

Environment and Energy Conference 2003 Technical Sessions Summary

Session: Implications of Energy Related Policies on the Environment

The session had two distinct sub-themes. The first group of presentations fit within the topic *Implications of energy related policies on the environment* while the second emphasized *Socio-economic implications of energy policies*.

Many speakers noted that there is much better understanding today of the often complex links between using energy, meeting development needs (particularly through economic growth that reduces absolute poverty levels), and maintaining environmental quality. There is also greater appreciation that in balancing these different goals society is often required to make difficult choices with high levels of uncertainty associated with the outcomes. This is particularly true regarding climate change.

On this issue, differences of opinion exist about the relative share that different primary energy types will play over time and the future importance of renewable energy and nuclear power technologies, mostly depending on views about the pace and type of technology development that will occur and costs of oil as the main fossil fuel price setter.

The energy industry continues to gain experience in environmental management and there is much that can be done to reduce the environmental impact of its operations while meeting evolving societal objectives. Many opportunities make good business sense, both narrowly from an immediate cost perspective but also more broadly as companies look to meeting the concerns of shareholders and stakeholders over the long term. The private sector must often work with partners in realizing these opportunities, including those in government, NGOs and local communities; hence approaches that emphasize partnerships are crucial. Practical measures must be taken at the operating level, but high-level commitment is critical for sending correct signals downward. Climate change is the most difficult challenge but even in this area there are good examples of action the private sector can take to reduce greenhouse gas emissions.

Session: Socio Economic Implications of Energy Policies

The session emphasized that oil supply and revenue can be the answer to poverty alleviation and way forward to providing access to energy for the third of the global population that currently do not have access. The main concern is how we can provide 2 billion people access to affordable energy.

Developing countries should not seek to imitate the developed world model of development but rather seek to obtain a quality of life that is compatible with Sustainable Development that balances Economic, Social and Environmental factors.

Since price is the driver, linkage should be established with consumer behavior and with population growth rates in order to provide access to energy in the third world countries as well as meet the demand of the developed world. High prices may actually be good for the environment as they encourage greater efficiency, however these may not be good for reducing poverty.

Society's consumption attitude is the driver for clean technologies.

Session: Promoting Participation in Developing Sustainable Energy Policies

The session highlighted that especially in developing countries the following can be observed:

- Lack of integrated energy planning;
- Need for increased access to power and security of supplies;
- Need to move towards more sustainable products and use of energy

Strategically in the region the following points should be emphasized in order to promote sustainable energy policies:

1. Energy efficiency and energy conservation management;
2. Load management;
3. Financial incentives;
4. Research and development;
5. Information dissemination and technology transfer and indigenization (adapt but not merely adopt);
6. Awareness, education and training;
7. Partnerships between private, public and NGOs sectors.

Session: Standardization, Certification and Environmental Compliance

This session addressed two distinct approaches to environmental management/regulation: the voluntary approach and the regulation/compliance approach.

The first of these addressed the use of Environmental Management Systems as a tool within industry for self-auditing and self-monitoring, taking a systematic approach to the management of environmental impacts of an industrial installation, focusing on their use for the effective management of energy. The second addressed the approaches used within the Arab region to achieve compliance with standards in terms of energy

management. The presentation highlighted that regulating compliance faces many challenges in the region.

The session highlighted the use of the different approaches, emphasizing the role of voluntary initiatives in building a more open and transparent culture within industry. Such a culture will allow the development of a two-way communication between the regulators and the regulated. Emphasis was also placed on the requirement for comprehensive and reliable environmental data in order to implement both voluntary initiatives and regulation/compliance approaches.

Session: Developing Win-Win Solutions

In this session innovative approaches to address environmental concerns in the context of energy were addressed, with the suggestion to use cost-benefit analysis to incorporate environmental accounting into policy assessment. Air pollution from the whole energy sector and from agricultural residues allows equitable comparisons of all policy options.

Energy service supply for remote areas should be based on a commercialized, least cost technology option. This would include public-private partnership within an institutional framework, which includes all stakeholders. Rural energy for production uses can contribute directly to poverty alleviation.

Session: Poverty Alleviation: Meeting the Needs of the Poor

The session summarized that the Arab Region faces acute shortage of water and variability in energy availability with adverse effects on economic and social development. Access to energy varies from 97.5% (Kuwait) to 33% (Yemen), which impact services to health, education and employment. Recommended measures and energy resources include the need for the development, diffusion and use of energy efficient technologies, and cleaner fossil fuels and dissemination of renewable energy systems as well as on promoting innovative energy financing arrangements.

Energy has strong linkages with poverty, being central to basic needs like health and nutrition and loss of economic growth. Some of the measures to combat poverty through energy strategies include acceleration of energy sector reforms, bringing changes in legal and institutional set-up, adopting participatory approaches involving the poor, adopting a bottom-up approach for assessing the energy needs for the poor and devising subsidy policy with innovation for better targeting of the poor.

