Keynote address
The global energy challenge: technology scenarios for a sustainable future

Chairperson
Mr V Subramanian, Secretary, Ministry of New and Renewable Energy, Government of India, New Delhi

Speaker
Mr Claude Mandil, Executive Director, International Energy Agency, France

Day 2 of DSDS 2007 began with a keynote address by Mr Claude Mandil, Executive Director, IEA (International Energy Agency), France. Titled The global energy challenge: technology scenarios for a sustainable future, his speech began with the persuasive contention that the three Is – energy security, environment protection, and economic growth – are inviolable pillars of sustainability. The growth pattern, however, would lead to significant increase in emissions and result in high import dependencies for all major consumers. These two factors, coupled with the ever-growing threat of climate change, would hurt long-term economic growth.

Mr Mandil’s speech then focused on comparing and contrasting future emission scenarios. To understand the potential emission reductions new technology options can help achieve, the IEA has created scenarios till 2050, which is the realistic point at which newer technologies can make a significant difference to emission trends. Mr Mandil shared these scenarios and pointed out that optimal deployment of clean technologies already available would help reverse global emission trends by 2050, but persisting with conventional technologies would exacerbate emissions to unmanageable levels.

The IEA reference scenarios highlight the fact that the world is on a completely unsustainable path, with a projected 85% of energy coming from fossil fuels in 2050. This would mean a steep increase in global emissions. But, if the world dedicates more resources, research, and commitment to new technologies to increase energy efficiency; introduces cost-effective renewables; and applies carbon capture and sequestration technology, emission levels in 2050 would be the same as they were in 2003. The choice before the world could not have been clearer—switch to newer, cleaner technologies now to ease the pressure on the planet’s climate, or continue with a business-as-usual mindset and be prepared for runaway global warming in less than 50 years.
Keynote address

Perspectives on climate change

Chairperson
Mr Nitin Desai, former Secretary General of the United Nations
Speaker
Dr R K Pachauri, Director-General, TERI

Policy formulation with regard to climate change must follow the principles of equity and sustainable development, said Dr R K Pachauri, Director-General, TERI. Efforts should be directed towards enhancing social and natural capital. In addition, there is a need to manage natural resources carefully. For instance, in the case of climate change, the atmosphere is to be managed efficiently.

The Kyoto Protocol was identified as a mechanism that could facilitate technological breakthroughs to reduce greenhouse gas emissions. Although the Protocol is not a perfect agreement, it is a major step forward. Clean development mechanism projects do hold hope. The Protocol has resulted in the initiation of a carbon market that shall expand in future. Several countries are worried about the costs of meeting the Protocol targets. However, IPCC analysis shows that the benefits outweigh the costs.

The impacts of global warming will be felt most by the developing countries. Therefore, there is a need to cope with the situation using traditional and modern knowledge. On the issue of technology transfer, the UNFCCC clearly specifies that the incremental cost will be supplied by developing countries. While covering of incremental cost is essential, the overall life cycle cost should also be looked at.

The time has come for the global community to come up with win-win opportunities. The solution lies in integrating climate change into development thinking.

It is now beyond doubt that the energy choices we make have a direct bearing on our efforts to attain sustainable development. The session saw focused discussions around making the right energy choices, and in a manner that leads to a decisive shift of development paradigms towards just and sustainable models. Speakers in the session agreed that the year 2006 has been a minor watershed in the context of energy use, with governments, business, scientists, and society making measurable efforts to reduce the use of fossil fuels, increase awareness of the environmental consequences arising from fossil fuel emissions, and promote new and renewable energy systems. However, the magnitude of the challenge facing the sustainable development movement can be gauged by the fact that such initiatives have barely scratched the surface of the problem. The fact remains that global energy demand is going to continue to increase, and fossil fuels will be the only widely available option to meet the increased demand. The challenge before the world community is to increase the basket of options available to a world hungry for more energy, and fill that basket with clean technologies and renewable sources of energy.

