

1. The critical issues/challenges within the spectrum of your topic that call for policy decisions.

There are two key issues driving the need for a massive expansion of renewable energy. These are: climate change and poverty alleviation.

➤ **Climate Change**

The threat of global climate change has been recognised by most governments, politicians and climate scientists. It has been rightly called the most important threat we all face today. We have reached this situation mainly due to the massive and continuing use of fossil fuels – oil, coal and gas – as a source of primary energy that, since the industrial revolution has pumped vast amounts of greenhouse gases, mainly carbon dioxide (CO₂), into the atmosphere. It is the industrialised countries whose excess and profligate use of energy that bear the main responsibility for this. At the same time we have destroyed vast tracts of forests that has released releasing billions of tons of carbon into the atmosphere.

This being the case there are two major actions needed: a switch from the use of fossil fuels to renewable energy technologies as a source of primary energy together with a massive expansion of energy efficiency programmes, and an end to deforestation.

The primary focus for this paper is renewable energy.

➤ **Poverty Alleviation**

Over one billion people – two thirds of them women – live in abject poverty, and a further two billion people live on less than \$2 a day. Poverty is a scourge on the face of humanity.¹ The Millennium Development Goals adopted at the UN Millennium Assembly in 2000 contain internationally agreed targets to be met by 2015, covering poverty, hunger, health, education, and environmental sustainability. Access to energy services is a crucial element in achieving these goals; a fact recognized by the Johannesburg action plan which states that “access to energy facilitates the eradication of poverty”.²

The goal of halving poverty by 2015 will not be reached without energy to increase production, income and education, creating jobs and reducing the daily grind of collecting water and fuel for heating and cooking, which falls disproportionately upon women. Halving hunger will not come about without energy for more productive growing, harvesting, processing and marketing of food. Improving health and reducing death rates will not happen without energy for the refrigeration needed for clinics, hospitals and vaccination campaigns. The world’s greatest child killer, acute respiratory infection, will not be tackled without dealing with smoke from cooking fires in the home. Children will not study at night without light in their homes. Clean water will not be pumped or treated without energy.

The poor face another threat from climate change, driven by the excessive fossil fuel consumption of industrialised countries. Poverty makes them the most vulnerable and least able to cope with the impacts of climate change we are already experiencing. Thousands have already died and millions more made homeless due to floods, droughts and other extreme weather

¹ Poverty and Climate Change; Reducing the Vulnerability of the Poor. A discussion document prepared for the 8th conference of parties to the UN FCCC. October 2002 prepared by: African Development Bank (AfDB) Asian Development Bank (ADB) Department for International Development, United Kingdom (DFID) Directorate-General for International Cooperation, the Netherlands (DGIS) Directorate General for Development, European Commission (EC) Federal Ministry for Economic Cooperation and Development, Germany (BMZ) Organization for Economic Cooperation and Development (OECD) United Nations Development Programme (UNDP) United Nations Environment Programme (UNEP) The World Bank

² Johannesburg Plan of Implementation – Poverty Eradication.

events³ and the vulnerability of people and economies of the small Island developing states is widely known.

2. Summary of the policy options and alternative approaches and the factors considered in arriving at these approaches.

Access to energy services is central to reducing poverty and hunger, improving health, increasing literacy and education and improving the lives of women and children. Hitherto, energy services have been supplied mainly by the use of fossil fuels, hydropower and, particularly for developing countries, 'traditional' biomass. But the local environmental and human health impacts of conventional energy sources as well as their impacts on the global climate demands a rapid shift away from conventional energy sources to renewable energy technologies and energy efficiency.

Renewable Energy includes modern biomass, small hydro (up to 10MW and compliant with the World Commission on Dams; mechanical as well as electric), geothermal, wind, all solar, tidal, wave and other marine energy. Modern biomass includes improved use of traditional biomass such as 'smokeless' efficient cook stoves as well as electricity generation, heat production and liquid fuels from carbon neutral and low input, sustainable sources of biomass.

