gas** – constrained by future price concerns and manufacturing capability.
- **Renewables** – constrained by cost, intermittence and lack of economic storage options.

Combined with transmission constraints, regulatory uncertainty, rapidly increasing prices to consumers, and an unknown future climate regime.

ENERGY EFFICIENCY BECOMES PRIORITY ONE FOR ENERGY & ECONOMIC SECURITY & CLIMATE MITIGATION

FOCUS NEEDS TO BE ON:

- Efficiency standards
- Technology development and deployment
- Land-use planning/transportation planning
- Price/market signals
- Incentivizing investments, including tax policy

INTERNATIONAL IN 2008

- Major economies process for climate change and energy security
- Asia Pacific Partnerships
- International Partnership for the Hydrogen Economy
- Carbon Sequestration Leadership Forum
- Washington International Renewable Energy Conference

INTERNATIONAL IN 2008 (CONT'D)

- Tri-lateral Issues of Energy Efficiency, Energy Security and Climate are embedded in each of these international partnerships.

- Additional international cooperation is desirable to further speed the adoption of energy efficiency technology.

FINAL THOUGHTS ON EFFICIENCY, SECURITY & CLIMATE

(Drawn from WEC climate change study)

- No single source, technology policy or strategy can meet the challenges. All energy options need to be open.

- No single approach can work everywhere. A range of measures must be considered as appropriate to unique circumstances.

FINAL THOUGHTS ON EFFICIENCY, SECURITY & CLIMATE (CONT'D)

- Effective, consistent and predictable policies are needed to enable long-term investment in clean technology.
- International cooperation essential:
  - Energy efficiency in both supply and demand.
  - Decarbonize electricity.
  - Contain growth in transportation emissions and develop carbon free alternatives.
  - Major effort on technology development and deployment.

Asia-Pacific Partnership on Clean Development and Climate

- …brings together seven major Asia-Pacific countries – Australia, Canada, China, India, Japan, Korea, and the United States – in an effort to address increased energy needs and the associated issues of air pollution, energy security, and climate change.
- …established to achieve these objectives in ways that promote economic development, reduce poverty, and accelerate the development and deployment of cleaner, more efficient technologies.
- …builds on the foundation of existing bilateral and multilateral initiatives, and is consistent with and contributes to Partners' efforts under the United Nations' Framework Convention on Climate Change, while complementing the Kyoto Protocol.

Asia-Pacific Partnership on Clean Development and Climate

PARTNERSHIP MEMBERS ACCOUNT FOR MORE THAN:

- 50% of world population
- 50% of the world economy

ASIA-PACIFIC PARTNERSHIP TASK FORCES

1. Aluminum
2. Buildings and Appliances
3. Cement
4. Cleaner Fossil Energy
5. Coal Mining
6. Power Generation and Transmission
7. Renewable Energy and Distributed Generation
8. Steel

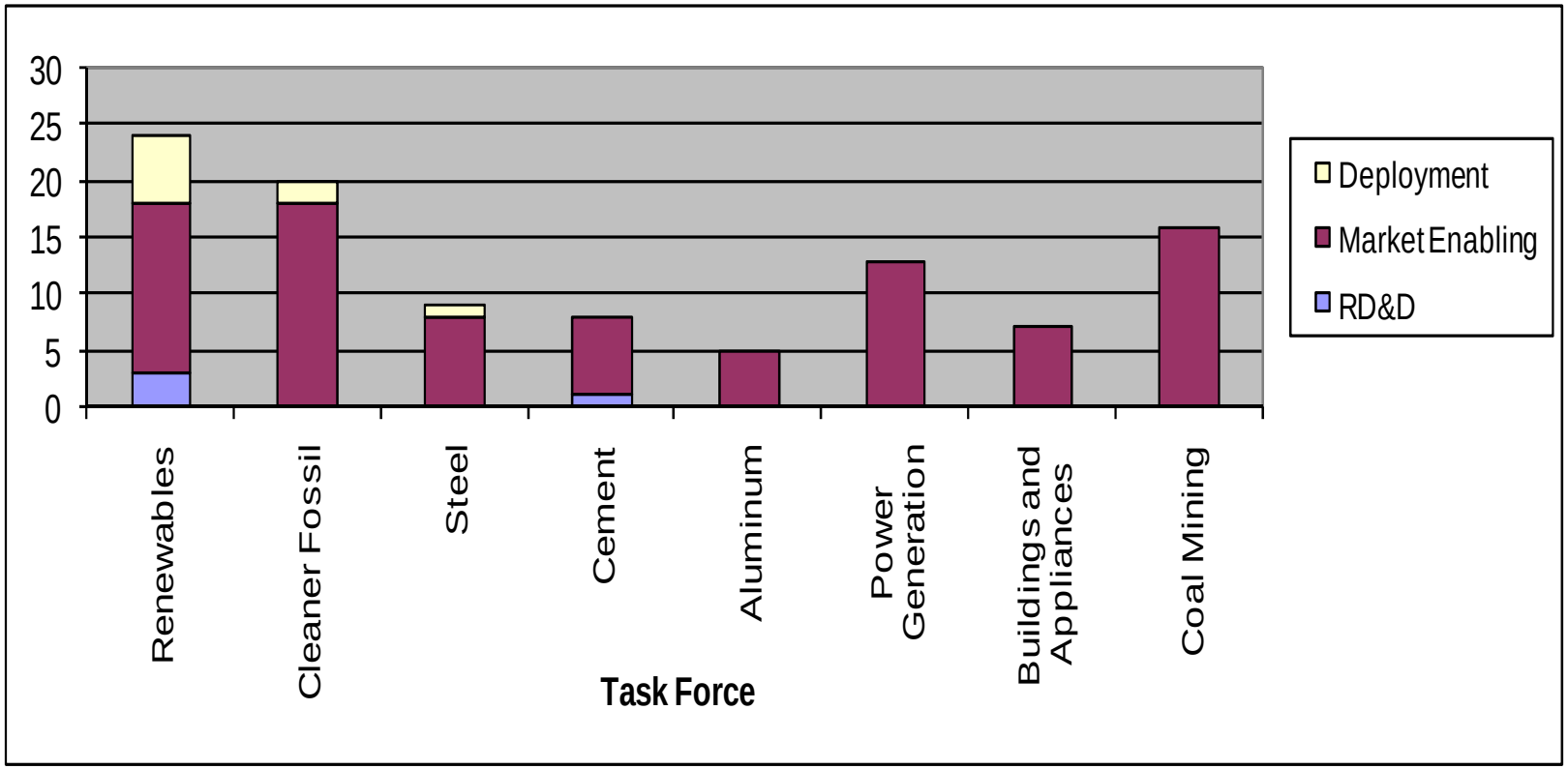
Asia-Pacific Partnership on Clean Development and Climate