To achieve this, speakers suggested several strategies, central to which was the need to foster greater cohesion and collaboration between stakeholders. PPPs (public–private partnerships) have a key role to play in this context. The traditional template for PPP – an institutional arrangement between the private sector and governments – needs to be redefined and expanded to include the civil society and local bodies. Governments, it was suggested, should make more concerted efforts to create an enabling environment for the blossoming of PPPs and the integration of energy, environment, and society. A clear regulatory framework, an incentive regime, and policy support were some of the mechanisms governments could consider.

Speakers also spoke about the need for greater international consensus on energy issues, especially the urgent issue of reducing the environmental impacts of fossil fuel consumption. They noted that while developing nations must approach the energy-environment question within their broader development goals, it is important for developed countries to take a lead in this regard.

As they said it...

Rather than talking about economic costs and benefits, we ought to be talking about the costs of action and inaction, which are borne by different people.

Mr Nitin Desai, former Under Secretary General of the United Nations

The global community has failed to tackle problems like poverty, climate change, and declining biodiversity. Mr Pieter van Geel, Cohen level State Secretary, Ministry of Housing, Spatial Planning and the Environment, The Netherlands
The focus of the address by Prof. Paul Crutzen, Director Emeritus, Max Planck Institute for Chemistry, Germany, was on the scientific aspects of climate change and its history, the challenges we face today, and the possible solutions. The issue of climate change needs to be broadened from the main theme of carbon dioxide emissions, to consider other ozone-depleting gases such as methane, water vapour, and nitrous oxides. Heightened human activity has changed atmospheric chemistry and, as a result, global temperature is rising. We need to ask ourselves the question: ‘what can we do?’

There is an urgent need to stabilize the carbon dioxide in the atmosphere by reducing emissions by 80%. Although methane emissions have stabilized in the past five years, nitrous oxide emission is still a matter of concern. Chlorofluorocarbon reduction has been achieved, but due to its long lifetime, it will continue to linger in the atmosphere for at least 70 years. Solutions are available in the form of striving for energy efficiency; carbon capture and storage; using nuclear power and renewable energy; and so on. One option on offer is an experiment that involves releasing sulphur into the stratosphere (as in volcanic eruptions). Advanced models that enabled the creation of the exact atmospheric environment under controlled conditions were established. Thereafter, the model was used to investigate the effects under three different scenarios. In the first scenario, carbon dioxide concentration is doubled; in the second, sulphur is ejected; and in the third, both these situations occur simultaneously. The outcome showed that when both situations occurred, the climate nearly imitates actual conditions. Prof. Crutzen emphasized its importance in the present day.

HE Mr Alain Juppe, former Prime Minister of France and Mayor of Bordeaux, France

HE Mr Alain Juppe reiterated that the existence of an era of ‘knowledge expansion’, as an era of ‘climate change refugees’. He emphasized on the mainstreaming of environmental concerns and the insufficient support to developing countries. He concluded by saying that it was time to face responsibility and give the UN tools, means, and authority it needs by upgrading the UNEP into a special agency for environment. He proposed setting up of UNEO (United Nations Environment Organization) with a strong coordination mandate. An umbrella organization, the UNEO, would ensure policy and decision-making based on sound and reliable knowledge, headed by an executive director who would be the global face and voice of the environment.
Environment and poverty were traditionally treated as two disconnected issues having few overlaps within the development paradigm. But increasingly, through focused developmental initiatives in the recent past, the gap between the two issues has reduced.

In this session, the discussion shifted towards one of the key outcomes of the reducing disconnect between the environment and the poverty conundrums. This is the search for technologies for the poor that are not only affordable but also sustainable. It was stated that such technology should essentially fulfill 3 As: affordability, accessibility, and appropriateness.

In this context, speakers recommended framing technology-specific developmental programmes focusing on the vulnerability of the poor, and which draw upon traditional, indigenous knowledge for inspiration.

To address the affordability aspect of sustainable technologies, panelists suggested the creation of markets that involve the poor as actors or producers in the value chain. Speakers also called on governments to address the issue of absence of micro-enterprises for economic development for the poor in developing countries. Other subjects that were discussed in the session included international funding for research and development in global public goods, collaborative North–South research and South–South cooperation, and the need for stakeholders to work towards bringing about a change in mindsets.