



## **Securing our energy futures**

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*Background discussion paper*

### **Sustainable energy: an environmental paradox?**

Human development depends on access to reliable and sustainable sources of energy. The current energy mix is a cause of biodiversity loss, air and water pollution and climate change, all of which threaten our future and imperil the planet. Because of the culmination of these issues, societies around the world are reassessing their energy options. The International Energy Conference held in Vienna Austria last week was witness to this trend, but participants of such events are finding that while there is much discussion about sustainable energy futures, the changes necessary are not happening fast enough. What are the barriers to this transition and how can the environmental community overcome differences to assist this transition?

While it is recognized that the future will be powered by a diverse energy mix and that fossil fuels will continue to be developed into at least the medium term, it is increasingly accepted that deploying energy efficiency and renewable energy technologies can help nations move towards delivery of the UN Millennium Development Goals, while meeting the objectives of the UN Framework Convention on Climate Change. Consistent with “Green Economy” thinking, developing renewable energy resources provides an opportunity to diversify energy supply mixes and to phase out increasingly expensive fossil fuels. The wide range of available renewable technologies (including wind, solar, geothermal, biomass, and hydro) allows policy-makers to choose an optimal mix of resources best-suited to their environment.

However, all energy options can have negative effects on both the environment and people. These impacts must be properly managed to avoid creating further problems or reducing the other benefits that we gain from nature, water flows for fisheries and biomass production for food.

Moreover, the perceived and real adverse impacts of some renewable technologies on the environment and on people's livelihoods have resulted in delaying or even halting the pursuit of some renewable energy projects. Admittedly, environmental groups do not all agree on the best way to avoid climate change, or on the most appropriate energy options - each one carries its own set of challenges. For example, the development of wind farms as a ‘clean’ energy source is causing controversy among bird and bat specialists. It is not easy to decide whether limiting climate change is more important than conserving nature, given that climate change is one of the biggest threats to nature.

On the other hand, the environment can also offer energy solutions: energy supply both depends on, and impacts, natural ecosystems such as forests, oceans and rivers. The Millennium Ecosystem Assessment, on the other hand, has found that more than two thirds of the world's ecosystems are degraded or in decline, which poses significant threats to our energy future. People in developing countries are particularly affected, where they can't afford expensive alternatives, often rely directly on ecosystems for their energy needs; over 2 billion people depend on burning wood, plants and animal waste for cooking and heating. The world's poor need more energy which is healthy, reliable and sustainable.

Given that energy consumption is set to double by 2030, both the environmental community and the energy decision-makers must pragmatically find a way to assess and manage the trade-offs between energy and biodiversity.

### **The way forward**

As the best option for lowering emissions at the least cost and with minimal risks to people or nature, energy efficiency and conservation measures should be pursued as the highest priority strategy.

With limited financing (especially in the current economic crisis) and long lifespans for capital stocks, it is essential that money is invested now into energy options that will put us on the road to a more sustainable energy future. The best options are those that are socially, economically and environmentally sustainable. Decisions on which option to choose—whether it is biofuel, local hydropower, solar power or wind—should be based on a full understanding of the advantages and disadvantages.

It is imperative to engage stakeholders (including, in particular, women and vulnerable groups) in the choice of energy technologies, to help build commitment to investments, ensure the sustainability of the investment, and can assist in developing financing mechanisms that accommodate the project and local circumstances. National policies should encourage communities to embrace renewable energy technologies, and to make informed decisions in adopting technologies that are well-suited for the local environment. Donors supporting energy projects should respect national priorities and decisions about appropriate technologies and sites for energy infrastructure.

Through robust legal and regulatory frameworks, the implementation of renewable technologies can be fostered while safeguarding the environment and peoples' livelihoods. Strong international institutional structures, such as IRENA (the newly established International Renewable Energy Agency), can help to promote such safeguards, thereby supporting the rapid transition needed to more sustainable energy futures.

### **Questions for discussion**

How can energy technologies that are dependent on natural systems offer truly sustainable solutions?

What are the main barriers to this transition and how can these barriers be overcome?

What could be done to spur investments in renewable and emerging technologies?

How can investments in ecosystem services be part of national and global energy security strategies as well as corporate investment programmes?