Industrialised countries have benefited most from the use of conventional energy sources in terms of economic development. It is now a key responsibility for industrialised countries to divert the substantial financial flows⁴ from the conventional energy sector to the renewable sector in order to both reduce emissions of greenhouse gases and create economies of scale necessary for a global expansion of renewable energy.

It is important to acknowledge that even if all the countries in the small island developing states immediately switched all their energy sources to renewable energy, without the industrialised countries substantially cutting emissions and vastly expanding their use of renewable energy, then climate change will continue. However, all developing countries are faced with a choice of sources to supply the energy services. The route of conventional energy sources is expensive, unreliable, and adversely impacts both the environment and human health. Imports of fossil fuels are also a major macro-economic exposure for SIDS, and rapid fluctuations in international commodity markets can have a devastating effect on their economies. Alternatively, the route of expanding renewable energy technologies and energy efficiency programmes ensures protection of the environment and human health, guarantees security of supply and empowers local communities. For the poor, particularly the rural poor and isolated communities without basic energy services, renewable energy is often the cheapest option offering sustainability, employment and secures independent energy sources.

Making the choice to demand renewable energy technologies not only benefits the poor and the environment, it also sends an important political signal to all governments, particularly the OECD, and the financial institutes residing in these countries, that developing nations wish to choose a sustainable path, one that will enable economic development without relying on dirty, obsolete, expensive and polluting technologies. However, key factors in the encouraging the uptake of clean, affordable energy are the fiscal and energy policies of governments north and south, and financial institutes, which need to be changed from the overwhelming support currently given to conventional energy sources – fossil fuels, nuclear and large dam projects – to support for renewable energy technologies and energy efficiency programmes. In this respect there are a number of steps that need to be taken:

³ Millions at Risk paper; defining critical climate change threats and targets. Martin Parry et al, Jackson Environment Institute www.jei.uea.ac.uk

⁴ These financial flows include subsidies to fossil fuels and nuclear power currently estimated at US\$250 billion a year, credit support and loans from their export credit agencies (ECAs) and private banks.

Contribution to the IRFD policy document to be submitted to the UN International Meeting on Small Island Developing States, Mauritius, January 2005

1. Multilateral development banks and Export Credit Agencies (ECAs) should contribute to eliminating the fiscal and regulatory barriers to renewable technologies and energy efficiency programmes by:
 - providing for repayment terms that favour renewable technologies,
 - facilitating project finance assembling and lower transaction costs by preferential premium charges and interest rates⁵;
 - ensuring that promoting renewable energy technology exports leads to real technology transfer not technology dumping causing new dependencies or inequities;
 - supporting micro-credits proven to help local empowerment;
 - committing to policy and capacity transfer to developing countries.
2. All OECD governments should stop granting direct or indirect export credits, to coal or oil fuelled energy projects⁶, stop funding nuclear related projects and all large hydro projects and hydro projects that do not comply with World Commission on Dams' principles.
3. OECD governments should immediately target 20% of their energy sector lending and support in the form of guarantees via their ECAs to renewable energy and energy efficiency programmes⁷. This should also apply to other financial institutes in which these governments are involved.
4. All governments should commit to phase out subsidies to conventional energy sources, estimated at \$US 250-300 billion annually, within 10 years; with a transition plan and flexible time frames to avoid undue hardships on developing country economies overly reliant upon conventional energy sources and exports. While meeting the development goals for the world's poorest will require subsidies for the foreseeable future, it is clear that these massive subsidies to the oil, coal, gas and nuclear industries are one of the primary barriers to the rapid global expansion of renewable energy.
5. Internalise the negative costs of fossil fuels, nuclear and large dam projects and internalise the positive benefits of renewable energy technologies, which would help address the subsidy imbalance and market disadvantages experienced by the renewable energy sector.
6. All governments should use appropriate financing and subsidies to give low-income communities, households or entrepreneurs the ability to afford to invest in new sustainable energy technologies.
7. All bilateral aid and trade agreements should prioritise renewable energy sources.
8. All governments should commit to aggressive national renewable portfolio standards, energy efficiency standards and other measures to help build renewable energy markets. The primary responsibility for this initiative must lie with the OECD governments.