The session concluded that there is a need for improved access to affordable and diversified energy resources, increased contribution of renewable energy in the energy mix of countries as appropriate, provision of sufficient affordable energy resources for increasing agricultural productivity and food security and increased private sector participation.

Session: Promoting Partnership on Disseminating Sustainable Energy Technologies

The session presentations reported on the experience gained from past and ongoing partnerships targeted at the implementation of Agenda 21 and the strategic necessity to create public and political awareness and involvement in sustainable energy system development. Technology transfer and diffusion play a critical role in this context. Several key elements for successful technology dissemination were identified including integrated & long-term planning, capacity building in energy-environment-economy planning at all relevant levels, i.e., local, regional and national, good governance and supportive public policy. The introduction of less polluting compressed natural gas (CNG) fueled vehicles in several countries in the region was one example. Capacity building for designing sustainable energy strategies was another one. These practical examples, however, are likely to remain isolated cases unless supported by active promotion of public and political awareness, participation of civil society and good governance. Progress in these areas needs to be monitored and reported in a transparent and factual manner. A system of Indicators for Sustainable Energy Development (ISED) is a powerful tool both for policy formulation and monitoring progress.

The session recommended that technology dissemination should be an integral part of a comprehensive regional energy development strategy and be driven by local or regional needs and sustainable development objectives. Only then will it be possible to effectively identify infrastructure gaps and/or barriers. Political and public awareness should be created on the options available for sustainable energy development based on factual and objective information (both pros and cons of each option) on a technology life cycle basis. This will assist in prioritization and the removal of potential barriers to eventual implementation, especially if based on a full participatory approach of all stakeholders.

No technology dissemination should take place without the necessary capacity building at the local level covering the technology's life cycle. Setting up national data collection and monitoring systems is thus essential for the development of Indicators for Sustainable Energy Development.

Session: Promoting Awareness on Sustainable Energy Systems

The session reported that growth rate of energy consumption in the Arab Region countries is high, and is expected to increase in the years to come. Energy consumption indicators show that energy is consumed in an inefficient manner. Large potential and opportunities exist for energy saving along the energy chain from exploration to consumption. Extensive awareness programmes on energy conservation and energy improvements are essential for achieving energy savings

Maintaining awareness is an essential success factor for achieving energy development in the Arab region. Awareness programmes on energy issues at school level, could be a sound basis for creating good energy education projects in the region

The unsustainable world fossil fuel consumption is negatively impacting the environment. A number of schemes were adopted by a number of countries to reduce the emission of CO₂ and other GHGs such as CO labels and carbon trading systems.

The following recommendations were drawn from the session:

1. To tailor training programmes and awareness campaigns to meet the demands of all concerned energy stakeholders including consumers, decision makers and professionals.
2. To establish and formalize engineering education programmes to achieve the identified needs leading to awareness of sustainable energy and environmental management.
3. To promote cooperation at the regional and international level among governments, for funding R&D, to minimize overlap while maximizing competition.

Session: CDM Workshop

The purpose of the Clean Development Mechanism is to assist developing countries achieve sustainable development, and to assist industrialized countries achieve compliance with their GHG emission reduction targets under the Kyoto Protocol at lower cost.

The CDM is expected to mobilize financial resources and transfer improved technologies from the public and private sectors in developed countries to developing countries. In doing so the CDM is supposed to both support development objectives and reduce the emission of greenhouse gases.

CDM projects cover a wide range of sectors such as energy, industry and others (waste management, transportation carbon sequestration...). Potential CDM projects in the region may concentrate on energy efficiency; clean fuel and clean technologies, reduction in gas venting and flaring, carbon sinks (desertification combat) and renewable energy.

Successful projects are likely to be those that are high quality, have low risks and costs, offer a high rate of return and are based on transparent partnerships. Many benefits can be realized from such a market driven mechanism, however, challenges have to be first overcome, including institutional capacity building, awareness raising and political commitment.

The panel discussion debated the interest of oil exporting countries in the CDM, and investigated potential partners to CDM projects in the region. The panel concluded by emphasizing the need for awareness raising, institution and capacity building, highlighting the benefits and dissemination of success stories.

Sessions: Current Technologies and Future Technologies

The sessions discussed ways and means to increase the efficiency of current energy technologies and to develop environmentally sound future technologies for sustainable development.