Illustrative examples of Partnership work include:

- Managing bauxite residue in aluminum production
- Cooperating to standardize energy efficient lighting
- Transforming waste to fuel in cement kilns
- Improving carbon capture technology for coal-fired power plants
- Developing coal mining health and safety strategies
- Sharing best practices in power generation
- Promoting solar power deployment
- Increasing usage of cleaner steel technologies.

Asia-Pacific Partnership on Clean Development and Climate

~ 100 Projects Endorsed since 2006



International Partnership for the Hydrogen Economy

Purpose:

"Serve as a mechanism to organize and implement effective, efficient, and focused international research, development, demonstration and commercial utilization activities that advance the transition to a global hydrogen economy and to provide a forum for advancing policies, and common codes and standards."

International Partnership for the Hydrogen Economy

IPHE Partners

Russian Federation

USA

Canada

Iceland

Japan

Republic of Korea

China

India

IPHE Partners' Economy:

- Over $35 Trillion in GDP, 85% of world GDP
- Nearly 3.5 billion people
- Over 75% of electricity used worldwide;
- > 2/3 of CO_2 emissions and energy consumption

United Kingdom

France

Germany

Italy

Australia

Brazil

Norway

European Commission

New Zealand

International Partnership for the Hydrogen Economy

Established in November 2003 for 10 years

- Two committees, supported by a Secretariat
  - Steering Committee (SC)
  - Implementation and Liaison Committee (ILC)
- Chaired by United States for initial 4 years including Secretariat function
  - Canada 1st of three successive countries to chair organization
- 17 partners, growing interest by other countries *(e.g. Israel, Mexico, South Africa)*

International Partnership for the Hydrogen Economy

IPHE Achievements
Completed and Ongoing Activities

- RD&D and commercial utilization collaborative projects
  - 30 projects have been formally recognized since 2005
- IPHE international workshops
  - Hydrogen Storage – Italy
  - IPHE-IEA Workshop on PEFCs – Belgium
  - IPHE-IEA Workshop on SOFCs – Canada
  - Safety, Codes and Standards – Italy
  - Education – Iceland
  - Production from Renewables – Spain
  - IPHE-IEA Workshops on Infrastructure - USA/France/China
- Global Hydrogen and Fuel Cell Faculty Club
  - Development of curriculum and education content for students and the public
- Co-labeling of IPHE Events
  - E.g. Canadian H2 & Fuel Cell Conference – May 2007

International Partnership for the Hydrogen Economy

IPHE Achievements
Completed and Ongoing Activities

- Commercially Available Products List
  - Gathering of currently available hydrogen and fuel cell products in the marketplace from IPHE members
- IPHE publications
  - Compendium of Funding Resources; Guide for Policymakers; Country Papers on National Programming; World Demonstration Project Atlas
- Scoping papers
  - Production; Storage; Collaborative R&D;
  - Regulations, Codes and Standards;
  - Socio-economics; Education; Demonstrations

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