3. Identify the theoretical underpinnings of your policy options.

Climate change is already having impacts across the world, and the most vulnerable are those in developing countries and in particular populations living in the small island developing states. There are a range of climate impacts which are associated with a global increase of between 1 and 2°C increase in average global temperature including: damage to crops and livestock; decreased water quality and supply and quality; increase in flood damage; increasing frequency and intensity of extreme weather events; an increased risk to human health due to floods,

⁵ A recommendation of the G8 Renewable Energy Task Force.

⁶ World Bank Extractive Industries Review recommends halting immediately all coal financing and halting oil financing in 2008.

⁷ Such a move is in line with the proposals in the World Bank's Extractive Industries Review that calls for aggressively increasing investments in the renewable energy technology sector (+20%/year)

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droughts and bushfires, and the spread of infectious disease epidemics; increasing ecosystem disturbances by fire and insect pests; increasing frequency and duration of coral bleaching; and a loss of coastal wetlands from sea level rise⁸.

Given the increase in greenhouse gases already pumped into the atmosphere, it is impossible to keep below the 1°C limit but, given the right political will, in order to prevent some of the worst impacts of climate change, global average warming needs to be limited to a peak of less than 2°C above pre-industrial times and should be reduced as fast as possible thereafter. To prevent an increase in temperature of 2°C, industrialised countries need to reduce greenhouse emissions by 70-80% by 2050, with further reductions in global emissions by 2100.

Achieving these emission cuts will be a challenge, but is achievable through much greater utilisation of renewable energy, energy efficiency, demand management and a reduction in the use of fossil fuels. They are necessary if we are going to reduce the impacts of dangerous climate change and avoid some of its economic, social and environmental costs.

Some believe there is an implied trade-off between immediate poverty alleviation and the use of renewable energy or efficient devices, and hence they get labeled as expensive or 'elitist'. But in most cases this is a false claim. Often, the costs of providing sustainable energy are lower than extending conventional electricity grids, or buying fuel oil, batteries and kerosene. In addition, equity, empowerment and environmental soundness are the criteria underpinning improvements in the Human Development Index⁹ – an acknowledgement of the importance that the environment plays in well-being at a local or a global level. This means giving priority to environmentally sound, renewable energy services and increased energy efficiency at the point of use. All three factors are inter-linked and important¹⁰.

4. What are the implications of your policy options on other topic areas?

- **Climate change, fragile ecological systems and human societies in a sea of Islands** - Expanding renewable energy has a positive benefit for all these issues.
- **Population and economies** – expanding renewable energy benefits local communities and economies. The positive energy store is geared to developing local indigenous small businesses.
- **Biodiversity** – no impact (if the feedstocks are grown and harvested sustainably)
- **Transport and physical infrastructure** – can help reduce need to travel
- **Promoting greater self-reliance** – has a major positive benefit to self-reliance.
- **Building human resource and technological capacity** – one key element of the expansion of renewable energy generally and the positive energy store specifically is the building of local capacity, not just in renewable energy technology but in the development and establishment of small enterprises. It also involves real technology transfer and not technology dumping.

⁸ The IPCC in their latest assessment report noted, among other things, that their anticipated range of global sea level rise is now between 14 and 80 cm, with a mid-range estimate of about half a metre

⁹ Reddy, 2001: 'The thrust must be on energy sources and devices that are renewable, biomass-based, universally accessible, affordable, reliable, high quality and safe.'

¹⁰ See also World Energy Assessment, Goldemberg Chapter 10 'Rural Energy in Developing Countries', Box 10.4 'Equity Issues Relating to Photovoltaic Technology for Rural Areas in India', page 377.