The collective recommendations that have emerged from the two sessions are the following:

- Reduction of energy demand and usage should be based on policy objectives taking into consideration national conditions and needs;
- Focus should be devoted to energy intensive sectors and industries in order to increase energy efficiency through sound technologies;
- Enhancing regional and international cooperation, particularly in terms of transfer of technologies and capacity building, and emphasizing the unique role of the private sector in the stewardship of research and development;
- Emphasizing the importance of supporting research and development for improving clean and efficient technologies, including enhancing existing research centers and the establishment of regional centers of excellence on energy for sustainable development;
- Promotion of regional and international conferences and meetings on energy technologies to facilitate networking and experience exchanges among experts;
- Promotion of Cleaner Production principles and applications through pilot projects and the establishment of national cleaner production centers;
- Cost effectiveness, technical merits and environmental and social favorability are the criteria to be considered when improving and developing energy related sound technologies;
- Focus regarding technologies for energy should be holistic and diversified to include energy efficiency, clean fuel, clean technologies as well as renewable energies.

Session: Clean Production Strategies

The session emphasized the need for adopting and implementing pollution prevention and cleaner production strategies in the region, especially in the energy sector. The linkage between energy efficiency and cleaner production and sustainable consumption is unquestionable.

Dissemination of cleaner production techniques and applications, such as ISO 14001 should prove beneficial.

The session also addressed the Global Compact initiative launched by the UN Secretary General in 1999 and emphasized the importance of corporate citizenship to integrate the principles of human rights, labor and environment in their strategic vision and operating practices.

Concrete examples and experiences from companies around the world adopting such principles were demonstrated. Regional businesses are encouraged to utilize the values and benefits emanating from good corporate citizenship.

Conference Recommendations

Energy Policy and Planning

1. Energy policy needs to be developed first at the national level and then integrated at the regional level. Sectoral energy requirements should be integrated into the policy formation. Reduction of energy demand and usage should be based on policy objectives taking into consideration national conditions and needs.
2. Energy sector planning should consider environmental conditions at local, national and regional levels in order to utilize the opportunities to be creative and to perform good business.
3. The importance of partnership should be emphasized where the private sector works with Government, NGOs and local communities on the development of sound energy policies.
4. In the region, integrated strategies, policies and planning should include the following elements: energy efficiency and energy conservation management, load management, financial incentives, research and development, information dissemination and technology transfer and indigenization, awareness, education and training, and partnerships between private, public and NGOs sectors.
5. Integration and collaboration in the region should be sought through joint Arab projects such as the regional electric grids and gas networks.

Energy and Sustainable Development

6. Developing countries should seek to obtain a quality of life that is compatible with sustainable development and consumption that balances economic, social and environmental needs.
7. Oil supply and revenue can be the answer to poverty alleviation and to providing access to affordable energy for the 2 billion people who are currently without such access.
8. Measures to combat poverty through energy strategies may include acceleration of energy sector reforms, bringing changes in legal and institutional frameworks and adopting a bottom-up approach involving the poor. Such measures entail improved access to affordable and diversified energy resources, increased contribution of renewable energy in the energy mix, and increasing productivity and food security.

Energy Technology and Techniques

9. Cleaner Production principles and applications should be implemented, especially in the energy related sectors through pilot projects and the establishment of national cleaner production centers. Environmental Management Systems (e.g. ISO 14001), life cycle assessment and other voluntarily initiatives such as global compact are also effective approaches and tools to the management of energy related sectors.
10. Focus should be devoted to energy intensive sectors and industries to increase energy efficiency through sound technologies.

11. Regional and international cooperation, particularly in terms of transfer of technologies and capacity building should be enhanced, emphasizing the unique role of the private sector in the stewardship of research and development.
12. The importance of supporting research and development for improving clean and efficient technologies should be stressed, by enhancing existing research centers and by initiating the establishment of regional centers of excellence on energy for sustainable development.
13. Cost effectiveness, technical merits and environmental and social favorability should be the criteria for consideration when developing and improving energy related sound technologies.
14. Focus regarding technologies for energy should be holistic and diversified to include energy efficiency, clean fuel, clean technologies as well as renewable energy resources.
15. Regional and international conferences and meetings on energy technologies to facilitate networking and experience exchange among experts should be supported and convened regularly.
16. Training programmes and awareness campaigns (including engineering education) should be developed to meet the demands of all concerned energy stakeholders in terms of sustainable energy development.

The Clean Development Mechanism

17. The Clean Development Mechanism (CDM) provides the proper vehicle to achieve sustainable development and reduce greenhouse gas emission. CDM projects in the region should be promoted concentrating on energy efficiency, clean fuel and clean technologies, reduction in gas venting and flaring, carbon sequestration (e.g. afforestation/reforestation and desertification combat) and renewable energy.
18. Benefits can be realized from CDM; however, challenges have to be first overcome in the region, including institutional capacity building, awareness raising and political commitment.

The Future

19. Governments, NGOs and regional and international organizations should work towards incorporating the above recommendations into their programmes and activities.